



		BHARAT HEAVY ELECTRICAL LIMITED		Enquiry No.		
		HEAVY ELECTRICAL EQUIPMENT PLANT RANIPUR, HARDWAR - 249403, UTTRANCHAL, INDIA		Due Date		
		CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM PURCHASE DEPTT.)		Supplier's Qtn. No.		
				Date		
		PHONE NO.:				
		E-MAIL ID.				
TECHNICAL SPECIFICATION CUM COMPLIANCE CERTIFICATE FOR CNC VERTICAL BORING MACHINE -(1 Nos.)						
1. Vendor (OEM) must submit complete information against clause no. 31.0 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.						
NOTE:-						
ADDRESS OF THE SUPPLIER :						
TELEPHONE NOS.:						
FAX NOS.:						
E-MAIL ADDRESS :						
SCOPE: SUPPLY, ERECTION & COMMISSIONING OF CNC VERTICAL BORERSMACHINE (1 Nos.) COMPLYING WITH SPECIFICATIONS AS BELOW						
SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS	
1.0	PURPOSE & WORKPIECE MATERIAL					
1.1	Purpose: This machine is required for carrying out rough & finish machining operations on casings and other components of Steam Turbines/Gas Turbines etc. demanding high accuracies & surface finish. The machine shall be used for all types of turning, grooving, boring operations on diameters & faces including threading operations. Machine should be capable to achieve surface quality on finish component should be Ra 1.6 or better in optimized condition.	Vendor to note & accept				
1.2	Work Piece Material: Are forgings / castings of High Alloy Steels, Nimonic Steel, Stainless Steel, Inconel in 625/617, Cast Iron and similar other materials which are generally used in power producing equipment having hardness 150 to 500 BHN.	Vendor to note & accept				
2.0	SPECIFICATIONS					


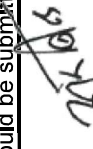


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 Sr. Manager (TUM)


 Rakesh Das
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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
2.1	MACHINE CONFIGURATION				
2.1.1	Double Column CNC Vertical Borer with single Ram	Vendor to offer			
2.2	CAPACITY & SIZE				
2.2.1	Maximum Height for Turning & Facing	4000 mm or more			
2.2.2	Maximum Turning Diameter	5000 mm or more			
2.2.3	Maximum Work piece Weight	120000 Kg or more			
2.2.4	Maximum Swing Diameter	5500 mm or more			
2.2.5	Minimum Boring Diameter (using standard turning tool holder & tool clamped on the RAM)	565mm			
2.3	TABLE				
2.3.1	Table Diameter	4000 mm			
2.3.2	Load Capacity	120000Kg or more			
2.3.3	Table Speed (Infinitely Variable)	Min. 1 rpm or less, Max. 70rpm or more			
2.3.3.1	Speed Ranges	Vendor to inform			
2.3.4	Power of Main Drive (S1 - Continuous Rating) AC	120 kw or more			
2.3.5	Details of Main Drive viz.Type, Make, Model etc.	Vendor to inform			
2.3.6	No. of Jaws/Vices (With Force Multiplier Mechanism)	4			
2.3.7	Maximum External Clamping Diameter (keeping complete vices/jaw boxes within table diameter).	3500mm or more			
2.3.8	Minimum External Clamping Diameter	Vendor to inform			
2.3.9	Maximum Internal Clamping Diameter	Vendor to inform			
2.3.10	Minimum Internal Clamping Diameter	Vendor to inform			
2.3.11	Clamping Force of each Jaw.	Vendor to inform			
2.3.12	Positions and Dimensions of the Jaws on Table. Chucking Capacity Diagram should be submitted.	Vendor to inform & submit			
2.3.13	Type of Force Multiplier Mechanism used in Jaws.	Vendor to inform & submit			
2.3.14	Maximum permissible Cutting Force	Vendor to inform			
2.3.15	Maximum permissible Torque	Vendor to inform			
2.3.16	RPM at which Max. Torque is available.	Vendor to inform			
2.3.17	Table Torque - Speed diagram	Vendor to submit			
2.3.18	Type of Bearing for the Table : Hydrostatic (should be confirmed by Vendor) .	Vendor to inform			
2.3.19	Table's Hydrostatic Bearing minimum diameter 2750mm or more	Vendor to confirm			
2.3.20	Complete details like bearing diameters, sizes of pockets etc. should be furnished.	Vendor to inform			
2.3.21	Size of T - slots, their position and accuracy. Drawing of Table showing details of the T - slots etc. should be submitted.	Vendor to submit			


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2.3.22	Two perpendicular accurate Slots should be provided at the Center of the table to use for alignment purposes. Sizes (Width & Depth), accuracy etc. of these slots should be furnished along with a Drawing.	Vendor to confirm			
2.3.23	Table Loading Diagram should be submitted (Load v / s Distance from Table Center) for uniform as well as for eccentric loading. The Table should be suitable for loading of component (<i>like LP Inner Casing and IP Outer Casing-refer attached sketch/drawing Annexure-1</i>) which has eccentric/ non-uniform loading along with requisite clamping elements).	Vendor to note and submit			
2.3.24	Diameter, Depth and Accuracy of Center Bore on Table Top Surface.	Vendor to inform			
2.3.25	Construction of machine rotary table (Table's construction details to be submitted): A) Part of Table Top (face plate) covering upto its hydrostatic bearing should be of single piece construction. B) Table should be of rigid construction to take care of atleast 80 tons of peripheral loading (non-uniformly distributed at 2 to 4 points) within diameter range of 3500-4000mm. Vendor may be required to demonstrate successful capability of this loading at BHEL's works after erection of machine, by loading suitable work piece (to be provided by BHEL).	Vendor to confirm & submit			
2.3.26	Height of machine table top - with ref. to shop floor	Vendor to inform			
2.3.27	Radially and facially machined belt of minimum 10 mm width to measure radial and facial runouts of rotary table should be provided	Vendor to confirm			
2.3.28	Table has provision to index for job setting. Minimum no of Indexing positions should be 360000	Vendor to confirm			
2.4	CROSS RAIL				
2.4.1	Vertical Travel.	Vendor to inform			
2.4.2	Vertical Traverse Rate.	2000mm per min or more			
2.4.3	Crossrail movement : Full CNC Programmable Continuous Axis or Stepped 100mm for synchronised positioning at any position. Details to be informed.	Vendor to offer			
2.4.4	Maximum Height of Cross Rail bottom from Table Top	Vendor to inform			
2.4.5	Minimum Height of Cross Rail bottom from Table Top	Vendor to inform			
2.4.6	Movement of Cross Rail: Through NC Program as well as manually by Push Buttons/Keys	Vendor to offer			
2.4.7	Machine Reference Point should be at Ram Reference Point and it should be updated automatically with movement of Cross Rail	Vendor to offer			
2.4.8	Details of crossrail movement/positioning/locking mechanism	Vendor to submit			
2.4.9	Limit Switch/Proximity switch to be provided for feedback of cross rail positioning	Vendor to confirm			
2.5	TOOL HEAD and RAM				


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2.5.1	No. of Columns	2			
2.5.2	No. of Ram	1			
2.5.3	Cross - Section of Ram (400mm*400mm) or more	Vendor to inform			
2.5.4	Ram & its supporting/guiding mechanism should be rigid enough for troublefree machining (turning & grooving) with maximum projection of ram. Provisions incorporated for the same are to be informed.	Vendor to confirm & inform			
2.5.5	Provision for Thread Cutting (Maximum pitch limitation, if any)	Vendor to inform			
2.5.6	Clamping / Mounting Mechanism of Turning Tool Holders/Attachments on ram.	Vendor to submit			
2.5.7	Clamping Force Available for clamping of Turning Tool Holders/Attachments.	Vendor to inform			
2.5.8	Mounting of Turning Tool Holders and Attachments should be automatic through Program as well as manually through push buttons.	Vendor to confirm			
2.5.9	Max. weight of attachment/toolholder that can be accommodated in the RAM	Vendor to inform			
2.6	MAIN TRAVERSES				
2.6.1	Vertical Travel of Ram (Z-Axis)	3000mm or more			
2.6.2	Horizontal Travel of Ram (+ve X-Axis)	Vendor to inform			
2.6.3	Horizontal Travel of Ram beyond Center of the Table (-ve X-Axis) : Minimum 300mm	Vendor to inform			
2.6.4	Maximum Distance between Table Top and Standard Turning Tool Holder with Tool.	Vendor to inform			
2.6.5	Minimum Distance between Table Top and Standard Turning Tool Holder with Tool with Full RAM extension	Vendor to inform			
2.7	MACHINE GUIDEWAYS				
2.7.1	All Linear machining Axis traverse shall necessarily be with Hydrostatic Guide ways. Details of system to be submitted with offer	Vendor to inform			
2.7.1	Width of Cross Rail guideways	Vendor to inform			
2.7.2	Width of column guideways	Vendor to inform			
2.7.3	X & Z guide ways should be hydrostatic (Details should be submitted)	Vendor to confirm			
2.7.4	Hardness of guideways	Vendor to inform			
2.7.5	Metallic Telescopic Covers: Waterproof Telescopic Covers of rust resistant steel should be provided with pads/wipers on both left and right sides of tool head on the crossrail and also above & below the crossrail on both columns covering the guide ways. Joints of telescopic covers should be sealed to avoid seepage of coolant on the guideways. Bellow type Covers to be provided under the Metallic Telescopic Covers. The movement of telescopic covers should be troublefree and requiring minimum maintenance.	Vendor to offer			
2.8	FEEDS AND DRIVE SYSTEM				
2.8.1	Cutting feed in X & Z Axes (Infinitely Variable)	0 - 10000mm/min			

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2.8.2	Rapid feed in X & Z Axes	0 - 1000mm/min			
2.8.3	Feed drives/motors X & Z axes [AC servo motors] of Siemens or Fanuc digital type (detail of model, make, type, rating etc. should be submitted)	Vendor to offer			
2.8.4	Maximum cutting force permissible on Ram & at what extension	Vendor to inform			
2.8.5	Maximum permissible Cutting Force at Maximum Ram extension	Vendor to inform			
2.8.6	Permissible Cutting Force v / s Ram Projection - Diagram should be submitted.	Vendor to submit			
2.8.7	Feed back system for X & Z axes should be Distance coded Sealed linear scale Heidenhain with pressurised compressed air cleaning (Details should be submitted)	Vendor to offer			
2.8.8	Backlash free re-circulating ball screw with Pre-loaded double nut for Table Linear axis X & Z (if applicable). (Complete description of the same including diameter of Ball Screw, to be submitted with the offer)	Vendor to submit			
2.8.9	Mechanism for locking X & Z axis(Brake or Clamp independently)	Vendor to inform			
2.9	CONSTRUCTION				
2.9.1	Vendor to furnish details of material, hardness & constructional details, including explanatory drawings of various components/ assemblies like Column, Cross Rail, Ram head, Table, Guideways/slides, Feed Transmission system, Ram, Hydraulic and Lubrication system. Feedback system etc. of the machine.	Vendor to submit			
2.9.2	Video images on CD including hard copy explaining the technical features / Literature with photographs, drawings explaining the technical features should be enclosed with the offer.	Vendor to submit			
2.9.3	Ram shall have Hydraulically/Electronically operated balancing system. Its details shall be submitted with the offer with sketches.	Vendor to confirm & submit details			
2.10	OPERATOR'S PLATFORM				
2.10.1	It should be independent motorised type with brake, movable / adjustable in vertical and horizontal directions. It should be able to reach almost to center of the Table in horizontal direction. Interlocks should be provided for its horizontal / vertical movement against rotating Table and against the job (rotating or stationary) to avoid collision / accident. Suitable ladder is to be provided with the column of platform. Vertical movement of platform should be controlled by drive (Variable Frequency Drive).	Vendor to offer			
2.10.2	Horizontal movement of complete Platform.	Vendor to inform			
2.10.3	Vertical movement of complete Platform to cover total turning height.	Vendor to inform			
2.10.4	Height of Platform Railing.	Vendor to inform			
2.10.5	Weight capacity of Platform (Suitable for at least 3 people)	Vendor to confirm			
2.10.6	Minimum Position of Platform from Shop Floor.	Vendor to inform			
2.10.7	Power Socket of 220V/15 Amp/5 Amp is to be provided on Platform	Vendor to confirm			


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2.10.8	One wall mounted fan is to be provided on the operator's Platform at convenient location.	Vendor to confirm			
2.10.9	Operators platform to be equipped with Safety Glass Window for viewing machining area along with safety enclosures. The Glass window should be equipped with vertical up/down motion for clear machining view.	Vendor to confirm			
2.11	OPERATION AND CONTROL SYSTEM				
	OPERATOR'S PANEL :				
2.11.1	Swiveling type operator's panel having complete CNC and machine control system with all displays of required configuration shall be provided and suitably located on operator's platform for convenient, efficient & safe operation of the machine. All switches, keys & display should be within reach of operator of average height (5' 5") for easy & safe operation. All displays/indications should also be conveniently placed accordingly. A protection cover made of steel sheet or equivalent should be provided above the operator's panel. This Panel should have handles for rotating by hand. The rear door should be on hinges with lock and not screw mounted. One 220 VAC/ 5 Amp 3-pin service socket and switch to be provided on the operator panel. No electronics component should be mounted on the Operator panel door. Proper cooling facility should be provided for the operator panel. Note:Hanging Type Operator panel is not acceptable.	Vendor to offer			
2.11.2	OPERATOR'S PANEL FEATURES: The Operator Control panel should have the following operational KEYS features on the MCP along with other features as specified by the vendor :				
2.11.2.1	Axes selection keys (Separate for each axis.)	Vendor to confirm			
2.11.2.2	Directional keys + & - for axis movement in jog (Separate for each axis)	Vendor to confirm			
2.11.2.3	Rapid traverse key	Vendor to confirm			
2.11.2.4	Emergency stop	Vendor to confirm			
2.11.2.5	Reset key	Vendor to confirm			
2.11.2.6	Single block switch	Vendor to confirm			
2.11.2.7	Dry run switch.(Dry run freely executable during program run in automatic)	Vendor to confirm			
2.11.2.8	Coolant ON / OFF switch/key with regulator to control the flow (Coolant should be switch on/off during Auto/Jog mode irrespective of the definition in the part program)	Vendor to confirm			
2.11.2.9	Pushbutton / key for activating "Delete distance to go"	Vendor to confirm			
2.11.2.10	Chip conveyor forward / reverse push button	Vendor to confirm			
2.11.2.11	Mode selector switch	Vendor to confirm			
2.11.2.12	Feed override switch	Vendor to confirm			
2.11.2.13	Spindle override switch	Vendor to confirm			
2.11.2.14	Machine illumination switch	Vendor to confirm			
2.11.2.15	Push button/Key for Axis Reference	Vendor to confirm			

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2.11.2.16	Push button/Key for loading/unloading of tools	Vendor to confirm			
2.11.2.17	Push button/Key for activating tool definition when the tools are loaded manually	Vendor to confirm			
2.11.3	CNC SYSTEM & FEATURES				
2.11.3.1	Make: Siemens or Fanuc	Siemens or Fanuc			
2.11.3.2	Type	PC based latest version			
2.11.3.3	Model (Latest version, as available at the time of ordering, should be supplied).	Vendor to inform and submit details			
2.11.3.4	Details of optional features, recommended by vendor.	Vendor to inform			
2.11.3.5	<p>(a) The CNC system should have full alphanumeric keyboard, TFT/LED colour display 15" or more, network ready with LAN, RS232C port, electronic hand wheels for all axes, USB Port with minimum 1 GB Pen drive for data input/output to/from CNC system in CNC mode, additional qwerty keyboard & optical mouse etc. and preinstalled licensed software & ready to use offered features for CNC system (as mentioned at SI.Nos. from 2.11.3.8 to 2.11.3.44 of tender specifications). In case of non-availability of RS232-C etc. (if not provided by CNC system manufacturer at the time of supply), suitable separate ports for networking with LAN, data input/output, tele diagnostics & USB/ETHERNET ports shall be provided. In case, only USB ports (separate port for each function) are provided, suitable hardware/connectors shall be provided to ensure above functionalities. (Linear scale and Scanning head for position feedback). Option for display, edit, upload, download PLC program through operator panel). Display of NC & PLC Alarms with remedial solution. Power back-up of 30 min for CNC control for Automatic unattended shutdown in the case of power failure or if machine switches OFF. This offered CNC system should be OPC UA compliant with valid license. Licensed MT Linki Software needs to be provided in case of Fanuc Controller is offered. The system should have feature to store machine related data to BHEL server. If any additional Software is required to capture data from CNC System, it should be provided with valid license.</p>				



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	(b) Option for display, monitoring and edit of PLC program should be through soft key on HMI. Upload and download of PLC program through operator panel and display of NC & PLC Alarms/messages and their help on operator panel HMI. Necessary options and hardware should be included in the offer. Bidder should consider to provide functionality for monitoring of PLC program in online mode with parallel capability to operate machine simultaneously in JOG, MDI & AUTO. Please Note: If there is limitation in showing the PLC program on HMI as mentioned above, Bidder should consider to provide an additional HMI (installed on machine) for display & monitoring of PLC program in online mode with parallel capability to operate machine simultaneously.				
	(c) Laser calibration of all axes, generation and feeding of bi-directional compensation data for measuring system, pitch error and backlash to achieve best possible results from a reputed agency having valid calibration certificate for instruments.				
	(d) Alarms and message should be displayed on CNC along with full remedial description through help guide loaded for system and user defined alarms & messages. PLC alarms & messages should include the device number and/or the operand.	Vendor to offer and confirm			
2.11.3.6	Replaceable SSD Hard disk 10GB, 3GB for User Data or higher as the case may be at the time of ordering	Vendor to confirm			
2.11.3.7	Standard interfaces	Vendor to confirm			
2.11.3.8	Display of PLC ladder along with online status in realtime on Operator Panel, display of alarm and messages with their remedial action and Display of servo-waveforms on Operator Panel. The Input and output module should have LED indications for each digital I/O.	Vendor to confirm			
2.11.3.9	Access locks on the operator panel	Vendor to confirm			
2.11.3.10	Coordinate System Rotation	Vendor to confirm			
2.11.3.11	Coordinate System Transformation	Vendor to confirm			
2.11.3.12	Look Ahead of atleast 70 blocks	Vendor to confirm			
2.11.3.13	Helical & cylindrical Interpolation	Vendor to confirm			
2.11.3.14	Scaling	Vendor to confirm			
2.11.3.15	Programmable mirror image machining	Vendor to confirm			
2.11.3.16	On screen graphic simulation. (Offline graphic simulation-fast simulation of tool movements without requirement of locking machine axes/independent of machine movements)	Vendor to confirm			
2.11.3.17	Both (X&Z) simultaneous machining capability	Vendor to confirm			
2.11.3.18	Foreground/Background editing	Vendor to confirm			

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2.11.3.19	Process oriented Canned Cycles for Drilling operation.	Vendor to confirm			
2.11.3.20	Rigid Tapping	Vendor to confirm			
2.11.3.21	Tool Management system	Vendor to confirm			
2.11.3.22	Block search without calculations as well as with calculation in automatic mode	Vendor to confirm			
2.11.3.23	Facility to store at least 20 zero offsets	Vendor to confirm			
2.11.3.24	Absolute/incremental programming	Vendor to confirm			
2.11.3.25	Decimal point programming	Vendor to confirm			
2.11.3.26	Linear & circular interpolation	Vendor to confirm			
2.11.3.27	Programmable dwell	Vendor to confirm			
2.11.3.28	Storage of user defined subroutine independent of the main program	Vendor to confirm			
2.11.3.29	Variable parametric programming with mathematical functions including trigonometric & logic functions	Vendor to confirm			
2.11.3.30	Arc-programming with radius & end-point	Vendor to confirm			
2.11.3.31	Subroutine nesting up to 3 levels	Vendor to confirm			
2.11.3.32	Programmable skip	Vendor to confirm			
2.11.3.33	Facility of inclusion of message in the part program	Vendor to confirm			
2.11.3.34	Corner rounding & chamfering feature	Vendor to confirm			
2.11.3.35	Programming with polar coordinates	Vendor to confirm			
2.11.3.36	Cutter radius compensation	Vendor to confirm			
2.11.3.37	All standard features of CNC System should be listed as well as item wise price of all available optional features of CNC system must also be quoted	Vendor to confirm			
2.11.3.38	Details of Standard features. List to be submitted.	Vendor to submit			
2.11.3.39	Features of CNC System required for identified jobs or foreseen by the vendor as required.	Vendor to submit			
2.11.3.40	Optional features	Vendor to submit			
2.11.3.41	Provision for automatic safe shut down of CNC System in case of Power Failure. Provision of Loading of PLC Programme on hard disk. Provision of ON screen PLC ladder display including editing and servo wave forms display on the CNC System.	Vendor to offer			
2.11.3.42	All the necessary backups of supplied CNC system, Servo & spindle Drives, PLC program, PCMCIA card backup should be provided in a separate SSD.	Vendor to offer			
2.11.3.43	Supplied PLC modules should have LED indication for all the field elements viz. Input & output.	Vendor to confirm			
2.11.3.44	Customized OEM screen should be available for switchover from direct feedback system to indirect feedback system for all the feed axes & table.	Vendor to offer			
2.11.4	HAND HELD UNIT:				



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2.11.4.1	Vendor to offer Hand held unit with display of CNC system manufacturer along with sufficient length of interfacing cable. The length of the cable should be (minimum 5 meter) sufficient to cover the entire working area of table/bed even when machine control panel is at the end of stroke. The cable should be straight one rather than coiled.	Vendor to offer			
2.11.5	MANUAL CONTROL				
2.11.5.1	Complete manual control of machine with required switches / keys should be provided on operator's panel for selection of required axis, axis direction, cutting feed, table rpm, cutting feed on/off, display of axis position values etc, for manual machining operations without using CNC program./ CNC option MANUAL TURN (of Siemens control or equivalent from Fanuc control) / MDI mode. Diagram / Sketches for switches / keys provided on operators pendant should be submitted.	Vendor to offer			
2.12	UPS FOR CNC SYSTEM				
2.12.1	UPS/Capacitor power module for retract function unit (similar to Siemens UPS module/feature SITOP) with rechargeable battery of sufficient time and having provision for unattended automatic shutdown feature for Windows operating system & also to suit feature for automatic retraction of tool during threading in case of power failure or Table/Feed stoppage due to any alarm generation to avoid damage to job/tool.	Vendor to offer			
2.13	MACHINE LIGHTS				
2.13.1	LED Machine Lights for sufficient illumination of complete working area on the table, on the ram housing to view tool inside long casing type jobs and also on/near to operator's panel & area below crossrail should be provided for clear visibility.	Vendor to offer			
2.13.2	A magnetic base portable spot light with sufficiently long cable should also be provided.	Vendor to offer			
2.13.3	Lights required in the foundation/ pit area shall also be foreseen and supplied by the vendor.	Vendor to offer			
2.13.4	All light fittings, consumables, adapters/receptacles should have compatibility with Indian equivalents	Vendor to offer			
2.13.5	Flashing/Rotary type light indicating end of cutting, program stop, alarm etc. at a easily visible & suitable place.	Vendor to offer			
2.13.6	The control cabinets (Electrical & Operator panel) shall be provided with sufficient illumination and a 220 V/5A & 15A socket to be provided in control cabinets.	Vendor to confirm			
2.13.7	Sufficient illumination of working area to be provided. Consumables should be available in India.	Vendor to confirm			
2.14	AIR CONDITIONERS				

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2.14.1	Cabinet/ Panel Air Conditioners of suitable/ sufficient capacity with proper drainage pipes for condensate, are to be provided for different control electrical, electronics panels/cabinets including operators panels considering specified outer ambient conditions and inside ambient condition of panel/cabinet. Detailed of specifications of the same are to be submitted. The air conditioners are not to be mounted on top & doors of the panels. Only Eco-friendly refrigerants are to be used in Air Conditioners. (User manual to be provided with each Air Conditioners Unit)	Vendor to confirm			
2.14.2	In case of order, vendor shall confirm to provide following information about air conditioners and chiller units used in the machine : Type of refrigerant, medium to be cooled, capacity of chiller unit, type of compressor with complete specifications, type of thermostatic expansion valve, specification details of condenser fan , specification of the evaporator unit (plate type/ coil type), details of liquid (oil/water) circulatory pump (if any), name of refrigerant used, details of Digital Temperature Controller used in the chiller unit. Only Eco-friendly refrigerants are to be used in chiller units. (User manual to be provided with each Chiller Unit)	Vendor to confirm			
2.15	HYDRAULIC & HYDROSTATIC SYSTEM (Details should be Submitted by the Vendor)	Vendor to submit.			
2.15.1	The Hydraulic System shall be of Re-circulating Type. Hydraulic Tank should be preferably placed at shop floor.	Vendor to offer and confirm			
2.15.2	Pumps, Valves, Switches (Pressure & Flow) should be of Make : Rexroth / Parker / Hawe/ Vickers / Hydac/ Yuken/ IFM.	Vendor to offer and confirm			
2.15.3	Filtration System: Sufficient no. of filters (with electronic clogging indicator and alarm on PLC) should be used to avoid frequent clogging of the filters and other maintenance related problems. Filter elements should, preferably, be of Make :EPE / Hydac/MP Filtry/Mahle/Sofima.	Vendor to offer and confirm			
2.15.4	Failure indication	Vendor to offer			
2.15.5	Automatic shut off provision, Details should be submitted.	Vendor to offer			
2.15.6	Refrigerated type cooling and electric heating (Electric heating, only if required) system of sufficient capacity to maintain complete Hydraulic System, including lubrication oil, hydrostatic oil and gearbox oil, etc. Keeping in view the specified ambient conditions to be offered with complete details. The temperature of Hydraulic Oil should not go beyond 40 deg. C.	Vendor to offer & submit			
2.15.7	Hydraulic & Hydrostatic pump capacity (flow / pressure)	Vendor to inform			
2.15.8	Each pump should have an independent motor. Tandem pumps should not be used	Vendor to confirm & offer			

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2.15.9	Hydraulic, Pneumatic & oil piping's should be preferably metallic except places where flexible piping's are essential. All the pipes required for the same shall be included in the standard scope of the machine.	Vendor to confirm			
2.15.10	Supplier may recommend three alternative sources for all types of hydraulic & HYDROSTATIC & lubricating oil.	Vendor to inform			
2.15.11	Hydraulic, Pneumatic & oil piping's should be preferably metallic except places where flexible piping's are essential. All the pipes required for the same shall be included in the standard scope of the machine.	Vendor to confirm			
2.16	FIRST FILLING OF OILS				
2.16.1	First filling of all required Oils & Grease etc. for the machine, voltage stabilizer, isolation transformer & air-compressor including coolant for test piece & proveout machining etc.to be supplied by vendor. Indigenous (Indian) source or Indian equivalent and specifications of oils/ greases are also to be provided by the vendor.	Vendor to offer & submit			
2.17	COOLANT SYSTEM				
2.17.1	Coolant System with all accessories for following variants shall be provided. Selection of all the variants shall be through program and push buttons provided on the Operator's panel as well.	Vendor to confirm			
2.17.2	Recirculating Type Flood Coolant System with nozzles around Turning Holders & Boring Bars.	Vendor to confirm			
2.17.3	Mist coolant system	Vendor to confirm			
2.17.4	Air coolant system	Vendor to confirm			
2.17.5	High Pressure Internal Coolant through Turning Holders & Boring Bars	Vendor to confirm			
2.17.6	All attachments, tool holders, boring bars, cassettes, adapters etc. shall have the provision of internal coolant so that coolant is available directly at the tool-cutting tip.	Vendor to confirm			
2.17.7	Coolant collection and recirculation system should be leak-proof & perfect to avoid any spillage on shop floor, trenches for cables & foundation pit of the machine etc.	Vendor to confirm			
2.17.8	Coolant Filtration System: Recirculating type coolant system with centrifugal Hydrocyclone System/ Vacuum Rotary drum type System/ Cartridge Type Filtration System and magnetic separator.	Vendor to inform & submit details			
2.17.9	Coolant Flow Diagram showing filters, pumps, valves, tanks etc. to be submitted with the offer.	Vendor to submit details			
2.17.10	Pressure & rate of flow of coolant for different variants should be furnished in the offer. The Pressure should be sufficient for the coolant to reach the tool tip at full pressure.	50 bar or more			
2.17.11	The coolant tank capacity shall also be intimated. Coolant tank capacity, discharge rate & pressure of coolant should be sufficient enough to meet the machining requirement.	Vendor to confirm & submit details			

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2.17.12	In addition to M codes and push buttons provided on the operator's panel for activation & deactivation of coolant supply, additional rotary switch shall also be provided on the operator's panel for finer control of coolant flow rate and its pressure after its activation through M codes/ Push button.	Vendor to confirm			
2.17.13	Coolant pump & motor details for all variants of coolant system are to be submitted with the offer.	Vendor to submit details			
2.17.14	The coolant tank should be fitted with skimmer for regular cleaning of coolant from contamination with tramp oil.	Vendor to confirm			
2.17.15	If any PLC system is used for the operation of coolant system, the same should be included in spare and licensed software and cables to be provided to connect with the PLC through portable programming device/laptop.	Vendor to confirm			
2.17.16	Vendor to offer one spare coolant gun	Vendor to confirm			
2.18	REQUIREMENT FOR ELECTRICAL EQUIPMENT				
2.18.1	415V (fluctuation $\pm 10\%$), 50HZ (fluctuation $\pm 3\%$), 3 Phase AC (3 wire system with out neutral) Power Supply Voltage will be provided by BHEL at a single point near the machine, as per layout recommended by Vendor. All types of switches, cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the machine/control cabinets including Voltage Stabilizer, Isolation Transformer & Air Compressor etc. , shall be supplied by the vendor & shall be the responsibility of vendor. Requirement of grounding/earthing with required material details is to be informed by vendor well in advance so that same could be incorporated during construction of foundation.	Vendor to accept & offer			
2.18.2	Tropicalisation: All electrical / electronic equipment shall be tropicalized.	Vendor to offer			
2.18.3	All electrical & electronic control cabinets & panels should be dust and vermin proof.	Vendor to offer			
2.18.4	All electrical components in the cabinets should be mounted on DIN Rail.	Vendor to offer			
2.18.5	All electrical / electronic panels to be provided with adequate door locks. All electrical & electronic panels including operator's panel should have sufficient illumination and power receptacles/plug points of 220Volts, 5/15 Amp AC with on/off switch. All electrical adapters/receptacles, fittings, consumables etc. should be Indian or should have compatibility with Indian equivalents.	Vendor to offer			
2.18.6	All motors shall conform to IEC or Indian Standards	Vendor to offer			
2.18.7	All cables moving with traversing axes should be installed in caterpillar / metallic Drag chain. Additionally, all the cable trays required for laying of cables should be included in the offer.	Vendor to offer			
2.18.8	Vendor should ensure the proper earthing for the machine and its peripherals/accessories. Any material requirement for the same should be informed with foundation design/drawings. The vendor can take earthing connection from the nearest column of the production shop.	Vendor to offer			

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2.18.9	In-cycle hour counter with reset facility is to be included in the offer.	Vendor to confirm			
2.19	SAFETY ARRANGEMENTS Following safety features in addition to other standard safety features should be provided on the machine:	Vendor to offer			
2.19.1	Machine should have adequate and reliable safety interlocks / devices to avoid damage to the machine, work piece and the operator due to the malfunctioning or mistakes. Machine functions should be continuously monitored and alarm / warning indications through lights/ alarm number with messages (on CNC display and panels) should be available.	Vendor to offer			
2.19.2	A detailed list of all alarms / indications provided on machine should be submitted by the supplier.	Vendor to submit			
2.19.3	All the pipes, cables etc. on the machine should be well supported and protected. These should not create any hindrance to machine operator's movement for effective use of machine.	As offered & agreed			
2.19.4	All the rotating parts used on machine should be statically & dynamically balanced to avoid undue vibrations & noise.	As offered & agreed			
2.19.5	Emergency Switches at suitable locations as per International Norms should be provided.	As offered & agreed			
2.19.6	Oil & water pipe lines should not run with electrical cable in the same trench.	As offered & agreed			
2.20	ENVIRONMENTAL PERFORMANCE OF THE MACHINE : The Machine should conform to following factors related to environment :	Vendor to offer			
2.20.1	Maximum noise level shall be 85 dB(A) 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, if required. Supplier to demonstrate compliance to noise level, if so required.	Vendor to confirm			
2.20.2	There shall not be any emissions from the machine except fumes of cutting fluid during machining.	Vendor to confirm			
2.20.3	There should not be any effluent from the machine. In case there are any effluents from the machine, requisite effluent treatment plant or pollution control device should be built into the machine by the supplier.	Vendor to confirm			
2.20.4	No hazardous chemicals shall be required to be used in the machine.	Vendor to confirm			
2.20.5	If any safety / environmental protection enclosure is required it should be built by the vendor.	Vendor to confirm			
2.20.6	Paint of the machine should be oil / coolant resistant and should not get peeled off and mixed up with coolant.	Vendor to confirm			


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3.0	CHIP CONVEYOR				
3.1	An elevating type chip conveyor to carry both short and curly chips efficiently and effectively to the chip bin on shop floor (on either side of the machine) should be provided at appropriate location. Metallic chutes should be provided all around the table for smooth collection of chips upto opening of chip conveyor.	Vendor to offer			
3.2	Type of chip conveyor	Hinged type or superior			
3.3	Width of conveyor	Vendor to inform			
3.4	Elevation of chip conveyor for chip bin	Vendor to inform			
3.5	Material of chip conveyor (should be rust resistant)	Vendor to inform			
3.6	Provision for smooth collection of chips from all-around table to the conveyor and for avoiding clogging of chips should be provided. Removable Grill/Mesh type rigid covers should be provided above some portion of the chip conveyor, to enable machine operator's access to chip conveyor from shop floor for disposal of scattered chips on shop floor, if any, through chip conveyor. Details for the same should be submitted by vendor.	Vendor to offer			
3.7	Operation of chip conveyor (forward & reverse) should be possible through push buttons on operator's panel and also near chips disposal point/chip bin on the chip conveyor.	Vendor to offer			
3.8	Layout showing location of chip conveyor should be submitted.	Vendor to submit			
3.9	CHIP BINS (two nos.) of appropriate size, with wheels, lifting hooks & handle for movement.	Vendor to offer			
4.0	SERVO VOLTAGE STABILIZER				
4.1	Power Supply will be provided by BHEL at a single point near the machine, 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 machine, Voltage Stabilizer, Isolation Transformer, control cabinets etc. shall be supplied by the vendor. A suitable servo-controlled voltage stabilizer of Indian Make and of appropriate rating shall be supplied and connected to the machine by the vendor. The Oil / Air Cooled Servo Controlled Voltage Stabilizer (of reputed Indian make) should be suitable for the complete machine, its drives, controls, PLC etc. for unbalanced load & supply conditions considering specified power supply & ambient conditions. Catalogue of the same shall be submitted along with the offer.	Vendor to confirm along with make ,model and technical details			



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4.2	The offer should be submitted with spares package (Variacs-2 nos., Correcting servomotors- 2 nos., Control cards-2 no's, Main switch-1 no, push buttons-5 nos. each type) required for long term maintenance of this stabilizer. If any PLC system is used against sr. no. 4.1, the same should be included in spare and licensed software and cables to be provided to connect with the PLC through portable programming device/laptop.	Vendor to offer			
4.3	Make	NEEL, Aplab or Auto Electric or equivalent			
4.4	Rating & Input/output Voltage etc.	Vendor to specify			
4.5	Monitoring device with cut-off facility for under/over output voltage, Devices for load current measurement, MCCB at input for overload/short circuit protection. (Details to be submitted)	Vendor to specify with technical details.			
4.6	Catalogue of the SERVO VOLTAGE STABILIZER shall be submitted with the offer.	Vendor to submit			
5.0	ULTRA ISOLATION TRANSFORMER				
5.1	Indian make Ultra Isolation Transformer suitable for complete machine , its drives, controls, PLC etc. shall be supplied for unbalanced load & supply conditions considering specified power supply & ambient conditions.	Vendor to offer			
5.2	Make : NEEL, Aplab or Auto Electric or equivalent	Vendor to specify			
5.3	Rating	Vendor to specify			
5.4	Spares Package for the Ultra Isolation Transformer for 2 years working should also be offered.	Vendor to offer			
5.5	Catalogue of the Ultra Isolation Transformer shall be submitted with the offer.	Vendor to submit			
6.0	PNEUMATIC SYSTEM:				
6.1	AIR COMPRESSOR:				
6.1.1	Independent Screw Air Compressor (of reputed make Elgi, Chicago Pneumatic or Ingersoll Rand) with refrigerated type Dryer & Filter of suitable capacity for the total compressed air requirements of the machine & accessories and to suit required air quality should be supplied. The system should be so designed to have additional provision and required accessories before Refrigerated type Air Dryer so that BHEL compressed air supply having pressure 13-15 Kg/sq.cm with high moisture could be used as and when required. The compressor unit should be suitable for continuous duty operation.	Vendor to offer with details.			
6.1.2	Make & Model of Air Compressor and Refrigerator type Dryer.	Vendor to specify			
6.1.3	Capacity (Flow, Pressure & KW)	Vendor to specify			
6.1.4	Spares Package for the compressor for 2 years trouble free working should also be offered. List to be submitted.	Vendor to offer and submit			

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6.1.5	The spares package must include all type of filters and separators(5 no. each type), Temperature probe, Belt, air intake valve, RTD, Thermal valve and Oil (30 litres).	Vendor to offer and submit			
6.1.6	If supplied air compressor is equipped with any PLC device, the same should be included in spare and licensed software and cables to be provided to connect with the PLC through portable programming device/laptop.	Vendor to specify			
6.2	COMPRESSED AIR POINTS:				
6.2.1	Compressed Air Point with manual ON/ OFF Valve and flexible pipe of suitable length for work piece cleaning.	Vendor to confirm			
6.2.2	Programmable Compressed air point in the tool holders and attachments to be used as coolant for cutting tools.	Vendor to confirm			
6.2.3	Vendor to offer one spare air gun	Vendor to confirm			
7.0	DIAGNOSTIC SYSTEMS				
7.1	TELE-DIAGNOSTIC SERVICE				
7.1.1	Tele-diagnostic service should be provided through Internet or ISDN along with required Hardware / Software package for the supplied CNC system for remote diagnosis and correction of the problems in both CNC System and PLC of the machine. This should be provided free of charge for the guarantee period. Help guide should be provided for use of the system/service. Terms and conditions for the service after guarantee period should be informed by vendor.	Vendor to offer			
7.2	FAULT DIAGNOSTIC SYSTEM :				
7.2.1	Supplier's own diagnostic system with required Software and Hardware installed on the CNC system, which shows detailed cause and remedy for the fault on the CNC system display with diagnostics (including images/Electrical circuit drawing) indicating the element /device name causing the fault.	Vendor to offer & submit			



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7.2.2	Vendor to offer a Programming device with at least Intel Core i7 13th Gen or higher processor, base speed 2.5GHz or more, 32GB DDR5 (2X16GB) RAM, 1TB SSD, 15" Full HD display, Windows 11 Pro 64-bit, and an NVIDIA RTX 2000 Ada 8GB Graphics Card. The supplied programming device/laptop should be loaded with all the licensed software required to connect with any supplied PLC, HMI, Servo drives and CNC for diagnostic, commissioning (if need to be replaced in future) and maintenance purpose (along with software installation file in a Hardisk/CD). All necessary cables for commissioning and maintenance of supplied PLC, HMI, Servo drives and CNC for diagnostic, purpose deemed necessary by BHEL. The supplied programming device/laptop should be loaded with complete Electrical Schemes, Mechanical Assembly drawings, Hydraulic Circuit Diagrams, Operation and Maintenance Manuals, Special procedures required for restoration and operation of ATC/Attachments. Machine Alarm list along with Help text wiring diagram, On-Line display of PLC user should be available on this device.	Vendor to offer & submit			
7.2.3	Provision of OEM Screen with soft keys enabling the service personnel to bring back the tool carriers of the ATC to its initial/nearest position in case of interruption of tool carrier's positioning cycle due to alarm on the machine or power failure. With this OEM screen, service personnel should be able to perform individual steps of Tool carriers positioning cycle manually. Separate Hand Held Pendant should also be provided to retrieve the tool carrier to its initial position.	Vendor to offer			
7.2.4	Machine should have provision to switchover from position feedback system -2 (direct) to Position feed back system-1 (Motor encoder) through password protected customised screen on operator panel as well as through PLC program (for service personnel only).	Vendor to offer			
7.2.5	Vendor shall provide all tool and tackles required for regular maintenance like Clamp meter, Multimeter, Socket Set, Infrared Laser temperature gun and maintenance tool kit etc	Vendor to offer			
7.2.6	Help guide should be provided to use above two diagnostic systems shall be provided.	Vendor to confirm			
8.0	LEVELING & ANCHORING SYSTEM				
8.1	Complete set of anchoring materials including foundation bolts, nuts, washers, fixators, leveling shoes etc for alignment of table, columns etc. and to fix the machine to the foundation should be supplied.	Vendor to offer			
9.0	TOOLS FOR ERECTION, OPERATION & MAINTENANCE				
9.1	Special tools and equipment required for erection of the machine shall be brought by the vendor. Necessary tools like Torque Wrench, Spanners, Keys, grease guns, and any other special purpose tool etc. for operation and maintenance of the machine should be supplied. List of such tools should be submitted with offer.	Vendor to confirm & submit details			

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9.2	Special Tools/fixtures required to check & align the accuracy of machine shall be supplied.	Vendor to confirm			
9.3	Test mandrel for checking table run-out & alignment shall be supplied	Vendor to confirm			
10.0	AUTOMATIC TOOL CHANGER (ATC)	Vendor to offer			
10.1	Type	Vendor to inform			
10.2	No. of storage locations (to suit all the tool holders and boring bars offered at Sl.no. 12.0) All tool holders/boring bars (Sl.No. 12.0) shall be mounted on ATC and shall be clamped in ram through CNC program for automatic ATC cycle. In case, any other type of tool holders is foreseen by vendor for proveout component machining (Sl.No.21.0), same should also be mounted on ATC.	Vendor to inform			
10.3	Tool selection method - Random	Vendor to confirm			
10.4	Maximum Tool Overhang out of different Holders in both directions i.e. radial & axial.	Vendor to inform			
10.5	Maximum Permissible Weight on each Pocket.	Vendor to inform			
10.6	Maximum Permissible Weight on Complete ATC.	Vendor to inform			
10.7	The Machine operation should be possible with or without referencing ATC.	Vendor to confirm			
10.8	ATC Drawing (preliminary) should be submitted with the offer.	Vendor to submit			
10.9	Provision for loading/unloading of different holders on ATC using (BHEL's) overhead crane, if required.	Vendor to offer			
10.10	The machine should have provision for loading/ unloading manually all Attachments/Heads mentioned at Sl.no 12.0 with push buttons mounted on Auxiliary Hand pendant				
11.0	CHIP & SPLASH GUARD				
11.1	Chip / Splash Guards of sufficient height and made of rust resistant material (painted), shall be provided all around the Table (on front side of columns) to avoid spilling of Coolant and scattering of Chips on Operator's Panel and Shop Floor. Front part of splash guards shall be movable provided with safety glass for clear visibility of job to the operator.	Vendor to offer			
11.2	Additionally a fixed type of splash/ chip guard of atleast full turning height should be provided on rear side of machine i.e. around rear portion of table between columns .	Vendor to offer			
11.3	Movable splash guard should have interlock for table rotation. Opening of guards on front side of table should suit maximum possible size of the job which can be loaded on the table. The guards should not provide any hindrance with complete vertical movement of crossrail/ATC on both sides of the table.	Vendor to confirm			
11.4	Drawing (pre-liminary) of Chip/Splash Guards showing total height, layout and other details of the same should be submitted.	Vendor to submit			

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12.0	STANDARD TOOLINGS/ATTACHMENTS : * Individual package prices against each SI.No. shall be quoted by Vendor.	Vendor to confirm			
12.1	TOOL HOLDERS All tool holders & boring bars shall be available on ATC for direct clamping in ram through ATC cycle. All tool holders & boring bars should have holes for lifting by suitable eye-bolts. Each tool holder/boring bar is to be offered complete with clamping screws, eye-bolt tool), as applicable. Final drawings for offered items shall be submitted by vendor to BHEL after PO, in case of order, for BHEL's approval prior to their manufacturing & supply. Quantity : One no. of each type (SI No 12.1.1 to 12.1.8), complete in all respects. (LH - Left Hand / RH - Right Hand) is to be offered.	Vendor to offer			
12.1.1	Tool holder for external turning having provision for rigid cassette type clamping.	Vendor to offer			
12.1.2	Tool holder for internal turning having provision for rigid cassette type clamping.	Vendor to offer			
12.1.3	Tool holder, having provision for both LH and RH facing using rigid cassette type clamping.	Vendor to offer			
12.1.4	Standard (Conventional) tool holder for 40*40mm tool shank with direct clamping of tools for internal / external turning and LH/RH facing operations with provision for clamping 32*32mm shank tools with packing pieces.	Vendor to offer			
12.1.5	Eccentric Boring Bar dia. 200 boring bar with length. 1200mm with conventional type of tool holding for 40*40mm shank tools and with provision of 32*32mm shank tool both for turning and facing positions.	Vendor to offer			
12.1.6	Centric Boring Bar dia. 250 boring bar with length. 500mm with conventional type of tool holding for 40*40mm shank tools and with provision of 32*32mm shank tool both for turning and facing positions..	Vendor to offer			
12.1.7	General adapter for turning with flange type clamping or equivalent so that special tool holders manufactured by BHEL could be clamped for use in future.	Vendor to offer			
12.1.8	Special Holder with provision to clamp tools having Capto-C8/KM80 type coupling. This holder shall be clamped in tool holder at SI No. 12.1.4 to 12.1.7. Annexure-2 'Special Holder' for reference is enclosed. For ensuring rigidity for trouble free machining, vendor may offer alternate solution for use of tools with Capto-C8/KM80/ equivalent standard coupling (to be agreed with BHEL) on machine.	Vendor to offer			



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12.2	<p>PRESETTABLE CASSETTES (to suite above cassette type holders) are to be offered as per Drg. No. R6300-0965 (for RH Cassette for reference). Each cassette is to be offered complete with clamping screws and packing plate (for clamping of 32x32mm shank tool instead of 40*40mm tool), as applicable. Final drawings for offered items shall be submitted by vendor to BHEL after PO, in case of order, for BHEL's approval prior to their manufacturing & supply.</p> <p>Quantity : Two no. of each type(SI No 12.2.1 to 12.2.4), complete in all respects. (LH - Left Hand / RH - Right Hand)</p>	Vendor to offer			
12.2.1	LH cassette for 40*40mm tool shank, Length approx. 230 mm, with provision for clamping 32*32mm shank tools also with packing pieces.	Vendor to offer			
12.2.2	RH cassette for 40*40mm tool shank, Length approx. 230 mm, with provision for clamping 32*32mm shank tools also with packing pieces.	Vendor to offer			
12.2.3	LH long cassette for 40*40mm tool shank, Length approx. 430 mm, with provision for clamping 32*32mm shank tools also with packing pieces.	Vendor to offer			
12.2.4	RH long cassette for 40*40mm tool shank, Length approx. 430 mm, with provision for clamping 32*32mm shank tools also with packing pieces.	Vendor to offer			
13.0	ACCESSORIES				
13.1	Auto Focus Video Camera System :				
13.1.1	Complete system having Auto Focus Video Camera with zoom facility & its accessories & connections is to be offered. The camera need be mounted inside its enclosure, shall be mounted on the ram or tool holders with internally connected & concealed electrical/Wi-Fi connections. In case, the mounting on tool holders is offered, all tool holders/boring bars should have provision for the same and suitable electrical/Wi-Fi connections. Freely hanging or unsupported/unprotected cables are to be avoided. Color monitor should be suitably located on operator's panel to view tool while machining/setting and also as an aid for setting of casings/long cylindrical jobs using dial indicator. Camera eyes/lens and connecting cables shall be safe guarded against heat, chips, coolant, dust etc. to maintain clear visibility of the tool in these conditions. Suitable sockets for power connections shall be provided for both positions (ram and tool holders). Clamping details of camera on different tool holders shall be shown on drawings of tool holders.	Vendor to offer 2 Qty of Camera's and spares			
13.1.2	A detachable/flexible Auto Focus video camera preferably with a magnetic base with zoom facility shall be provided on the RAM, internally connected with colour Monitor fixed on the Operator's panel to view the tool while machining.	Vendor to offer			

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13.2	JIB CRANE: Jib Crane to suit heaviest holder/attachment (supplied with the machine) shall be offered. This shall be suitably located with all power operated movements (including swivel motion) through push buttons for mounting & dismounting of different tool holders, boring bars and attachments etc. and also for loading and unloading of jaw-boxes/voices whenever required.	Vendor to offer			
13.2.1	Load Capacity of the Jib Crane	Vendor to inform			
13.2.2	Length of Jib Crane arm	Vendor to inform			
13.2.3	Height of Jib Crane Column	Vendor to inform			
13.2.4	Swiveling Range to cover complete area to suit the requirement.	Vendor to inform			
13.2.5	Spare package for Jib Crane, if any. List to be submitted.	Vendor to submit			
13.2.6	Model, make, specifications etc.	Vendor to inform			
13.2.7	Manufacturer's catalogue to be submitted.	Vendor to submit			
13.2.8	Layout showing location of Jib Crane	Vendor to submit			
13.3	MEASURING PROBE SYSTEM				
13.3.1	Vendor to offer two Automatic Job Measuring System, comprising of Spindle mounted Renishaw or equivalent make Wireless system, with measuring cycles, calibration system and all types of probes/styli required for measuring all machined dimensions of proveout components.	Vendor to confirm			
13.3.2	Latest RENISHAW probe	Vendor to confirm			
13.3.3	Holder for probe with taper suitable to the machine	Vendor to confirm			
13.3.4	Probe stylus (2 sets)	Vendor to confirm			
13.3.5	Calibration master including the calibrating programs.The calibration master should be fixed at suitable location so that calibration can be done without setting the master each time.	Vendor to confirm			
13.3.6	Requisite electronic interface	Vendor to confirm			
13.3.7	Receiver module	Vendor to confirm			
13.3.8	Service Kit	Vendor to confirm			
13.3.9	Spares Package for the Job Measuring system for 2 years trouble free working should also be offered. List to be submitted.	Vendor to confirm			
13.3.10	Format of report produced after measurement to be submitted. Format to be modified as per BHEL requirement if required.	Vendor to submit			
14.0	SPARES :	--			



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Sr. Manager (WEX-CNC)



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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
14.1	Mechanical , Hydraulic & Lubrication System, Electrical and Electronic spares used on the machine are to be recommended and offered by the vendor in sufficient quantity for 2 years trouble free operation of the complete machine including CNC system and its accessories considering three shifts continuous running of the machine. Detailed list is to be submitted. Additionally, spare parts (from 14.1.1 to 14.1.30) of electrical/electronics and CNC system etc. shall be offered (if not included in recommended spares):	Vendor to offer			
14.1.1	CNC Controller/NCU (as used in the machine) module- 1 No.	Vendor to offer			
14.1.2	PLC CPU/PCU, input and output cards- 1 No. each type	Vendor to offer			
14.1.3	Machine Control Panel (MCP)- 1 No.	Vendor to offer			
14.1.4	Limit Switches/ Micro Switches (2 Nos each type)	Vendor to offer			
14.1.5	Relays and fusable relay boards (2 Nos each type)	Vendor to offer			
14.1.6	RTD temperature transmitter (1 No each type)	Vendor to offer			
14.1.7	Proximity Switches (5 Nos each type)	Vendor to offer			
14.1.8	Semiconductor Fuses (5 Nos each type)	Vendor to offer			
14.1.9	Special Fuses/Glass fuses (5 Nos each type)	Vendor to offer			
14.1.10	Main Power Switch (1 No each type)	Vendor to offer			
14.1.11	Secondary Encoders & connecting cables (1 No each type)	Vendor to offer			
14.1.12	Scanning Heads for Linear Scales (1 No each type)	Vendor to offer			
14.1.13	Wave shape unit/ EXE unit (if used)(1 No each type)	Vendor to offer			
14.1.14	Operator's panel with Display Unit (01 No. each type)	Vendor to offer			
14.1.15	Power Module / Servo amplifier & Control Cards for Main Drive as well as Feed Drives (1 Nos each type)	Vendor to offer			
14.1.16	Power cable and encoder cable (01 no. each type)	Vendor to offer			
14.1.17	One each of the following items : CNC Power Supply, Interface Modules, Hand Held Unit, Any other auxiliary drive , if used.	Vendor to offer			
14.1.18	UPS Module for CNC System safe shutdown-1 No.	Vendor to offer			
14.1.19	Line Filter and Line Choke Module-1 No.	Vendor to offer			
14.1.20	Proportional Control Valve Controller 2 Nos. each type (if applicable)	Vendor to offer			
14.1.21	Push Buttons- 5 No. each type	Vendor to offer			
14.1.22	Indicating Lamp- 10 Nos each type	Vendor to offer			
14.1.23	Contactors- 2 Nos. each type	Vendor to offer			
14.1.24	Overloads/ Automats- 1 No. each type	Vendor to offer			
14.1.25	Machine Status Indicating Lamp (Complete unit) - 1 No	Vendor to offer			
14.1.26	Any special purpose / non-standard card - 01 No. each type	Vendor to offer			
14.1.27	Encoders, limit switches, proximity switches, reed switch, optical sensors used in attachments/head/AAC- 1 no. each type	Vendor to offer			



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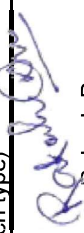



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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
14.1.28	All types of spares for total machine and accessories should be available for at least ten years after supply of the machine. If machine or control is likely to become 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 confirm			
14.1.29	Repair service contract with supplier of CNC system for service & spares for motor drives, CNC Unit and Milling Spindle should also be offered by the vendor.	Vendor to offer			
14.1.30	Vendor to confirm that complete list of spares for machine and accessories, along with specification / type / model, and name & address of the spare supplier shall be furnished along with documentation to be supplied with the machine. Vendor to also confirm that documentation shall include list of all type of parts used along with specifications, type, model, quantity etc.	Vendor to confirm			
14.2	Mechanical , Hydraulic & Lubrication System Spares for 2 years trouble free operation of the complete machine	Vendor to offer			
	Additionally, spare parts (from 14.2.1 to 14.2.30) of Mechanical , Hydraulic & Lubrication System etc. shall be offered (if not included in recommended spares):				
14.2.1	Set of Gears for All the attachments used on the machine- 1 set of each type) if any)	Vendor to offer			
14.2.2	All pumps (one of each type) including Hydrostatic, Hydraulic, lubrication and coolant circuit pumps & oil cooling pumps in the oil chilling units.	Vendor to offer			
14.2.3	All types of valves (2 Nos of each type) including D.C. control valves, Relieve valves, Reducing valves, Check valves, Flow control valves, pneumatic valves, Proportionate valves, pressure regulators, pressure reducer valves used in Hydrostatic, Hydraulic, lubrication, coolant, pneumatic circuit of the machine.	Vendor to offer			
14.2.4	All types of pressure switches, flow switches and float switches, level indicator used in used in Hydrostatic, Hydraulic, lubrication, coolant, pneumatic circuit of the machine. (2 no. each type)	Vendor to offer			
14.2.5	Hoses with crimp fittings used in Hydrostatic, Hydraulic, lubrication, coolant, pneumatic circuit of the machine. - one set of each type.	Vendor to offer			
14.2.6	Set of seals (Piston, Shaft, Cylinder) (2 Nos each type)	Vendor to offer			
14.2.7	Metering valves/progressive lubrication system blocks & seals	Vendor to offer			
14.2.8	All types of regenerative type filter inserts (5 No. of each type)	Vendor to offer			
14.2.9	All types of Disposable type filter inserts (10 nos. of each type)	Vendor to offer			
14.2.10	Set of all type of belts (including timing belts) (1 no. each type)	Vendor to offer			
14.2.11	O-Rings and Piston rings (nos. of each type)	Vendor to offer			

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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
14.2.12	Accumulator with charging kit if the same is used in the M/c (1 no each type). Booster kit is required if charging pressure is more than 80 bar.	Vendor to offer			
14.2.13	All types of pneumatic valves & proportional valves used on machine (1 no. of each type)	Vendor to offer			
14.2.14	All couplings including hydraulic, hydrostatic, lubrication pump couplings, pressure sleeves etc.(2 nos. of each type)	Vendor to offer			
14.2.15	End Bearings for all ball screws, central bearings of rotary table- 1 no. of each type.	Vendor to offer			
14.2.16	5 meter length of Chip Conveyor Chain.	Vendor to offer			
14.2.17	One set each of all spiral bevel gears used on the machine (if any).	Vendor to offer			
14.2.18	All Air Compressor spares to be provided along with the machine. The spares provided should facilitate trouble free operation of the unit for two years.	Vendor to offer			
14.2.19	Vendor shall provide all tool and tackles required for maintenance of the machine like Allen keys, Spanners, Torque Wrench, Special purpose tool etc.	Vendor to offer			
14.2.20	Special Oil/ Grease/ Cooling Agent (if any)- Sufficient qty. for 1 year (operation on 3 shift basis) along with grease Gun.	Vendor to offer			
14.2.21	Recommended Spares for 2 years for ATC as mentioned in sl no. 10.0 .Vendor to provide the list of offered spares.	Vendor to offer			
14.2.22	Recommended Spares for 2 years for all attachments as mentioned in sl no. 12.0. Vendor to provide the list of offered spares.				
14.2.23	Any other recommended spare part essential for 2 years 3 shift trouble free working of machine should also be quoted with item wise price, specification and source of supply.	Vendor to offer			
14.2.24	Air Conditioning Spares for 2 years (on three shift basis; As applicable on machine) of trouble free operation of the all type of Panel Air Conditioners and refrigerant based Chiller Units.	Vendor to agree			
14.2.25	Refrigerant Compressor (1 no. for each type)	Vendor to offer			
14.2.26	Digital Temperature Controller (1 no. for each type)	Vendor to offer			
14.2.27	Condenser Fan (1 no. for each type)	Vendor to offer			
14.2.28	Evaporator Fan for Panel/ Cabinet AC (1 no. for each type)	Vendor to offer			
14.2.29	Pumps used in Chiller Unit (1 no. each type).	Vendor to offer			
14.2.30	Refrigerant Expansion Valve (1 no. for each type)	Vendor to offer			
15.0	DOCUMENTATION :	Vendor to offer			
15.1	Following manuals/diagrams/ list/ specifications shall be supplied in English language along with the machine documentation:	Vendor to offer			
15.2	4 hard copies of all Siemens/ Fanuc programming (Basic and Advance), Cycles, Tool management, all special procedure for ATC/Attachment etc. and all operational manuals shall be supplied in English language.	Vendor to offer			
15.3	Basic Machine operation and maintenance/ service manual (in English) - 4 copies.	Vendor to offer			

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15.4	Electrical schematic & wiring diagram of the machine with the list of all electrical, electronics items used on machine- 4 copies	Vendor to offer			
15.5	PLC print-out in Operand form with comments in English- 4 copies	Vendor to offer			
15.6	GHOST back up of hard disk/memory card of CNC controller on CD / full backup on Hard disk as applicable.	Vendor to offer			
15.7	Complete list of parts used in the machine along with specification, part/ ordering numbers and address of manufacturer in case of purchased item- 4 copies.	Vendor to offer			
15.8	Detailed assembly drawing with clear marking of each component including Assembly drawing of spindle, attachments and giving reference of manufacturer of each assembly/sub-assembly- 3 copies.	Vendor to offer			
15.9	Hydraulic, Hydrostatic, Pneumatic, Lubrication and Coolant circuit diagram along with part list, complete specification and make of each element used – 3 copies.	Vendor to offer			
15.10	Wiring diagram indicating lay out of cables, plugs, junction boxes, terminal strips etc.- 3 sets	Vendor to offer			
15.11	List of all bearings, L.M. guides, ball bushings etc. with full specification and make.- 3 sets.	Vendor to offer			
15.12	Alarm list and fault diagnostic manual- 4 sets	Vendor to offer			
15.13	Spare part list along with specification, part number and address of manufacturers- 4 sets.	Vendor to offer			
15.14	Service and user manuals of all bought out items- 4 sets.	Vendor to offer			
15.15	CDs of provided control system documentation.	Vendor to offer			
15.16	Documents comprising Operating manuals, Signals, Interfacing and diagnostic guide of offered CNC System - 3 set	Vendor to offer			
15.17	Help guides for tele-diagnostic service systems- 3 sets	Vendor to offer			
15.18	PLC print out with comments in English(Hard copy) of auxiliary systems(if used)-3 sets.	Vendor to offer			
15.19	All O&M manuals including electrical schematic ,wiring diagram, cable layout, junction box details and connector diagrams soft copy on CD/Pen Drive- 2 nos.	Vendor to offer			
15.20	O&M manuals shall include complete part list with make & specifications for compressor & refrigeration system.	Vendor to confirm			
15.21	O&M manuals shall include complete part list with make & specifications for stabiliser & isolation transformer.	Vendor to confirm			
15.22	Vendor to submit one set of all documents in best available condition one month prior to training cum pre acceptance of BHEL Engineers.	Vendor to confirm			
15.23	Sketches of all the attachments as per clause no 12.	Vendor to confirm			
15.24	Soft copies of all the above manuals to be provided.	Vendor to confirm			
16.0	TRAINING				



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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
16.1	<p>Four BHEL Persons should be trained at vendor's works for period of 2 Weeks in the following areas each:</p> <p>(a) CNC Programming for the machine & supplied accessories.</p> <p>(b) Electrical, Electronic & CNC maintenance for machine & other supplied equipment.</p> <p>(c) Mechanical & Hydraulic maintenance of the machine & other supplied equipment.</p> <p>(d) Operation of the machine & other supplied equipment.</p> <p>Pre-dispatch inspection of the machine as per S.No 23.1 shall also be carried out by the team during their stay at vendor's works for the training. BHEL reserves the right to choose no. of persons, field & period of training, out of above, while deputing their engineers for training.</p>	Vendor to offer			
16.2	Air-fare, boarding & lodging for the trainees shall be borne by BHEL.	Vendor to note			
16.3	Competent, English speaking experts shall be arranged by the vendor during training for satisfactory & effective training of BHEL personnel.	Vendor to confirm			
16.4	Vendor to quote for Training on per man per day basis	Vendor to offer			
17.0	FOUNDATION				
17.1	<p>Vendor shall submit the preliminary layout drawings for getting BHEL's approval within one month from the date of Letter of Intent (LOI) or Purchase Order, whichever is earlier. Complete Foundation Design including details viz. static / dynamic load details etc. and final layout drawings shall be submitted by the supplier within three months or mutually agreed period after getting BHEL's approval for Preliminary layout Drgs.. The layout should consist of all requirements pertaining to complete machine including space requirement for Voltage Stabilizer, Isolation Transformer, Air compressor, Chip Bin & all other accessories/ attachments/ offered items. BHEL shall construct complete foundation for the machine under supervision of supplier and at vendor's responsibility. Vendor should arrange equipment required for the testing of foundation, if required by the vendor. The vendor shall also indicate detailed specifications/requirement of earthing material, grouting compound and grouting procedure etc. for foundation bolts of the machine.</p>	Vendor to accept & offer			



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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
17.2	<p>Soil condition data at BHEL, Hardwar is as detailed below: As per old soil investigation report (Annexure-3) available with BHEL the soil properties in the area as per enclosed site Layout - 'Annexure-4' are as below :</p> <p>(i) Density of soil at 4.2 M depth : 1.6 T/m³ (ii) Angle of internal friction : 32° (at 4.2 m depth) (iii) Coefficient of elastic uniform compression "Cu" = 3.0 Kg/cm³ (at 4.2m depth for 10 m² or more contact area of foundation) (iv) Bearing Capacity at 4.2 m depth = 11 T/m² (v) Water Table = 25m below ground level</p> <p>If verification of above data or any other soil data is required by vendor for foundation design, vendor may carry out required soil investigations within one month of placement of PO or as mutually agreed without any financial implication to BHEL. All required equipment for the same shall be arranged by vendor at site on returnable basis. BHEL shall facilitate to the extent possible.</p>	For vendor's information.			
17.3	In case of any constraint due to height of overhead crane (height of crane's lowest beam, max height of crane hook from shop floor) the complete foundation of the machine shall be built below shop floor level as per requirement to avoid obstruction of ram at its highest position, with moving crane. Vendor to visit the site for collecting relevant information.	For vendor's information.			
18.0	ERECTION & COMMISSIONING				
18.1	Supplier to take full responsibility for carrying out the erection, start up, testing of machine, it's control system & all types of other supplied equipment, machining of test pieces etc. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by supplier in their foundation/layout drawings. Other requirements like overhead crane and unskilled helping personnel shall be provided by BHEL. Details of these requirements should be informed by vendor in advance. The available overhead crane capacity at the proposed location of the machine will be 150Tons and crane height (lowest beam) from the shop floor at the site will be around 20.5m. (Reference sketch of Crane dimensions at site enclosed as Annexure-5). The vendor will ensure to make requisite arrangement for lifting of heavier consignment/ items/ assembly of the machine not getting covered by this capacity. In case, any other crane due to higher capacity or any other constraint is required for erection of the machine the same (like mobile crane etc) shall be arranged by vendor.	Vendor to accept & offer			
18.2	Erection & Commissioning of Voltage stabilizer, Isolation Transformer & Air Compressor shall also be responsibility of the vendor.	Vendor to confirm			

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18.3	Successful proving of BHEL components by the supplier shall be considered as part of commissioning. All tests, as mentioned at S.No 23.0 (Machine Acceptance) shall form part of the commissioning activity.	Vendor to confirm			
18.4	Test mandrel for checking run-out/taper & alignment should be supplied	Vendor to confirm			
18.5	Tools, Tackles, Test Mandrels, instruments and other necessary equipment including Laser equipment required to carry out all above activities should be brought by the supplier. Special Tools/fixtures required to check & align the accuracy of machine shall be supplied.	Vendor to confirm			
18.6	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the supplier on returnable basis.	Vendor to confirm			
18.7	All Cover Plates required for the machine and its peripherals including pits, if any, shall be supplied and installed by the vendor.	Vendor to confirm			
18.8	The vendor shall supply sufficient quantity of paint of the machine and carry out touching wherever the paint is damaged during transit or erecting of the machine.	Vendor to confirm			
18.9	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to submit			
18.10	Charges, duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer.	Vendor to offer			
19.0	ACCURACIES				
19.1	GEOMETRICAL ACCURACIES				
19.1.1	Geometrical Accuracy Tests shall be in accordance with relevant & prevailing international standards viz. DIN 8609 / ISO 3655 or equivalent applicable standard. Detailed Test Charts for the same, clearly showing the accuracies to be achieved on the machine, shall also be submitted with the offer.	Vendor to offer			
19.1.2	The machine shall be suitable to achieve Facial and Radial runouts, within 15 micron or less. Same (Facial and Radial runouts, within 15 micron or less) shall be demonstrated by vendor on test piece during PDI (at vendor's works) and also during proveout machining (on proveout component at SI No 21.0 at BHEL's works).	Vendor to confirm			
19.1.3	All other accuracies to conform to specified standard (Latest Revision) or Suppliers Test chart whichever is finer and more accurate.	Vendor to inform			
19.1.4	All the Geometrical accuracies including test pieces machining etc. should be demonstrated to BHEL engineers during pre-acceptance at vendor's works and again during Erection & Commissioning at BHEL's Works. Test pieces & cutting tools are to be supplied by vendor for test pieces machining both at vendor's works & also at BHEL's works. Drawings of test pieces to be submitted with the offer.	Vendor to offer, confirm & submit			
19.2	POSITIONING & REPEATABILITY ACCURACIES complying tender specifications including following: (Should be measured as per VDI/DGQ 3441/ ISO 230-2 - Latest Revision) CHECKING BY USING LASER INTERFEROMETER. To be arranged by vendor	Vendor to confirm			

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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
19.2.1	Positioning accuracy in X axis (Pa) per 1000 mm	± 0.005mm			
19.2.2	Positioning accuracy in Z axis (Pa) per 1000 mm	± 0.005mm			
19.2.3	Repeatability in X axis (Ps)	0.008mm			
19.2.4	Repeatability in Z axis (Ps)	0.008mm			
19.2.5	Positioning accuracy over entire traverse in X axis (Pa)	Vendor to inform			
19.2.6	Positioning accuracy over entire traverse in Z axis (Pa)	Vendor to inform			
19.2.7	Total positioning error along X & Z axes per 1000 mm (P)	Vendor to inform			
19.2.8	Total positioning error along X & Z axes over entire traverse (P)	Vendor to inform			
19.2.9	Vendor to confirm clearly that it will be possible to machine proveout components to specified drawing accuracies with above mentioned machine accuracies.	Vendor to confirm			
19.2.10	All the Positioning and Repeatability accuracies should be demonstrated to BHEL engineers during pre-acceptance at vendor's works and again during Erection & Commissioning at BHEL's Works.	Vendor to offer			
19.3	NAS Test Piece Machining				
19.3.1	Machining of standard test pieces as per AFNOR/ISO/NAS & VDI 2851-2 for turning operations for machining accuracy tests. Vendor to supply test pieces & required tools (on returnable basis) for their machining alongwith machine. Details of NAS test piece to be submitted with the offer.	Vendor to confirm & submit details			
19.3.2	Since the machine shall be installed in shop with operating conditions as per clause No 20.0, the vendor shall guarantee achieving the above mentioned accuracies throughout the year.	Vendor to confirm			
20.0	OPERATING CONDITIONS & THERMAL STABILITY				
20.1	Total machine including all supplied items should work trouble free and should give specified accuracies under existing power supply and ambient operating conditions, as mentioned below at SI. Nos. 21.2 & 21.3.	Vendor to accept & confirm			
20.2	Power Supply (AC): Voltage = 415V +10% / -10% of fluctuations , Frequency= 50Hz +3% / -3% , No. of phases = 3 Phase (3 wire system without neutral).	Vendor to accept & confirm			
20.3	Ambient Operating Conditions: Temperature = 5 to 45 degree Celsius Relative Humidity = 95% max. Weather conditions are tropical. Atmosphere may be dust laden during some part of the year. Machine shall be kept in the normal shop floor condition without any temperature controlled enclosure/shop. Max. temperature variation is 25 deg Celsius in 24 hours.	Vendor to accept & confirm			



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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
20.4	Thermal Stability: Thermal Stability of the complete machine and all supplied items keeping in view the specified Ambient Conditions at SI.No. 20.3, specified accuracies, machining requirements of BHEL component and trouble free operation of the machine to be ensured by vendor. Since the machine shall be installed in shop with operating conditions as per SI.No. 20.3, the vendor shall ensure to have provisions in the machine for achieving the drawing accuracies on the job under these conditions. Accordingly, Vendor to ensure that machine is suitable for above and provisions on the machine for the suitability should be included by Vendor. Furthermore, Requirement of lateral isolation for machine foundation and detail of isolation material should also be identified and submit by the vendor	Vendor to offer & confirm			
20.5	The machine, including attachments and accessories, should be suitable for continuous operation to its full capacity for 24 hours a day and 7 days a week throughout year. Vendor to ensure and confirm the same.	Vendor to offer & confirm			
21.0	PROVEOUT MACHINING OF BHEL COMPONENT				
21.1	For machine acceptance Vendor needs to Proveout one component				
21.1.1	Component H.P. Inner Casing , GROOVE PLAN (Complete Turning Operation Internal&External) as per Annexure 6 or similar.	Vendor to accept & offer			
	Properties of Material Casted structure made from Alloy Steel GX12Cr Chemical Composition (in weight %): C (0.14 max.), Si (0.20-0.40), Mn (0.80-1.2), P (≤ 0.020), S (≤ 0.01), Cr (9.20-10.20), Ni(0.60-0.80). Mechanical Properties: 0.2% PS ≥ 520 N/mm ² UTS: 680 – 850 N/mm ² % EI (l=5d) $\geq 15\%$ %Ra $\geq 40\%$ Impact ≥ 35 J				
	Prove out machining shall include all types of turning, grooving & boring operations as per different drawings. Machining shall be carried out in two setups.				



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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
21.2	<p>Job Setting & Machining Process Plan & Requirement of Tools etc. for machining of proveout components shall be finally mutually agreed with vendor after the order, in case of order, without any financial implications.</p> <p>Final proveout component drawing no. may change, however, the machining features shall be in line with the original component drawing.</p> <p>Complete machining of prove out component shall be done by Vendor at BHEL works to the specified design accuracy and surface finish, using cutting tools & CNC programs to be provided by the vendor to prove the machine after complete erection, tests & test piece machining etc.</p> <p>Material for the proveout component shall be provided by BHEL.</p> <p>Vendor shall submit final job setting plan, machining process plan, tool layout & list with complete description, time study etc. for the proveout machining within three months of placement of order, in case of order.</p>	Vendor to accept & offer			
21.3	Vendor shall be responsible, financially or otherwise, for any deviation/ rejection in proveout component to the extent of cost of Casting/Forging, due to wrong machining or malfunctioning of the machine during proveout machining and also for the delay in machining due to improper recommended tooling etc. Against the cost of such deviation / rejection, if any, vendor shall be responsible as per respective commercial condition specified in tender documents.	Vendor to accept & confirm			
21.4	Vendor shall be fully responsible for machining of proveout components as per drawing and other requirements specified by BHEL to the full satisfaction of BHEL. Clarifications, if any required by vendor, regarding accuracy requirements of the proveout components, whether specified or not, should be discussed and cleared by vendor during initial technical discussions.	Vendor to accept & confirm			
21.5	BHEL may verify the accuracy/performance/capability/stability of the table with loading of a job/test piece upto specified max. capacity and rotating it for sufficient time.	Vendor to accept & confirm			
21.6	BHEL will verify performance & achievable accuracies (radial/facial runouts, ovality etc.) including vibration free machining of a diameter, face & groove on a test piece with max. overhang of ram and these should be in line with requirement specified at Sl.No. 19.1.2.	Vendor to accept & confirm			
22.0	TOOLING FOR MACHINING OF PROVE-OUT COMPONENTS Vendor should quote a separate price against this clause				



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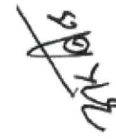


Abhinav Singh
Sr. Manager (WEX-Mechanical)

SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
22.1	Vendor to submit tooling package related to prove-out machining in two sets (SET-1 & SET-2). Vendor shall submit preliminary list of items with offer and should quote a separate price for each set (SET-1 & SET-2) against this clause. Final list of offered items for each set shall be submitted by vendor within two months or mutually agreed period after PO, in case of order, with no price implication.	Vendor to offer			
22.1.1	<u>SET-1</u> (Tools for machining of prove-out component as per Sl. No. 21.0) as per following details : (a) The SET-1 tooling package shall be to suit requirement as specified below at Sl.No. 22.1.2 & 22.1.3 (b) The prove-out machining shall be done using Tool Holders, consumables (inserts, shims, cartridges, screws etc) supplied in SET-1 . (c) In case of any addition/ change in supplied items in SET-1, required for successful prove-out machining, the same shall be replenished/ supplied by vendor without any financial implication to BHEL in minimum possible time. (d) In case of damage to any item other than consumables i.e. cassettes, cutting tools, holders, etc. during prove-out machining due to wrong machining strategy/ tool selection / cutting parameters etc., the same shall be replaced by the vendor without any financial implications to BHEL. (e) Any consumable items left after prove-out machining shall remain part of SET-1 supply and shall not be adjusted/considered for SET-2 supply. * Separate package price to be quoted.	Vendor to confirm			
22.1.2	All types of cassettes, tools, inserts, holders, special measuring instruments (if required) etc. in sufficient quantity, as recommended & required by vendor for carrying out all types of turning, grooving, boring operations for complete machining of proveout component as per its drawing to meet required drawing accuracy & surface finish. The package should include all types of cassettes required for proveout machining in addition to cassettes offered at Sl.Nos. 12.2.1 to 12.2.4. Tool holders & boring bars offered at Sl.Nos. 12.1.1 to 12.1.7 need not to be offered here again, if required to be used. In case, any other type of tool holders, different from tool holders at Sl.Nos. 12.1.1. to 12.1.7 are required to be used, same should be included in package offered here.	Vendor to offer			



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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
22.1.3	Complete fixture & set of required clamping elements & fasteners, in sufficient quantity, with setting scheme as recommended & required by vendor for clamping/setting of component on machine table in different setups and for carrying out complete machining of proveout components as per SI.No. 21.0. This shall include ladders, platform etc. required by machine operator to go up on the high jobs like proveout component and enter inside job for checking/measurement/cleaning etc.	Vendor to offer			
22.1.4	SET-2 All consumables established during prove-out machining, as per below, shall be supplied with the machine : - Tools of each type : 2 Nos. for each item. - Inserts of each type : 100 Nos. for each item. - Spares like shims , cartridges, screws, clamp etc : 10 Nos. of each type. - Screw Drivers, Torque Wrench, Wrench etc. of each type : 2 Nos. of each item * Seperate package price to be quoted.	Vendor to offer			
22.1.5	Set of Extension Blocks for Jaw-boxes/vices : Complete set of following items for clamping of different Jobs at height on the machine table: a) Four Nos. of Extension Blocks of height 1200mm (matching with offered Jaw-Boxes/Vices) b) Four Nos. of Extension Blocks of height 600mm (matching with offered Jaw-Boxes/Vices) c) Four Nos. of Extension Blocks of appropriate height (suitable for clamping Proveout Component) Vendor has to supply. The set should be complete in all respects with all required fasteners with matching Torque Wrench. The extension blocks shall be directly clamped on machine table using T-slots provided for vices/jaws and the vices/jaws shall be clamped on the top faces of these extension blocks which shall have matching T-slots. These blocks are independent of tooling packages offered by vendor for proveout machining.	Vendor to offer			
22.2	ADDITIONAL TOOLING REQUIREMENTS				
22.2.1	Mounting details of each type of toolings.	Vendor to submit			
22.2.2	Offered tooling system to be rigid to carryout machining without undue vibration , which can effect job accuracy and surface finish in extreme machining conditions like max. overhang of ram etc. .	Vendor to confirm			
22.2.3	In case of order, manufacturing drgs., catalogues & source of all tooling items (Tool Holders, Cassettes, Extension Blocks etc.) should be submitted by vendor.	Vendor to confirm			


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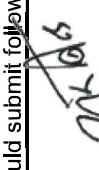


SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
22.2.4	Supplier should offer all tools & inserts with latest cutting geometries & grades to achieve high productivity and cutting parameters. Tools with indexable carbide inserts should only be offered. No brazed, HSS or form tool should be offered.	Vendor to confirm			
22.2.5	All supplied tool holders, boring bars, cassettes etc. shall have built in system for the coolant so that coolant is available directly on the cutting tip during all possible operations like grooving, turning etc. Provision for external coolant should also be provided.	Vendor to offer			
22.2.6	Tool Storage Cabinets (set of four nos.) of reputed (Indian) make having covered heavy duty drawers of suitable sizes with lock facility to store offered tooling items etc.	Vendor to offer			
22.2.7	Vendor to offer PC/Laptop for CNC programming of latest configuration, FHD, 16GB RAM (DDR5), 512 GB SSD, 15" display, Windows 11 pro 64 bit licensed.	Vendor to offer & submit			
23.0	MACHINE ACCEPTANCE:				
23.1	PDI: Pre Dispatch Inspection	Vendor to note			
	Tests/Activities to be carried out at vendor's works by vendor on the machine before dispatch using spindle & attachments :				
23.1.1	Geometrical Accuracy Tests as per clause No 19.1	Vendor to confirm			
23.1.2	Positioning Accuracy Tests as per clause No 19.2	Vendor to confirm			
23.1.3	Machining of NAS Test Piece clause No 19.3. Vendor to supply test piece & tooling for its machining.	Vendor to confirm			
23.1.4	The machine should be tested for continuous running of 48 hrs. If any break down occurs during this test, the test should be repeated for 48 hrs from that time.	Vendor to confirm			
23.1.5	Demonstration of all features of the machine, CNC system and all Accessories.	Vendor to confirm			
23.2	Test to be carried out by Vendor at BHEL works post delivery of the machine using spindle & attachments :	Vendor to note			
23.2.1	Geometrical Accuracy Tests as per clause No 19.1	Vendor to confirm			
23.2.2	Positioning Accuracy Tests as per clause No 19.2	Vendor to confirm			
23.2.3	Machining of NAS Test Piece clause No 19.3. Vendor to supply test piece & tooling for its machining.	Vendor to confirm			
23.2.4	Full load test to demonstrate the maximum power & cutting capacity of the machine.	Vendor to accept & confirm			
23.2.5	The machine should be tested for continuous running of 48 hrs. If any break down occurs during this test, the test should be repeated for 48 hrs from that time.	Vendor to confirm			
23.2.6	Demonstration of all features of the machine, CNC system & all accessories to the satisfaction of BHEL for their efficient and effective use.	Vendor to confirm			


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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
23.2.7	Demonstration by actual use of all supplied attachments and accessories to their full capacity.	Vendor to confirm			
23.2.8	Successful Job prove out of BHEL component as per clause 21.0	Vendor to confirm			
23.2.9	Two weeks supervision of independent operation of machine by BHEL after job prove out.	Vendor to confirm			
23.2.10	Training of BHEL machine operators in operation of complete machine & accessories etc. through association of the operator with vendor's expert during commissioning and job prove out during their stay at BHEL works.	Vendor to confirm			
24.0	PACKING				
24.1	PACKING : Sea worthy (For shipment by Sea) / Road worthy & rigid packing for all items of complete machine, CNC System, all Accessories and other supplied items to avoid any damage/loss in transit. When machine is dispatched in containers, all small loose items shall be suitably packed in boxes. Indigenous supply items like Voltage Stabiliser, Isolation Transformer, Air Compressor etc. should be fully packed in proper rigid boxes for safe transportation and avoiding pilferages.	As offered & agreed			
24.2	The complete packing list alongwith dimension and weight of each package should be shared before dispatch of the machine. Each package shall be marked with centre, lifting symbols and net/gross weight (wherever applicable).	Vendor to confirm			
25.0	GUARANTEE				
25.1	Guarantee for complete machine and all supplied accessories/equipment for 24 months from the date of acceptance of the machine.	Vendor to offer			
26.0	GENERAL				
26.1	The Layout of the machine is to be designed ergonomically, ensuring that Job Loaded on the Rotary Table (if applicable), Operator panel etc. are easily accessible. Any platforms for accessing the machine and covering of open spaces shall be within the scope of Vendor	Vendor to confirm			
26.2	Ladder, at suitable location, is to be provided to access the machine elements located at the top of the column as well as movement of operator from/ to Operator's platform in case of power failure or any other emergency & Machine must have rigid ladder mounted on the inside of machine column to reach and stand on the cross-rail at all of its positions	Vendor to offer & confirm			
26.3	The vendor should reproduce the specification and submit compliance / agreement / comment against each and every feature/item. Any deviation in the offer should be clearly highlighted against that particular item/feature.	Vendor to confirm			
26.4	Supplier should submit following details along with the technical offer :   				

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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
26.5	Machine Model No.	Vendor to inform			
26.6	Total connected load (KVA)	Vendor to inform			
26.7	Total Space required (Length, Width, Height) for complete machine, accessories/attachments and other supplied items like Voltage Stabilizer, Isolation Transformer & Air compressor etc. Vendor shall design the machine to keep highest point of the machine when ram and crossrail are at their highest position, at minimum possible value, preferably at height not more than available crane height (lowest beam) from shop floor at site as mentioned in Annexure-5	Vendor to inform			
26.8	Total weight of the machine	Vendor to inform			



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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
26.9	Weight of heaviest part of machine	Vendor to inform			
26.10	Weight of the heaviest assembly/sub assembly of the Machine	Vendor to inform			
26.11	Dimensions of largest part/assembly of the machine	Vendor to inform			
26.12	Painting of Machine / Electrical Panels : RAL 6011 Apple Green (Polyurethane Paint)	Vendor to offer			
26.13	Detailed catalogues, sketches/drawings/photographs pertaining to the offered machines and accessories/attachments/items should be submitted with the offer.	Vendor to submit			
26.14	Hydraulic, Pneumatic & Oil piping should be preferably metallic except places where flexible pipings are essential. All the pipes required for the same shall be supplied by the vendor.	Vendor to confirm			
26.15	All Cables and Hoses etc. should be well supported & protected in trays/brackets/drag chains etc.	Vendor to confirm			
26.16	In case of order, vendor shall supply the preventive maintenance work schedule/ requirement/ charts for the complete machine.	Vendor to confirm			
26.17	Vendor shall send bi-monthly progress report with digital photographs of machine, its major components and Sub-Assemblies for appraisal of progress of the machine by BHEL.	Vendor to confirm			
26.18	There shall be joint inspection of delivered machine/packages at BHEL Haridwar after receipt and before taking up Erection of machine	Vendor to confirm			
28.0	NETWORKING				
28.1	Machine control should have necessary hardware and software including cables so that it is ready for interfacing with gigabit Ethernet Local Area Network with 100 MB/sec. speed available on machine on UTP cables for NC program and other related data transfer. This network to be connected to wide area network/Internet. The networking should have following capabilities:	Vendor to confirm			
28.2	The machine shall appear as a node in the Entire Network.(Network Neighbourhood)	Vendor to confirm			
28.3	The program transfer shall be by simple copy and paste method provided sharing access is allowed between any PC and the machine across the network.	Vendor to confirm			
28.4	The program transfer between CNC system and network should also be possible in CNC Mode.	Vendor to confirm			
28.5	The above capability of NC Program and other file/data transfer across network shall be established and demonstrated by the vendor during machine commissioning.	Vendor to confirm			
29.0	MACHINE MONITORING SYSTEM (MMS) SIGNALS				
29.1	The supplied CNC system shall have OPC-UA compliance with valid licence.	Vendor to offer			
30.0	OPTIONAL ITEMS				
30.1	Set of Vices: Complete set of Four Nos. of Jaw-Boxes/Vices (in addition to vices offered at SI No 2.3.6)	Vendor to offer			

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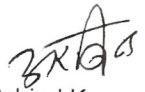
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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
31.0	QUALIFYING CONDITIONS :				
31.1	<p>Only those vendors (OEMs) should quote who have commissioned in the past (15) years (<i>on the date of opening of Tender</i>) at least one CNC VERTICAL BORING MACHINE of same or higher sizes (Table diameter 4m, Load Capacity 120T , Max Turning Height 4m) and capable of achieving machining accuracies as required in proveout component mentioned at clause no.21.0 (Accuracies for Proveout components) either (i) in at least one country other than the country from where the machine tool will be supplied to establish vendor's (OEM's) global business activity or (ii) in India ; and the referred machine is presently working satisfactorily for more than one year after commissioning (on the date of opening of Tender).</p> <p>The vendor should have experience of manufacturing & supplying CNC machines with Hydrostatic Guideways and Hydrostatic Rotary Table in the past fifteen years (on the date of opening of Tender) and should submit proof of the same.</p>	Vendor to confirm			
31.2	<p>Such Indian machine tool vendors (OEMs), who do not meet specified qualifying conditions, can quote if they have running Collaboration/ Joint Venture/ Joint Working Arrangement (on or before tender publishing date) for manufacture of CNC VERTICAL BORING MACHINE of same or higher sizes (Table diameter, Load Capacity, Max Turning Height, Hydrostatic Guideways, Hydrostatic Rotary Table) with foreign machine tool manufacturer , who meets specified qualifying conditions. Such Indian machine tool vendors (OEMs) shall have to submit from their foreign partner a back to back guarantee for satisfactory performance of the offered machine in compliance to all specified tender requirements.</p>	Vendor to confirm			
31.3	<p>BHEL reserves the right to accept or reject the OEMs based on the assessment of their technical and financial capability.</p> <p>In respect of Indian vendors (OEMs) as pe 31.2, BHEL reserves the right to accept or reject both the Indian vendors (OEMs) & their Foreign Partners based on the assessment of their technical and financial capability.</p>	Vendor to confirm			


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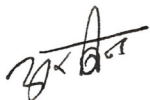

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SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
31.4	The following information should be submitted by the vendor about the companies where referred machine (s) have been supplied. This is required from all the vendors for qualification of their offer.				
31.4.1	Name of the customer / company where referred machine is installed.	Vendor to inform			
31.4.2	Complete postal address of the customer.	Vendor to inform			
31.4.3	Month & Year of commissioning	Vendor to inform			
31.4.4	Parameters of machine supplied and application for which the machine is supplied.	Vendor to inform			
31.4.5	Name and designation of the contact person of the customer.	Vendor to inform			
31.4.6	Phone, FAX no. and email address of the contact person of the customer.	Vendor to inform			
31.4.7	Performance certificate from the customers regarding satisfactory performance of machine supplied to them (Original Certificate or through E-mail directly from the customer). The original performance certificate may be returned after verification by BHEL, if required.	Vendor to submit			
31.4.8	PO copy (unpriced acceptable) of the machine supplied to customer (Original PO or through E-mail directly from the customer). The original PO may be returned after verification by BHEL, if required.	Vendor to submit			
31.4.9	BHEL reserves the right to verify the information provided by the Vendor for the referred machine at their referred customer's works including machining accuracies. It shall be the responsibility of the vendor to facilitate the visit of BHEL's team at their referred customer works .The Travel and Boarding 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.	Vendor to accept & confirm			

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Rakesh Das
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Abhinav Singh
Sr. Manager (WEX-Mechanical)

**Global Tender Enquiry No. 3098/C/6410/2024/4416/T1 for CNC VERTICAL BORER TABLE DIA
4 M, TURNING HEIGHT 4 M -01 No.**

BHAAT HEAVY ELECTRICALS LIMITED

HEEP: HARIDWAR-249 403 (UA)

Fax : +91 1334-226462, Phone : +911334-281961 ; Mobile : +91 971417800

E-mail: vibhutis@bhel.in ; raj कुमार1@bhel.in

No. Cap/GTE_CNC VERTICAL BORER TABLE DIA 4 M/2025-26

Date: 18.12.2025

Subject: Tender as detailed below:

GLOBAL TENDER ENQUIRY

1. Sealed tenders with the Tender No. and opening date clearly super scribed on the cover are invited for the supply of the following items.
2. Last date for obtaining tender documents and opening of tender is indicated. Tender will be received up to 1:45 PM on opening date and opened on the same day at 2:00 P.M. in the Tender Room.
3. After downloading the tender documents from web site, while submitting the tender as detailed in "Instruction to Bidders", intending vendors must remit the requisite EMD in the form of Electronic Fund Transfer credited in favour of BHEL account (before tender opening)/Banker's cheque/Pay Order / Demand draft in favour of BHEL (along with offer) / Fixed Deposit Receipt (FDR)/Bank Guarantee from any of scheduled banks/Insurance Surety Bonds.
4. BHEL will not be responsible for any type of postal delay / incomplete information from vendor.
5. Other terms and conditions will be as per tender documents.

Sl. No.	Tender No.	Description of Equipment	Qty. (No.)	Last date to submit offer in BHEL HEEP Tender Room	Opening date
1.	<u>3098/C/6410/2024/4416/T1</u>	CNC VERTICAL BORER TABLE DIA 4 M, TURNING HEIGHT 4 M	01	28 Days from tender floating date (1:45 PM)	28 Days from tender floating date (2:00 PM)

- PQR enclosed.
- Technical specifications enclosed.
- Pre-bid meeting shall be conducted after one week from the date of enquiry. Bidders are requested to show their willingness to attend the meeting by sending mail to vibhutis@bhel.in or ashishkumar.keshari@bhel.in . Accordingly, further details shall be sent to interested bidders.
- Test Certificate required.
- Operation and Maintenance Manual Required.
- GST Input Tax credit available.
- User Manuals required for all equipment as applicable.
- Guarantee certificate is required for two years from the date of successful commissioning.
- Pre-dispatch inspection is required & vendor shall inform to BHEL at least 45 days before the date of PDI.
- Early Delivery is acceptable.
- Recommended Spares are required.
- Erection & Commissioning is required at BHEL Haridwar.
- Erection & Commissioning charges are 5 % of equipment cost.

**Global Tender Enquiry No. 3098/C/6410/2024/4416/T1 for CNC VERTICAL BORER TABLE DIA
4 M, TURNING HEIGHT 4 M -01 No.**

- Participating bidders are requested to reply against each and every point of Technical Specification, PQR and Commercial terms and conditions.
- Wherever Service charges like Supervision, Inspection, etc. consequent or incidental to supply are envisaged in tender, such charges should not exceed 2% of the total contract value. It is recommended that such charges be sought on per visit/per day basis, and the evaluation of the tender is to be done including the cost of the service charges.

FOR & ON BEHALF OF BHEL, HARIDWAR /AGM (CAPITAL PURCHASE)

**Global Tender Enquiry No. 3098/C/6410/2024/4416/T1 for CNC VERTICAL BORER TABLE DIA
4 M, TURNING HEIGHT 4 M -01 No.**

BHAAT HEAVY ELECTRICALS LIMITED

HEEP: HARIDWAR-249 403 (UA)

Fax : +91 1334-226462, Phone : +911334-281961 ; Mobile : +91 971417800

E-mail: vibhutis@bhel.in ; raj कुमार1@bhel.in

No. Cap/GTE_CNC VERTICAL BORER TABLE DIA 4 M/2025-26

Date: 18.12.2025

Global Tender Enquiry No. 3098/C/6410/2024/4416/T1

We are pleased to invite your offer in **TWO PARTS (PART-I & PART-II)** strictly as per enclosed terms and conditions and "Instruction to Bidders", in sealed covers for the under mentioned equipment / systems.

Sl. No.	Description of Equipment	Qty. (No.)	Delivery Required	EMD (Earnest Money Deposit)
1.	<u>3098/C/6410/2024/4416/T1</u>	01	18 months from the date of placement of PO	Rs. 40,00,000/-

Please submit your lowest quotation / offer for the above requirement subject to our terms and conditions. Your offer should reach us on or before the due date by 1:45 PM.

NOTE: The vendors should submit their best price at this stage itself and they will not be allowed to revise the price. Any revision / discount given by vendor subsequently will be ignored.

Any clarification on technical specifications can be obtained from BHEL Haridwar before tender opening.

PRE-BID MEETING:

Pre-bid meeting shall be conducted after one week from the date of enquiry. Bidders are requested to show their willingness to attend the meeting by sending mail to vibhutis@bhel.in ; raj कुमार1@bhel.in or ashishkumar.keshari@bhel.in . Accordingly, further details shall be sent to interested bidders.

PURCHASE PREFERENCE TO MAKE IN INDIA

For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 19.07.2024 and subsequent Orders issued by respective Nodal Ministry shall be applicable even if issued after issue of this Tender Enquiry but before finalization of contract/ PO/ WO against this tender enquiry.

As per clause 3(b) of Make in India circular 19.07.2024, Class-I Local supplier, Class -II local supplier and Non-Local suppliers shall also be eligible to bid in this tender as this case is a **Global Tender case**.

PURCHASE PREFERENCE TO MICRO AND SMALL ENTERPRISES (MSES)

Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product.

**Global Tender Enquiry No. 3098/C/6410/2024/4416/T1 for CNC VERTICAL BORER TABLE DIA
4 M, TURNING HEIGHT 4 M -01 No.**

If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% (Selected by Buyer) of margin of purchase preference/price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for 100% (selected by Buyer) of total quantity.

EMD (EARNEST MONEY DEPOSIT): EMD shall be applicable for this tender of **Rs. Forty Lakh** Only.

EMD shall be waived off in following cases:

- Micro and Small Enterprises (MSEs) or Startups as recognized by Department for Promotion of Industry and Internal Trade (DPIIT).
- Central/ State PSUs/ Government deptts/ Autonomous/ Educational/Research institutions.
- Joint Venture or Subsidiary companies of BHEL.

EMD given by the unsuccessful tenderer shall be refunded on acceptance of award/LOI/ PO by successful tenderer. The EMD of successful bidder shall be returned after submission of Contract execution bank guarantee. EMD shall be not carry any interest.

The EMD will be accepted only in the following forms:

- (i) Electronic Fund Transfer credited in BHEL account (before tender opening).
- (ii) Banker's cheque/ Pay order/ Demand draft, in favour of BHEL (along with offer).
- (iii) Fixed Deposit Receipt (FDR).
- (iv) Bank Guarantee from any of the Scheduled Banks.
- (v) Insurance Surety Bonds.

In case of foreign bidders, it may be in the form of a bank guarantee (in equivalent Foreign Exchange amount, in case of foreign bidders) issued/ confirmed from any of the scheduled commercial bank in India in an acceptable form. The EMD shall remain valid for a period of 45 (forty-five) days beyond the final bid validity period. EMD validity will be extended by supplier if required.

Forfeiture of EMD

i) A bidder's EMD will be forfeited if the bidder withdraws or amends its/his tender or impairs or erodes from the tender in any respect within the period of validity of the tender or if the successful bidder fails to furnish the required performance security within the specified period mentioned in the Tender.

(ii) EMD by the tenderer to be withheld in case any action on the bidder is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ contractors" and forfeited/ released based on the action as determined under these guidelines.

PLEASE SUBMIT EMD IN PART- I BID. This Part-I bid shall be opened by BHEL at 02:00 PM on the due date, in the presence of authorized representatives of the bidders who may like to be present. The authorized representative should bring authority letter from their principals for attending the bid opening.

BHEL Bank Details for e-remittances of EMD by bidders:

ACCOUNT HOLDER NAME: BHARAT HEAVY ELECTRICALS LIMITED, HEEP, HARIDWAR
STATE BANK OF INDIA
RANIPUR BRANCH,
OPP: BHEL MAIN GATE,
SECTOR-5, RANIPUR,
HARIDWAR, UTTRAKHAND, INDIA
PIN CODE: 249403

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SWIFT NO : SBININBB225
CC ACCOUNT NO : 10667995458
IFSC CODE : SBIN0000586

Performance Bank Guarantee/Contract Execution Bank Guarantee

CEBG/PBG will be furnished (for 10% of total PO Value in the prescribed Format) in the following forms:

- i) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/Demand Draft/ Electronic Fund Transfer in favour of BHEL.
- ii) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- iii) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).
- iv) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL).
- v) Insurance Surety Bond.

Note:

- a. The Performance Security shall not carry any interest.
- b. BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.
- c. In case of GTE tenders, the performance security should be in the same currency as the contract and must conform to Uniform Rules for Demand Guarantees (URDG 758) - an international convention regulating international securities.

Forfeiture of Performance Security:

The performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier.

FOR & ON BEHALF OF BHEL, HARIDWAR / AGM (CAPITAL PURCHASE)

Instruction to Bidders

Clause 1.0 – Tender submission

The tenders have to be submitted in **TWO PARTS (Envelopes)** as described below on or before the due date and time of tender opening:

- a) Part-I (Envelope I) : 1. EMD
2. Pre-Qualifying Requirement (PQR)
3. Techno-Commercial Bid.
- b) Part-II (Envelope II): Price Bid.

Any corrections / amendments shall be properly & fully authenticated with signature.

BHEL will deal directly with the manufacturers / principal vendors and no correspondence with the agents will be entertained. The agents will not be permitted to visit / interact with BHEL on behalf of their principals. Subsequently also, no correspondence of any type will be made with any agent. (All individuals / companies - representing / Advisor /retainership basis or claimed to be part time employees for many OEMs / claiming to be channel or business partner for BHEL work / stockist not registered specifically etc. are Agents). Communications with only those agents who have submitted agency agreement with their respective principal may be done.

Agents shall not be allowed to represent more than one manufacturer / supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer / supplier or the manufacturer / supplier could bid directly but not both. In case bids are received from both, the manufacturer / supplier and the agent, bid received from the agent shall be ignored.

The bidders (original manufacturers) will have to submit signed offer/ bid in original directly to BHEL.
Unsigned bids shall be ignored.

The suppliers or their authorized person may be allowed to attend the tender opening, if duly authorized by their principals, through a specific letter for a particular enquiry for specific price bid opening on that particular day. General authorization letter is not acceptable.

Clause 1.1

The Techno-commercial offer and PQR in envelope - I (Part-I) shall comprise of following:

- i) Point wise reply to all the points mentioned in Pre-Qualifying Requirement specified in the tender.
- ii) Relevant documents as requested in Pre-Qualifying Requirement must be attached.
- iii) Complete Technical offer.
- iv) Catalogue of the Equipment, Complete reference of the past supply of equipment for the same or similar specification giving details of customer with Name of the contact person, Fax no, phone no, E-mail if available.
- v) Acceptance of commercial terms by vendor as per **Annexure I**.
- vi) Deviation with reference to specification to be laid down on separate sheet.
Cost of deviation is to be submitted along with the price bid essentially. In case vendor withdraws the deviation clauses the same will be considered for final evaluation,
- vii) Copy of price Bid (without prices).
- viii) Any additional documents (please specify).

While submitting the offer, following points are to be taken care of by the vendor:

- **Documents submitted with the offer/bid by the bidder shall be signed and stamped in each page by authorized representative of the bidder.**

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- **If the documents are received in soft form, the same should be transmitted through vendor's authorized e-mail to BHEL tender room e-mail id i.e. tendercell.heep@bhel.in followed by the signed and stamped copy of the same documents.**
- **Documents not signed and stamped in each page by the authorized signatory of the bidder, shall not be accepted and not considered for evaluation of the bid.**

Clause 1.2

The Price Bid in envelope - II (Part-II) shall comprise of following:

The price Bid (with price) for the complete scope strictly as specified in the price Format attached as Annexure-II. If price bid is not submitted along with Part-I bid, the offer will be rejected out rightly.

Note:

If in a price bid, non-conformities/ errors / discrepancies are observed between the quoted prices in figures and that in words the following guidelines will be followed: -

- a) If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.
- b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.
- d) If there is such discrepancy in an offer, the same is to be accepted by the bidder by a target date and in case the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.

Clause 2.0 – Tender Opening:

a) Offer should be complete in all respect (i.e. Part-I & Part-II) as described below:

Part I : Part I bid (Envelope-I) comprising EMD (if applicable) or MSE Certificate/ Startups as recognized by Department for Promotion of Industry and Internal Trade (DPIIT) towards exemption of EMD, Pre-Qualifying Requirement (PQR) and Techno-commercial bid as mentioned above.

Part II : Part II bid (Envelop-II) comprising Price Bid.

b) The tenders shall be opened in **TWO PARTS (Part-I & Part-II)** as described below:

- Part-I containing EMD (if applicable) or MSE Certificate/ Startups as recognized by Department for Promotion of Industry and Internal Trade (DPIIT) towards exemption of EMD, Pre-Qualifying Requirement (PQR) and Techno-commercial bid will be opened on the date and time specified in the tender cover page, in the presence of those vendors, who wish to attend the tender opening.
- Part II containing Price Bid will be opened on a separate date for those vendors who have qualified in the Part I. The opening date of Part II will be intimated in advance to the vendors qualified in Part-I.

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- In the event of BHEL calling for supplementary bid, the part-II price Bid along with supplementary priced bid (if necessary) will be opened at a later date of only those bidders who have qualified in the Part I. The opening date of Part II along with supplementary price bid (if necessary) will be intimated in advance to the vendors qualified in Part-I.

BHEL reserves the right to evaluate vendor's process capability / quality systems etc. by visiting vendor works (if required).

Clause No. 3:

As per directives of CENTRAL VIGILANCE COMMISSION, GOVERNMENT OF INDIA, one agent can not represent two or more suppliers or quote on their behalf in a particular tender. If so found at any stage, BHEL HARIDWAR is likely to cancel Enquiries / POs to such suppliers. Further, such Indian Agent is likely to be de-listed (Black listed for business from BHEL).

Clause No. 4: Conflict of interest among Bidders/Agents

The bidder notes that a conflict of interest would said to have occurred in the tender process and execution of the resultant contract, in case of any of the following situations:

- i) If its personnel have a close personal, financial, or business relationship with any personnel of BHEL who are directly or indirectly related to the procurement or execution process of the contract, which can affect the decision of BHEL directly or indirectly;
- ii) The bidder (or his allied firm) provided services for the need assessment/ procurement planning of the Tender process in which it is participating;
- iii) Procurement of goods directly from the manufacturers/suppliers shall be preferred. However, if the OEM/ Principal insists on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer/ supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer/ supplier could bid directly but not both. In case bids are received from both the manufacturer/ supplier and the agent, bid received from the agent shall be ignored. However, this shall not debar more than one Authorised distributor (with/ or without the OEM) .from quoting equipment manufactured by an Original Equipment Manufacturer (OEM) in procurements under a Proprietary Article Certificate.
- iv) A bidder participates in more than one bid in this tender process. Participation in any capacity by a Bidder (including the participation of a Bidder as a partner/ JV member or sub-contractor in another bid or vice-versa) in more than one bid shall result in the disqualification of all bids in which he is a party. However, this does not limit the participation of an entity as a sub-contractor in more than one bid if he is not bidding independently in his own name or as a member of a JV.

The Bidder declares that they have read and understood the above aspects, and the bidder confirms that such conflict of interest does not exist and undertakes that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder{s), in this regard. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. **In case, the Bidder is found having indulged in above activities, the same will be considered as a violation of the tender conditions, and suitable action shall be taken by BHEL as per extant policies/ guidelines.**

Clause No. 5: Compliance to Restrictions under Rule 144(xi) of the General Financial Rules

(GFRs)

- I Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).
- II "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- III "Bidder from a country which shares a land border with India" for the purpose of this Clause means:-
- a. An entity incorporated established or registered in such a country; or
 - b. A subsidiary of an entity incorporated established or registered in such a country.
or
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - d. An entity whose beneficial owner is situated in such a country; or
 - e. An Indian (or other) agent of such an entity; or
 - f. A natural person who is a citizen of such a country; or
 - g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.
- IV The beneficial owner for the purpose of (III) above will be as under:
1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.
- Explanation
- a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company.
 - b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.
2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership.
 3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person has ownership of or entitlement to more than fifteen percent of the property or capital or profits of the such association or body of individuals.
 4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
 5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
- V An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

Note:

- (i) The bidder shall provide undertaking for their compliance to this Clause, in the format provided in the bid documents.
- (ii) Registration of the bidder with Competent Authority should be valid at the time of submission of bids and at the time of acceptance of the bids.

Clause No. 6: Breach of contract, Remedies and Termination

BREACH OF CONTRACT:

The following shall amount to breach of contract:

- i. Non-supply of material/ non-completion of work by the Supplier/Vendor within scheduled delivery/ completion period as per contract or as extended from time to time.
- ii. The Supplier/Vendor fails to perform as per the activity schedule and there are sufficient reasons even before expiry of the delivery/ completion period to justify that supplies shall be inordinately delayed beyond contractual delivery/ completion period.
- iii. The Supplier/Vendor delivers equipment/ material not of the contracted quality.
- iv. The Supplier/Vendor fails to replace the defective equipment/ material/ component as per guarantee clause.
- v. Withdrawal from or abandonment of the work by the Supplier/Vendor before completion as per contract.
- vi. Assignment, transfer, subletting of Contract by the Supplier/Vendor without BHEL's written permission resulting in termination of Contract or part thereof by BHEL.
- vii. Non-compliance to any contractual condition or any other default attributable to Supplier/Vendor.
- viii. Any other reason(s) attributable to Vendor towards failure of performance of contract. In case of breach of contract, BHEL shall have the right to terminate the Purchase Order/ Contract either in whole or in part thereof without any compensation to the Supplier/Vendor.
- ix. Any of the declarations furnished by the contractor at the time of bidding and/ or entering into the contract for supply are found untruthful and such declarations were of a nature that could have resulted in non-award of contract to the contractor or could expose BHEL and/ or Owner to adverse consequences, financial or otherwise.
- x. Supplier/Vendor is convicted of any offence involving corrupt business practices, antinational activities or any such offence that compromises the business ethics of BHEL, in violation of the Integrity Pact entered into with BHEL has the potential to harm the overall business of BHEL/ Owner.

Note-Once BHEL considers that a breach of contract has occurred on the part of Supplier/Vendor, BHEL shall notify the Supplier/Vendor by way of notice in this regard. Contractor shall be given an opportunity to rectify the reasons causing the breach of contract within a period of 14 days.

In case the contractor fails to remedy the breach, as mentioned in the notice, to the satisfaction of BHEL, BHEL shall have the right to take recourse to any of the remedial actions available to it under the relevant provisions of contract.

REMEDIES IN CASE OF BREACH OF CONTRACT:

- i. Wherein the period as stipulated in the notice issued under Conciliation clause has expired and Supplier/Vendor has failed to remedy the breach, BHEL will have the right to terminate the contract on the ground of "Breach of Contract" without any further notice to contractor.
- ii. Upon termination of contract, BHEL shall be entitled to recover an amount equivalent to 10% of the Contract Value for the damages on account of breach of contract committed by the Supplier/Vendor. This amount shall be recovered by way of encashing the security instruments like performance bank guarantee etc available

- with BHEL against the said contract. In case the value of the security instruments available is less than 10% of the contract value, the balance amount shall be recovered from other financial remedies (i.e. available bills of the Supplier/Vendor, retention amount, from the money due to the Supplier/Vendor etc. with BHEL) or the other legal remedies shall be pursued.
- iii. wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case no security instruments are available or the value of the security instruments available is less than 10% of the contract value, the 10% of the contract value or the balance amount, as the case may be, will be recovered in all or any of the following manners:
 - iv. In case the amount recovered under sub clause (a) above is not sufficient to fulfil the amount recoverable then; a demand notice to deposit the balance amount within 30 days shall be issued to Supplier/Vendor.
 - v. If Supplier/Vendor fails to deposit the balance amount within the period as prescribed in demand notice, following action shall be taken for recovery of the balance amount:
 - a. from dues available in the form of Bills payable to defaulted Supplier/Vendor against the same contract.
 - b. If it is not possible to recover the dues available from the same contract or dues are insufficient to meet the recoverable amount, balance amount shall be recovered from any money(s) payable to Supplier/Vendor under any contract with other Units of BHEL including recovery from security deposits or any other deposit available in the form of security instruments of any kind against Security deposit or EMD.
 - c. In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier/Vendor.
 - vi. It is an agreed term of contract that this amount shall be a genuine pre-estimate of damages that BHEL would incur in completion of balance contractual obligation of the contract through any other agency and BHEL will not be required to furnish any other evidence to the Supplier/Vendor for the purpose of estimation of damages.
 - vii. In addition to the above, imposition of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.

Note:

- 1) The defaulting Supplier/Vendor shall not be eligible for participation in any of the future enquiries floated by BHEL to complete the balance work. The defaulting contractor shall mean and include:
 - (a) In case defaulted Supplier/Vendor is the Sole Proprietorship Firm, any Sole Proprietorship Firm owned by same Sole Proprietor.
 - (b) In case defaulted Supplier/Vendor is The Partnership Firm, any firm comprising of same partners/ some of the same partners; or sole proprietorship firm owned by any partner(s) as a sole proprietor.

Clause No. 7:

The offers of the bidders who are on the banned list and also the offer of the bidders, who engage the services of the banned firm, shall be rejected. The list of banned firms is available on BHEL website <https://hwr.bhel.com>

NOTE: PLEASE VISIT OUR SITE <https://hwr.bhel.com> FOR GENERAL INSRUCTIONS AND STANDARD TERMS AND CONDITIONS (GISTC) FOR TENDER ENQUIRIES. ALL THE BIDDERS/VENDORS MUST ENSURE COMPLIANCE OF THESE GISTC.

NO INTEREST SHALL BE PAYABLE UPON THE EARNEST MONEY DEPOSIT & PERFORMANCE SECURITY OR AMOUNT PAYABLE TO THE CONTRACTOR UNDER THE CONTRACT.

**For & on behalf of BHEL, HARIDWAR.
AGM (Capital Purchase)**

ACCEPTANCE OF COMMERCIAL TERMS BY VENDOR

S. N.	Terms	Description	Your confirmation
1	Confirmation to General Instructions and standard terms & conditions:	<p>Please confirm each clause of following documents: -</p> <ol style="list-style-type: none"> 1. General Instructions and standard terms & conditions for bidding against tender enquiry (GISTC Version Sept-2025, Rev:09_For Foreign Bidders and GISTC Version Sept-2025, Rev:10_For Indian Bidders): 2. Risk Purchase Clause of GISTC is not applicable and has been replaced with Breach of Contract mentioned at SL No. 29 of Annexure-I. 3. Additional terms & conditions of tender enquiry. <p>Deviation to conditions mentioned in above documents, if any, shall be submitted along with offer in separate documents. Please note that in case, no-deviation sheet is received along with the offer, it will be considered that all terms and conditions mentioned in above documents are acceptable to the bidder and your offer will be processed accordingly.</p>	
2	Submission of Offer & Documents Checklist:	<p><u>Superscription on envelopes:</u></p> <p>The following shall be super scribed on the envelopes: Kindly confirm that the following documents have been submitted along with your offer:</p> <p><u>PART-I</u></p> <ol style="list-style-type: none"> 1. TENDER NO. AND ITEMS DESCRIPTION 2. DUE DATE FOR OPENING. 3. EMD (IF APPLICABLE) OR MSE CERTIFICATE TOWARDS EXEMPTION OF EMD 4. PRE- QUALIFYING REQUIREMENT (PQR) 5. TECHNO-COMMERCIAL BID 6. Un-Price Bid Copy with mentioning only Taxes and Duties (NO PRICE TO BE MENTIONED IN UN-PRICE BID COPY) <p><u>PART-II</u></p> <ol style="list-style-type: none"> 1. TENDER NO. AND ITEMS DESCRIPTION 2. DUE DATE FOR OPENING OF PART-I 3. PRICE BID <p><u>Clause 1.1:</u></p> <p>The Part-I & part-II shall be individually sealed and super scribed as indicated above and shall be enclosed further in the envelop duly sealed and super scribed as:</p> <p>"TENDER FOR (ITEM NAME) AGAINST TENDER NO.----- ----- DUE ON -----CONTAINING PART-I & PART-II OF THIS OFFER." Vendor's full name and address should be clearly mentioned on the envelope and shall be addressed to:</p> <p>To,</p>	

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4 M, TURNING HEIGHT 4 M -01 No.**

		<p>Tender Room, 4th Floor, Main Administrative Building, Heavy Electrical Equipment Plant, BHEL, Ranipur HARIDWAR- 249403, Uttarakhand.</p> <p>Note: Please note that all details required in supplier registration form to be filled and submitted through online supplier registration portal on https://hwr.bhel.com along with complete documents.</p>	
3	Schedule of Technical Deviation and Schedule of Commercial Deviation.	<p>Schedule of Commercial Deviation and Schedule of Technical Deviation has been annexed along with this tender enquiry. All the Bidders are directed to mention any commercial or Technical deviation in Schedule of Commercial Deviation and Schedule of Technical Deviation only. If any deviation mentioned anywhere other than the Schedule of Commercial Deviation and Schedule of Technical Deviation, then that shall be ignored and It shall be assumed that participating bidder has no deviation against this tender.</p> <p>Please note that as per BHEL's Policy, we cannot allow Price impact for the requirement / scope of supply, which is a part of specifications of our tender enquiry. Hence please read all specification / documents thoroughly and submit your offer as per specifications of tender enquiry.</p>	
4	Validity:	<p>Confirm that your offer shall be valid for 180 days from the date of tender opening.</p> <p>BHEL will reserve the right to reject any or all quotations, quoting validity less than 180 days.</p>	
5	Evaluation criterion:	<p>The evaluation of tender shall be on the basis of "Total Landed cost at Destination" including Supply and Erection & Commissioning as per tender condition.</p> <p>For evaluation of foreign bids, exchange rate (TT selling rate of SBI) as on scheduled date of tender opening (Part-I bid opening) shall be considered. If the relevant day happens to be a bank holiday, then the Forex rate as on the previous bank (SBI) working day shall be taken.</p> <p>Indigenous suppliers: Vendors to quote rates on FOR destination (BHEL Haridwar) basis. However, the insurance will be arranged by BHEL. Vendor can dispatch good through any Indian Bank Association approved transporters having their branch at Haridwar / destination. For the convenience name and address of transporters approved by IBA and BHEL are posted at website www.bhelhwr.co.in. If any bidder still quotes rates on ex-works basis such offers will be loaded by 1.5% of ex-works value towards freight or with actual freight charges as per BHEL freight rate contract whichever is higher.</p> <p>Further, non-availability of BHEL approved transporter will not be accepted for rescheduling of delivery or waiver of penalties.</p> <p>Final evaluation currency for this Tender shall be in "INDIAN RUPEES (INR)" for all the participating bidders.</p>	

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		For Cost evaluation purpose, only the date of Part-1 Opening shall be considered.	
6	Insurance:	The Transit Insurance will be arranged by BHEL. Please send your offer keeping this in view.	
7	Bank Charges:	Kindly Confirm that Bank Charges shall be either side otherwise your prices will be loaded suitably.	
8	Technical Requirements	Kindly quote your valuable offer as per Technical Specification of CNC VERTICAL BORER TABLE DIA 4 M (enclosed with enquiry). Please ensure that documents submitted with the offer/bid shall be signed and stamped in each page by authorized representative of the bidder.	
9	Payment Terms:	<p>80% payment of Supply value shall be made within 45 days from the date of receipt of material at BHEL. Balance 20% of Supply value plus 100% of E&C portion of PO value will be paid against E&C certificate issued by BHEL and submission of Performance Bank Guarantee (PBG) valid for 27 months from the date of successful commissioning, by Supplier from any of the scheduled Banks for 10% of total PO Value in the prescribed Format. PBG confirmation charges shall be borne by vendor.</p> <p>Total Erection & commissioning value should be quoted separately by bidders. Only in case where quoted value is less than the value (in %) specified in the NIT or separate commissioning values are not mentioned in the offer, value for commissioning portion shall be deemed to be considered as the value indicated in NIT & accordingly supply value will be adjusted from that quoted value and balance will be released as commissioning payment term mentioned above.</p> <p>For Indian Vendors: Payment of GST will be made after submission of signed and stamped GST certificate, enclosed and submission of Performance Bank Guarantee (PBG) in the prescribed Format. The PBG confirmation charges shall be borne by vendor.</p> <p>For Foreign Vendors: Payment Through L/C: Where the payments are through L/C (L/C opening charges are to be loaded), payment of Supply value shall be 80% on dispatch and 20% on issue of E&C Certificate. Payment of E&C value shall be made against E&C certificate issued by BHEL. E&C certificate shall be issued on satisfactory completion of erection, commissioning, job proving, performance tests, training to operators etc. as envisaged in PO. The L/C shall be opened by BHEL as per following:</p> <p>(i) Within 30 Days of receipt of acceptable CEBG, an irrevocable unconfirmed L/C will be opened for 30% of the payment towards supply, due on shipment i.e. 24% of the Supply value of PO (30% of 80%).</p> <p>Not earlier than 60 days before the shipment date, the value of this irrevocable unconfirmed L/C would be enhanced from 24% to 80% of the Supply value of The above L/C can be negotiated after the Shipment against submission of B/L or AWB and such other documents as mentioned in the PO. The above L/C will be valid for a period extending 21 days beyond the shipment date for negotiation of documents.</p>	

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- (ii) 15 days prior to the scheduled & confirmed arrival of the technicians of supplier with their names, an irrevocable unconfirmed L/C will be opened for a value equal to 20% of the Supply value of PO plus 100% of the E&C value of PO. The validity of L/C would be sufficient to cover the period required for the completion of E&C plus 21 days as negotiation period.

This L/C can be negotiated after: (a) Completion of E&C of the equipment in BHEL and against E&C certificate issued by BHEL and (b) Submission of Performance Bank Guarantee (PBG) by Supplier in the prescribed Format valid for 30 days beyond the warranty period, from one of the Consortium Banks of BHEL or from a reputed Bank and confirmed by Consortium Bank of BHEL for 10% of total PO Value. The PBG confirmation charges shall be borne by vendor.

Bank Guarantee and Loading against non-acceptance of BHEL's Payment Terms:

If payment terms as mentioned by BHEL are not agreed by bidder, such bidder have to submit Advance Bank Guarantee at the time of payment in the prescribed Format of the amount, exceeding 80% of the SUPPLY value, valid till issue of Acceptance Certificate for the equipment. However, in no case, payment against dispatch shall exceed 90% of the SUPPLY Value.

In case of 90% payment of supply value, loading for 10% of supply value will be made for 9 months @ Repo Rate (as on tender opening date) + 4% of 10% value of basic cost of the items.

The loading criteria for the different payment terms shall be as under;

Payment Terms		Days of Loading
After Receipt & Acceptance of material within 75 days of supply.		No Loading
Against Delivery at BHEL-Stores Haridwar.		45
Against documents through bank (CAD):		45
Letter of Credit (LC)		120
Usance LC	No Loading if usance period is > 120 Days.	
	Loading of days difference i.e difference between 120 days and usance period if the usance period is < 120 days.	

Please note that in case of any deviation in the payment terms, BHEL shall evaluate your offer after loading on

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		<p>account of deviation in payment terms as per BHEL practice/policy/GISTC.</p> <p>Loading of any deviation in the payment terms will be done @ Repo Rate (as on tender opening date) + 4% of basic cost of the items.</p>	
10	PBG terms	<p>Performance Bank Guarantee (PBG) valid for 90 days beyond the guaranty period (for 27 months from the date of successful commissioning of material at BHEL, HEEP Haridwar) by Supplier from any scheduled bank for 10% of total PO Value in the prescribed Format. The PBG confirmation charges shall be borne by vendor. This bank guarantee shall have to be submitted before release of last balance payment. Please note that claim period of BG will be 90 days beyond validity period.</p> <p>The PBG should be in BHEL's PBG format and should be from one of the scheduled bank of India. The PBG confirmation charges shall be borne by vendor. The Performa of Bank Guarantee and the list of BHEL consortium bank are displayed at BHEL website www.hwr.bhel.com.</p> <p>This should be read and complied in conjunction with Bank Guarantee clause in General Instructions and Standard Term and Conditions for bidding against Tender Enquiry (herein called as GISTC)</p> <p>Please note that, no deviation in submission of Bank Guarantee is acceptable. The offers of the vendors not agreeing to submit PBG is likely to be rejected by BHEL and no further communication in this regard will be entertained.</p>	
11	Contract Execution Bank Guarantee (CEBG):	<p>The successful vendor shall have to furnish a Contract Execution Bank Guarantee (CEBG) for 10% of the Total PO value in the prescribed format within 30 days from the date of P.O. CEBG shall be from one of the scheduled bank. All bank charges on account of issuance and confirmation of CEBG will have to be borne by the vendor.</p> <p>CEBG shall be kept valid until 30 days after the date of issuance of Final E&C Certificate, which will be issued on completion of Erection & Commissioning of equipment which includes erection, commissioning, job proving, performance tests, training to operators etc. as prescribed in PO. Please note that claim period of BG will be 90 days beyond validity period.</p> <p>If the supplier fails to submit the CEBG even within 60 days from the date of PO, BHEL reserves the right to cancel PO & forfeit the EMD given by the supplier. In addition, in such case, action will be initiated in line with extant guidelines for Suspension of Business dealings with Suppliers.</p> <p>Under all circumstances, CEBG shall be kept valid till the PBG becomes operational.</p>	

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		In case of delay in submission of CEBG, enhanced CEBG which would include interest (Repo rate + 4%) for the delayed period, shall be submitted by the bidder. Further, if CEBG is not submitted till such time the first bill becomes due, the amount of performance security due shall be recovered from the bills along with due interest "	
12	CURRENCY OF PAYMENT	For foreign bidders: Freely tradable currency like Euro/ USD/CHF/ GBP/YEN etc. For indigenous supply the currency shall be Indian Rupees.	
13	CHARGES FOR SERVICES AT BHEL HARIDWAR	<p>Services to be rendered at BHEL Haridwar like commissioning, proving, training to operators, supervising foundation work etc.</p> <p>These charges are essentially to be indicated separately in price bid. Vendor to confirm BHEL will not provide boarding, lodging, travel cost (Air ticket, local transport etc.) to vendor's representatives visiting BHEL Haridwar for Commissioning.</p> <p>Total commissioning value should be quoted separately by bidders. Only in case where quoted value is less than the value (in %) specified in the NIT or separate commissioning values are not mentioned in the offer, value for commissioning portion shall be deemed to be considered as the value indicated in NIT & accordingly supply value will be adjusted from that quoted value and balance will be released as commissioning payment.</p> <p>The estimated percentage of erection & commissioning value is: 5% of machine cost.</p>	
14	TAXES & DUTIES	<p>For Foreign Vendors: Foreign Supply – Applicable Taxes. Foreign Services: TDS shall be applicable.</p> <p>For Indian Vendors: GST shall be payable with documentary proofs. TDS – Payment of TDS shall be recovered as applicable. All statutory taxes, if any, will be deducted at source & to be borne by the beneficiary. Tax deduction certificate shall be issued at the end of financial year if required.</p> <p>Details of applicable taxes & duties are to be mentioned as per GISTC Rev.10.</p> <p>a) GST Registration Number b) Address of Principal place of Business c) Type of Business d) HSN Code, its description & rate of applicable GST for the offered material e) Whether registered under Composite scheme of GST (Y/N).</p> <p>It should be noted that the evaluation of the offers shall be done considering the taxation/benefits as applicable under GST. Please submit your GST registration certificate.</p>	

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		Note: TDS as per Statutory guidelines will be deducted at source. Kindly submit your offer accordingly.	
15	GST Rate	1) Rate of GST applicable on Equipment Cost. 2) Rate of GST applicable on E&C Charges GST Input Tax Credit shall be applicable for this tender.	
16	Order Acceptance	Order acceptance (ink-signed) must be submitted within 07 days from the date of PO. If Purchase Order acceptance is not received within 07 days from the date of PO, then it shall be deemed accepted after 07 days from the date of PO.	
17	Submission of Bank Guarantee	All bank guarantees like Contract Execution Bank Guarantee and performance bank guarantee should be in the format as prescribed by BHEL.	
18	Time Period for Supply and Commissioning of equipment	<p>Activity Schedule has been incorporated in along with this Tender and all the participating bidders are directed to fill the activity schedule with realistic time in weeks for the activities mentioned in activities schedule.</p> <p>Time period to be taken by BHEL has already been mentioned in the activity schedule. Time period of E&C from the date of first intimation given by BHEL Haridwar has been mentioned in activity schedule, but if any vendor wants to quote less time than specified in activity schedule, then vendor can mention that time period in activity schedule else time period mentioned shall be considered by default for this tender. Liquidated Damage (LD) shall be governed by the Activity Schedule.</p>	
19	Liquidated Damages Clause	<p>For the purpose of Liquidated Damages for delay E&C of the equipment the duration will be reckoned from the date of intimation by BHEL to vendor for readiness of site.</p> <p>Liquidated Damages on delay in 'Supply' and/or 'E&C' will be applicable to the delays attributed to vendor. Liquidated Damages will be considered separately for 'Supply' and 'E&C'. The rate of Liquidated Damages for delayed Supply shall be @ 0.5% per week of delay of total PO value (Supply + E&C) in supply subject to a maximum of 10% of total PO value (Supply + E&C).</p> <p>The rate of Liquidated Damages for delayed E&C shall be @ 0.5% per week of delay of total PO value (Supply + E&C) in E&C subject to a maximum of 10% of total PO value (Supply + E&C).</p> <p>Maximum Liquidated Damages for delay in Supply and E&C together shall be limited to 15% of total PO value (Supply + E&C).</p> <p>Loading on account of non-acceptance of Liquidated Damages for delayed Supply and/or E&C shall be as under:</p>	

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		<p>In case any bidder is not accepting the above Liquidated Damages for delayed Supply and/or E&C, the offer of bidder shall be loaded to the extent to which it is not agreed by the bidder.</p> <p>In case, any shortage is noticed viz-a-viz PO requirement in the main equipment /spares, such shortages shall be replenished by supplier on FOR destination basis without any cost implication to BHEL i.e freight charges etc. up to destination for such short supplies shall be borne by the supplier.</p> <p>Supply period indicated by bidder should include reasonable time required for approval of drawings and other inputs from BHEL. In the Techno-Commercial Bid, the bidder shall submit milestones for various activities in co-relation with Supply and E&C period quoted by him.</p> <p>For calculating Late Delivery Liquidated Damages, delivery date shall be considered as per following:</p> <p>1. Indigenous Suppliers:</p> <p>a. Delivery Ex-works: - Date of GR /LR b. Delivery FOR Transporter Godown: - Date of GR/LR c. Delivery FOR Destination: - Date of receipt at BHEL HARIDWAR (if supply is direct to BHEL) or date of GR + one week (if documents are through bank).</p> <p>2. Foreign Supplier:</p> <p>a. Delivery FOB / FCA port of discharge: - Date of BL/AWB b. Delivery CPT/CFR port of destination: - Date of BL/AWB</p>	
20	Delivery Basis	<ul style="list-style-type: none"> For Import: <p>(A) SEA CONSIGNMENTS: Please quote your rates with both the options (a) FOB dispatching port & (b) CFR Landing Port.</p> <p>(B) AIR CONSIGNMENTS:</p> <p>Please quote your rates with both the options: (a) FCA dispatching Airport & (b) CPT Landing Airport. (Sea / Air Freight charges for import items must essentially be quoted and indicated separately in price bid.)</p> <ul style="list-style-type: none"> For Indigenous: <p>Delivery must essentially be FOR BHEL Haridwar basis. (Freight charges for indigenous items must essentially be quoted and indicated separately in price bid.)</p> <p>However, loading shall be done as per GISTC.</p>	
21	Settlement of Disputes	<p>If any dispute or difference of any kind whatsoever shall arise between BHEL and the Supplier/Vendor, arising out of the contract for the performance of the work whether during the progress of contract termination, abandonment or breach of the contract, it shall in the first place referred to Designated</p>	

Engineer for amicable resolution by the parties. Designated Engineer (to be nominated by BHEL for settlement of disputes arising out of the contract) who within 60 days after being requested shall give written notice of his decision to the contractor. Save as hereinafter provided, such decision in respect of every matter so referred shall forthwith be given effect to by the Supplier/Vendor who shall proceed with the work with all due diligence, whether he or BHEL desires to resolve the dispute as hereinafter provided or not.

If after the Designated Engineer has given written notice of this decision to the party and no intention to pursue the dispute has been communicated to him by the affected party within 30 days from the receipt of such notice, the said decision shall become final and binding on the parties. In the event the Supplier/Vendor being dissatisfied with any such decision or if amicable settlement cannot be reached then all such disputed issues shall be resolved through conciliation in terms of the BHEL Conciliation Scheme 2018.

Conciliation Clause:

Any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure as per BHEL Conciliation Scheme 2018. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in - "Procedure for conduct of conciliation proceedings" (as available in www.bhel.com).

Note: Ministry of Finance has issued OM reference No. 1/2/24 dated 03.06.2024 regarding "Guidelines for Arbitration and Mediation in Contracts of Domestic Public Procurement. In the said OM it has been recommended that Government departments/ Entities/agencies are to encourage mediation under the Mediation Act. 2023. The said Act has not yet been notified by the Government. Therefore, the clause "Settlement of Disputes" shall be modified accordingly as and when the Mediation Act 2023 gets notified.

Arbitration Clause:

Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause herein above or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, refer the disputes to Delhi International Arbitration Centre (DIAC) and such dispute to be adjudicated by Sole Arbitrator appointed in accordance with the Rules of said Arbitral Institution.

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A party willing to commence arbitration proceeding shall invoke Arbitration Clause by giving notice to the other party in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice') before referring the matter to arbitral institution. The Notice shall be addressed to the Head of the Region, Power Sector/ Unit, BHEL, executing the Contract and shall contain the particulars of all claims to be referred to arbitration with sufficient detail and shall also indicate the monetary amount of such claim including interest, if any.

After expiry of 30 days from the date of receipt of aforesaid notice, the party invoking the Arbitration shall submit that dispute to the Delhi International Arbitration Centre (DIAC) and that dispute shall be adjudicated in accordance with their respective Arbitration Rules. The matter shall be adjudicated by a Sole Arbitrator who shall necessarily be a Retd Judge having considerable experience in commercial matters to be appointed/nominated by the respective institution. The cost/expenses pertaining to the said Arbitration shall also be governed in accordance with the Rules of the respective Arbitral Institution. The decision of the party invoking the Arbitration for reference of dispute to a specific Arbitral institution for adjudication of that dispute shall be final and binding on both the parties and shall not be subject to any change thereafter. The institution once selected at the time of invocation of dispute shall remain unchanged.

The fee and expenses shall be borne by the parties as per the Arbitral Institutional rules.

The Arbitration proceedings shall be in English language and the seat and venue of Arbitration shall be Haridwar.

Subject to the above, the provisions of Arbitration & Conciliation Act 1996 and any amendment thereof shall be applicable. All matters relating to this Contract and arising out of invocation of Arbitration clause are subject to the exclusive jurisdiction of the Court(s) situated at Haridwar.

Notwithstanding any reference to the Designated Engineer or Conciliation or Arbitration herein, a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree. Settlement of Dispute clause cannot be invoked by the Contractor, if the Contract has been mutually closed or 'No Demand Certificate' has been furnished by the Contractor or any Settlement Agreement has been signed between the Employer and the Contractor.

It is agreed that Mechanism of resolution of disputes through arbitration shall be available only in the cases where the value of the dispute is less than Rs. 10 Crores.

In case the disputed amount Claim, Counter claim including interest is Rs. 10 crores and above, the parties shall be within their rights to take recourse to remedies other than Arbitration,

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		<p>as may be available to them under the applicable laws after prior intimation to the other party. Subject to the aforesaid conditions, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof as amended from time to time, shall apply to the arbitration proceedings under this clause.</p> <p>In case, multiple arbitrations are invoked (whether sub-judice or arbitral award passed) by any party to under this contract, then the cumulative value of claims (including interest claimed or awarded) in all such arbitrations shall be taken in account while arriving at the total claim in dispute for the subject contract for the purpose of above clause. Disputes having cumulative value of less than 10 crores shall be resolved through arbitration and any additional dispute shall be adjudicated by the court of competent jurisdiction.</p> <p>In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:</p> <p>In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 05/0003/2019-FTS-10937 dated 14-12-2022 as amended from time to time.</p>	
22	Drawing / data approval: (If applicable)	Any drawing / data approval, if required, from BHEL after placement of order shall be the responsibility of the vendor and any delay on account of the same shall be the responsibility of the vendor and have no bearing on the penalty applicable.	
23	Drawing / design / information use (if applicable):	The vendor to confirm that the drawing / design / information enclosed with the enquiry / proposed order will not be parted to any other agency and will also not be used for manufacturing for any other customer.	
24	Authorization for pre-inspection (If applicable):	<p>BHEL is authorized to pre-inspect the material at vendor's works as per the enclosed technical specifications. The material will be dispatched only after getting clearance from BHEL.</p> <p>Vendor should give PDI call at least 45 days in advance. If supplier fails to give pre-inspection call with in stipulated time, this will not be a reason of penalty waiver or delivery extension.</p> <p>Travel, Lodging & Boarding charges of BHEL inspectors / trainees during pre-inspection and training will be borne by BHEL.</p>	

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25	Attending to any complaint during guarantee period	Vendor will have to ensure deputation of their people for commissioning or for attending to any complaint during guarantee period within 10 days of intimation. In case of delay BHEL will be within their rights to get the job completed at the risk and cost of the supplier.	
26	Contact Details	Details of Contact person Name, Designation, Department complete postal, E-mail address & Fax no, phone, Mobile no. to be mentioned.	
27	Beneficiary of PO	Please confirm the beneficiary of PO along with the complete address.	
28	Participation in Reverse Auction	"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on https://www.bhel.com/guidelines-reverse-auction-2024) for this tender. RA shall be conducted among the techno-commercially qualified bidders (Guidelines for Reverse Auction – 2024 Doc. No. AA:SSP:RA:00 dated 05.12.2024 & subsequent revisions. Price bids of all techno-commercially qualified bidders shall be opened and shall be considered for RA as per RA guidelines. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.	
29	Breach of contract, Remedies and Termination	<p>BREACH OF CONTRCAT:</p> <p>The following shall amount to breach of contract:</p> <ol style="list-style-type: none"> Non-supply of material/ non-completion of work by the Supplier/Vendor within scheduled delivery/ completion period as per contract or as extended from time to time. The Supplier/Vendor fails to perform as per the activity schedule and there are sufficient reasons even before expiry of the delivery/ completion period to justify that supplies shall be inordinately delayed beyond contractual delivery/ completion period. The Supplier/Vendor delivers equipment/ material not of the contracted quality. The Supplier/Vendor fails to replace the defective equipment/ material/ component as per guarantee clause. Withdrawal from or abandonment of the work by the Supplier/Vendor before completion as per contract. Assignment, transfer, subletting of Contract by the Supplier/Vendor without BHEL's written permission resulting in termination of Contract or part thereof by BHEL. Non-compliance to any contractual condition or any other default attributable to Supplier/Vendor. Any other reason(s) attributable to Vendor towards failure of performance of contract. In case of breach of contract, BHEL shall have the right to terminate the Purchase Order/ Contract either in whole or in part thereof without any compensation to the Supplier/Vendor. Any of the declarations furnished by the contractor at the time of bidding and/ or entering into the contract for supply are found untruthful and such declarations were of a nature that could have resulted in non-award of contract to the contractor or could expose BHEL and/ or Owner to adverse consequences, financial or otherwise. Supplier/Vendor is convicted of any offence involving corrupt business practices, antinational activities or any such offence that compromises the business ethics of BHEL, 	

		<p>in violation of the Integrity Pact entered into with BHEL has the potential to harm the overall business of BHEL/ Owner. Note-Once BHEL considers that a breach of contract has occurred on the part of Supplier/Vendor, BHEL shall notify the Supplier/Vendor by way of notice in this regard. Contractor shall be given an opportunity to rectify the reasons causing the breach of contract within a period of 14 days.</p> <p>In case the contractor fails to remedy the breach, as mentioned in the notice, to the satisfaction of BHEL, BHEL shall have the right to take recourse to any of the remedial actions available to it under the relevant provisions of contract.</p> <p>REMEDIES IN CASE OF BREACH OF CONTRACT:</p> <ol style="list-style-type: none"> i. Wherein the period as stipulated in the notice issued under Conciliation clause has expired and Supplier/Vendor has failed to remedy the breach, BHEL will have the right to terminate the contract on the ground of "Breach of Contract" without any further notice to contractor. ii. Upon termination of contract, BHEL shall be entitled to recover an amount equivalent to 10% of the Contract Value for the damages on account of breach of contract committed by the Supplier/Vendor. This amount shall be recovered by way of encashing the security instruments like performance bank guarantee etc available with BHEL against the said contract. In case the value of the security instruments available is less than 10% of the contract value, the balance amount shall be recovered from other financial remedies (i.e. available bills of the Supplier/Vendor, retention amount, from the money due to the Supplier/Vendor etc. with BHEL) or the other legal remedies shall be pursued. iii. wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case no security instruments are available or the value of the security instruments available is less than 10% of the contract value, the 10% of the contract value or the balance amount, as the case may be, will be recovered in all or any of the following manners: iv. In case the amount recovered under sub clause (a) above is not sufficient to fulfil the amount recoverable then; a demand notice to deposit the balance amount within 30 days shall be issued to Supplier/Vendor. v. If Supplier/Vendor fails to deposit the balance amount within the period as prescribed in demand notice, following action shall be taken for recovery of the balance amount: <ol style="list-style-type: none"> a. from dues available in the form of Bills payable to defaulted Supplier/Vendor against the same contract. b. If it is not possible to recover the dues available from the same contract or dues are insufficient to meet the recoverable amount, balance amount shall be recovered from any money(s) payable to Supplier/Vendor under any contract with other Units 	
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		<p>of BHEL including recovery from security deposits or any other deposit available in the form of security instruments of any kind against Security deposit or EMD.</p> <p>c. In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier/Vendor.</p> <p>vi. It is an agreed term of contract that this amount shall be a genuine pre-estimate of damages that BHEL would incur in completion of balance contractual obligation of the contract through any other agency and BHEL will not be required to furnish any other evidence to the Supplier/Vendor for the purpose of estimation of damages.</p> <p>vii. In addition to the above, imposition of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.</p> <p>Note:</p> <p>1) The defaulting Supplier/Vendor shall not be eligible for participation in any of the future enquiries floated by BHEL to complete the balance work. The defaulting contractor shall mean and include:</p> <p>(a) In case defaulted Supplier/Vendor is the Sole Proprietorship Firm, any Sole Proprietorship Firm owned by same Sole Proprietor.</p> <p>(b) In case defaulted Supplier/Vendor is The Partnership Firm, any firm comprising of same partners/ some of the same partners; or sole proprietorship firm owned by any partner(s) as a sole proprietor.</p>	
30	Import Supply	<p>a. Phyto-sanitary Certificate essential for packages (Wooden).</p> <p>b. Country or origin certificate: Vendor to furnish the country of origin certificate from Chamber of Commerce with dispatch documents.</p>	
31	Foreign Suppliers	Dispatching port & Country to be mentioned essentially.	
32	Force Majeure Clause	<p>1. "Force Majeure" shall mean circumstance which is:</p> <p>a) beyond control of either of the parties to contract,</p> <p>b) either of the parties could not reasonably have provided against the event before entering into the contract,</p> <p>c) having arisen, either of the parties could not reasonably have avoided or overcome, and</p> <p>d) is not substantially attributable to either of the parties</p> <p>And</p> <p>Prevents the performance of the contract,</p> <p>Such circumstances include but shall not be limited to:</p> <p>I. War, hostilities, invasion, act of foreign enemies.</p> <p>II. Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war.</p> <p>III. Riot, commotion or disorder by persons other than the contractor's personnel and other employees of the contractor and sub-contractors.</p>	

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		<p>IV. Strike or lockout not solely involving the contractor's personnel and other employees of the contractor and sub-contractors.</p> <p>V. Encountering munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the contractor's use of such munitions, explosives, radiation or radio-activity.</p> <p>VI. Natural catastrophes such as earthquake, tsunami, volcanic activity, hurricane or typhoon, flood, fire, cyclones etc.</p> <p>VII. Epidemic, pandemic etc.</p> <p>2. The following events are explicitly excluded from Force Majeure and are solely the responsibilities of the non-performing party: a) any strike, work-to-rule action, go-slow or similar labour difficulty (b) late delivery of equipment or material (unless caused by Force Majeure event) and (c) economic hardship.</p> <p>3. If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within 15 (fifteen) days after the occurrence of such event.</p> <p>4. The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended by a period of time equal to period of delay caused due to such Force Majeure event.</p> <p>5. Delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall not</p> <p style="padding-left: 40px;">I. Constitute a default or breach of the Contract.</p> <p style="padding-left: 40px;">II. Give rise to any claim for damages or additional cost expense occasioned thereby, if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.</p> <p>6. BHEL at its discretion may consider short closure of contract after 1 year of imposition of Force Majeure in line with extant guidelines. In any case, Supplier/Vendor cannot consider deemed short-closure after 1 year of imposition of Force Majeure.</p>	
33	War Like Situation	<p>If the war like situation has developed in a country where a vendor's works involved in this tender is located or there is political instability and Indian Embassy located in that country forbids dealing with the said vendor or advises for not having any business dealing with vendor located in such zone / region/ country, then BHEL reserves the right not to consider the offer of such a vendor or to cancel the order in case the order has already been placed and suspend further dealings till normalcy in the country/ region is confirmed by Indian Embassy.</p>	

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34	Signing of Integrity Pact (IP)	<p>a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHE</p> <table><tr><td>S.No</td><td>IEM</td><td>Email</td></tr><tr><td>1.</td><td>Dr. Sarat Kumar Acharya, Ex-CMD, NLC</td><td>iem1@bhel.in</td></tr><tr><td>2.</td><td>Shri R. Mukundan, IRPS (Retd.)</td><td>iem2@bhel.in</td></tr><tr><td>3.</td><td>Shri Madan Lal Meena, IAS (Retd.)</td><td>iem3@bhel.in</td></tr></table> <p>b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three-part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification</p> <p>c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.</p> <p>Note: <i>No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are as mentioned below.</i></p> <p>For all clarifications/ issues related to the tender, please contact:</p> <p>Name: Vibhuti Paliwal, Manager Deptt: Purchase Capital Address: 4th Floor, Main Administrative Building, BHEL HEPP, Ranipur, Haridwar, Uttarakhand-249403 Phone: +91-1334-281961; +91 9719417800 Email: vibhutis@bhel.in Fax:01334 -226462</p> <p>The IP duly signed by authorized official of bidder / contractor / vendor and authorized official of BHEL will form a part of Purchase order / contract.</p>	S.No	IEM	Email	1.	Dr. Sarat Kumar Acharya, Ex-CMD, NLC	iem1@bhel.in	2.	Shri R. Mukundan, IRPS (Retd.)	iem2@bhel.in	3.	Shri Madan Lal Meena, IAS (Retd.)	iem3@bhel.in	
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1.	Dr. Sarat Kumar Acharya, Ex-CMD, NLC	iem1@bhel.in													
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3.	Shri Madan Lal Meena, IAS (Retd.)	iem3@bhel.in													
35	Details to be furnished by bidder	<p>i) Kindly specify the category of your registration under GST like Registered, Unregistered and composite dealer.</p> <p>ii) Kindly furnish your GST registration number, State Code and Name of the State of both the agency who will raise invoice & from where goods will be dispatched.</p> <p>iii) The bidder shall clearly indicate HSN (<i>Harmonised System Nomenclature</i>) / SAC (<i>Service Accounting Code</i>), and its description.</p>													

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		iv) Kindly furnish the rate of GST applicable on your item against subject tender enquiry.	
36	Origin of Quotation	<p>a) The quotation should preferably be from the principal bidder. However tender specific authorized registered dealer / agent can also submit the bid on their behalf, failing which the quotation is liable to be ignored. BHEL prefers to deal directly with the principal manufacturers.</p> <p>b) An agent cannot quote on behalf of more than one principal in the same tender enquiry.</p> <p>Please refer clause no. 2 of GISTC and quote offer accordingly.</p>	
37	Purchase Preference for (Make in India)	<p>For this procurement, the local content to categorize a supplier as a Class-I supplier / class-II local supplier / Non-local supplier and purchase preference to class –I local supplier, is as defined in public procurement (preference to make in India), Order 2017 revision dated 19.07.2024 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT”.</p> <p>The local supplier at the time of tender, bidding or solicitation shall be required to provide self-certification (Format enclosed) that the item offered meets the minimum local content and shall give details of the location (s) at which the local value addition is made.</p>	
38	Training to customer	As per technical specification	
39	Guarantee Clause:	Guarantee shall be offered for complete machine and all supplied accessories/equipment for 24 months from the date of successful commissioning.	
40	Cost of Withdrawal:	<ol style="list-style-type: none"> 1. Cost of withdrawal of deviation will be applicable on the basic price (i.e. excluding taxes, duties & freight) only. 2. All the bidders have to list out all their Technical & Commercial Deviations (if any) in detail in the format for cost of withdrawal only. 3. Any deviation not mentioned in the format for cost of withdrawal and shown separately or found hidden in offer, will not be taken cognizance of. 4. Bidder shall submit duly filled unpriced copy of in the format for cost of withdrawal indicating "quoted" in "cost of withdrawal of deviation" column of the schedule above along with their Techno-commercial offer, wherever applicable. In the absence of same, such deviation(s) shall not be considered and offer shall be considered in total compliance to NIT. 5. Bidder shall furnish price copy of the format for cost of withdrawal along with price bid. 6. The final decision of acceptance/ rejection of the deviations quoted by the bidder shall be at discretion of the Purchaser. 	

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		<p>7. Bidders to note that any deviation (technical/commercial) not listed in the format for cost of withdrawal and asked after Part-I opening shall not be considered.</p> <p>8. For deviations w.r.t. Credit Period, Liquidated damages if a bidder chooses not to give any cost of withdrawal of deviation loading as per GISTC, will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.</p> <p>9. Any deviation mentioned in priced copy of the format for cost of withdrawal, but not mentioned in the un-priced copy, shall not be considered.</p> <p>10. All techno-commercial terms and conditions of NIT shall be deemed to have been accepted by the bidder, other than those listed in unpriced copy of the format for cost of withdrawal.</p> <p>11. Cost of withdrawal is to be given separately for each deviation. In no event bidder should club cost of withdrawal of more than one deviation else cost of withdrawal of such deviations which have been clubbed together shall be considered as NIL.</p> <p>12. In case nature of cost of withdrawal (positive/negative) is not specified it shall be assumed as positive.</p> <p>13. In case of discrepancy in the nature of impact (positive/negative), positive will be considered for evaluation and negative for ordering.</p>	
41	Submission of offer:	All envelopes to be marked with whether "Priced Bid" (Part – 2) or "Un-Priced Bid Cum Techno-Commercial Bid & PQR" (Part-1). The replica of Priced Bid (without prices) would be necessarily submitted along with Part-1 of the offer.	
42	General Terms:	<p>Please mention separately Packing and Forwarding charges in terms of % of basic prices (if any) and mention specifically that it is inclusive or not in the quoted price. In case the offer is silent regarding these charges, the same would be considered to be inclusive in the offer. Kindly confirm.</p> <p>Please mention separately Freight charges in terms of % of basic prices (if any) and mention specifically that it is inclusive or not in the quoted price. In case the offer is silent regarding these charges, the same would be considered to be inclusive in the offer. Kindly confirm.</p> <p>Confirm that prices will remain firm and fixed during the entire validity and execution of the project.</p>	
43	Delivery Period	Delivery is required within 18 months from the date of placement of PO. Early Delivery is acceptable.	
44	Erection & Commissioning	<p>Erection & Commissioning (E&C) value will include services to be rendered at BHEL like erection, commissioning, job proving, performance tests, training to operators etc. (Whichever is applicable for this case).</p> <p>The estimated percentage of erection & commissioning value is: 5.0 % of total equipment cost.</p> <p><u>Time period required for E&C:</u> 5 Months from the date of first intimation by BHEL.</p>	

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		E&C value should be quoted separately by bidders. Only in case where quoted value is less than the value (in %) specified in the NIT or separate E&C values are not mentioned in the offer, value for E&C portion shall be deemed to be considered as the value indicated in NIT & accordingly supply value will be adjusted from that quoted value and balance will be released as E&C payment.	
45	Action against Bidders / vendor / supplier / contractor in case of default:	<p>In order to protect the commercial interests of BHEL, BHEL shall take action against supplies / contractors by way of suspension of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price etc.</p> <p>Suspension of Business Dealings could be in the form of "Hold" or "Banning" a supplier/ contractor or a bidder and shall be as per "Guidelines for Suspension of Business Dealings with Suppliers/ Contractors" available at BHEL's website "https://www.bhel.com/guidelines-suspension-business-dealings-supplierscontractors"</p>	
46	SPECIAL TERMS -1	<p>NO INTEREST PAYABLE TO CONTRACTOR</p> <p>Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL. etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.</p>	
47	SPECIAL TERMS -2	Bidder agrees to submit performance security required for execution of the contract within the time period mentioned. In case of delay in submission of performance security, enhanced performance security which would include interest (Repo rate+4%) for the delayed period, shall be submitted by the bidder. Further, if performance security is not submitted till such time the first bill becomes due, the amount of performance security due shall be recovered as per terms defined in NIT contract, from the bills along with due interest.	
48	SPECIAL TERMS -3	The Bidders has to declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies / guidelines.	
49	SPECIAL TERMS -4	1) In the event of any disallowance of input credit or applicability of interest or any other financial liability arises on BHEL-Haridwar due to any default of supplier under GST, such implication shall be to supplier's account.	

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		<p>2) Statutory Variation in Taxes & duties as applicable at the time of supply shall be payable. However, in the event of no change in law but bidder quoting certain tax structure in bid document which is lower than the applicable one, such amount shall be the maximum amount of tax that can be claimed by bidder.</p> <p>3) Attach separate sheet for additional information if necessary. The above terms & condition supersedes the terms & conditions found contradictory written elsewhere in the offer.</p> <p>4) Attach separate sheet for additional information if necessary. The above terms & condition supersedes the terms & conditions found contradictory written elsewhere in the offer.</p>	
01	SPECIAL TERMS - 5	Terms & Conditions mentioned in Annexure-I shall be given priority over GISTC terms in case of any conflict between T&C's of both.	

Note: This Special Terms and Conditions shall prevail for commercial parameters for this Tender Enquiry.

Signature of supplier with Seal

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ANNEXURE-II

PRICE SCHEDULE

CNC VERTICAL BORER -01 No

For import supply

Description	Total Price (in foreign currency)
Total Supply Value (including Essential Tooling, Accessories, Attachments, Spares, Training of BHEL Engineers at vendor works as per technical specifications, Packing & Forwarding charges (if any) on FOB (for Sea)/FCA (for Air)	
Freight Charges (Sea / Air freight charges essentially to be quoted)	
Total CFR / CPT cost =	
** Total Erection & Commissioning Value including all Services like erection, commissioning, Job proving, performance tests, training to operators etc. at BHEL Haridwar.	

For indigenous supply

Description	Total Price (in Indian rupees)
Total Supply Value (including Essential Tooling, Accessories, Attachments, Spares, Training of BHEL Engineers at vendor works as per technical specifications, Packing & Forwarding charges if any) on (F.O.R Haridwar)	
GST on total supply value (mention applicable rate of GST)	
Total supply value at BHEL Haridwar =	
** Total Erection & Commissioning Value including all Services like erection, commissioning, Job proving, performance tests, training to operators etc. at BHEL Haridwar.	
GST on Erection & Commissioning charges (mention applicable rate of GST)	
Total Supply Value (Incl of GST) + E& C Charges (Incl of GST)	

Please attach un-priced copy of your price bid with technical bid. The sequence of price and other details shall be kept same as stated in the specifications.

****Price break-up shall be furnished by bidder as per TECH. SPECIFICATION.**

“ALL BIDDERS ARE REQUESTED TO QUOTE IN FIGURES” WITH CORRESPONDING “WORDS”.

FINANCIAL EVALUATION (L1, L2...) WILL BE DONE ON THE BASIS OF TOTAL LANDED COST (SUPPLY + E&C) AT BHEL HARIDWAR.

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NOTE:

- a) Item wise breakup of the prices shall be furnished as per TECH. SPECIFICATION / DISCUSSIONS. Wherever the prices mentioned are unit prices, it should be clearly specified.
- b) Per day per person rates against each category of training at vendor's work must be mentioned separately in Technical Specification.
- c) Bidder to note that total price indicated above shall be considered for evaluation and hence should be complete in all respects for the full scope defined and considering all terms and conditions. Optional as indicated in specification will not be taken for evaluation.
- d) Any item not included in this price quoted above and shown separately will not be taken cognizance of and shall be ignored while evaluation.
- e) Following details shall be provided in separate Annexure.
 - i) Unit prices for variable items.
 - ii) Prices for any other OPTIONAL items.
- f) Transit insurance shall be arranged by BHEL.
- g) The bidder to specify in their offer (part 1 bid) the category of their registration under GST like Registered, Unregistered and composite dealer.
- h) The provisional GST registration number of Bharat Heavy Electrical Ltd, Heavy Electricals Equipment Plant, Ranipur, Haridwar is "05AAACB4146P1ZL" with state Code as "05" and State Name as "Uttarakhand".
- i) Please quote our provisional GST registration number in all invoices raised for supply of goods and services under GST regime and also ensure filing of timely return and payment of tax and compliance of other applicable provisions on supplier under GST regime.
- j) No GST will be reimbursed to unregistered or composite dealer. In the event, any GST is quoted by composite dealer, the same shall be added to the cost of supply in evaluating the bid.
- k) Since, input credit of GST will be available to BHEL-Haridwar only after correct filing of return and payment of applicable GST by supplier, reimbursement of GST shall be made by BHEL-Haridwar on matching of vendor inputs at GST portal, ensuring availability of input credit to BHEL Haridwar. Payment of GST will be made to vendor after matching of input credit and vendor to ensure submission of their invoices along with consent to accept payment of tax after such matching in all cases where bills are submitted directly to BHEL-Haridwar or through bank or under LC or through any other mode.
- l) In the event of any disallowance of input credit or applicability of interest or any other financial liability arises on BHEL-Haridwar due to any default of supplier under GST, such implication shall be to supplier's account.
- m) In the event of any change in the status of the vendor after the submission of the bid but before the supply, GST applicable at the time of supply or in the bid, based on the registration status of the vendor, whichever is lower shall be payable.
- n) Where ever applicable If PAN (Permanent Account Number) of the recipient is not available, income tax is deductible either at the normal rate or at the rate of 20 percent, whichever is higher as per Section 206AA of Indian Income Tax Act 1961.
- o) The bidder shall clearly indicate HSN (*Harmonised System Nomenclature*) / SAC (*Service Accounting Code*), its description and applicable rate of GST for each item in his techno-commercial bid.

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- p) Statutory Variation in Taxes & duties as applicable at the time of supply shall be payable. However, in the event of no change in law but bidder quoting certain tax structure in bid document which is lower than the applicable one, such amount shall be the maximum amount of tax that can be claimed by bidder.
- q) IMPORTED GOODS OFFERED BY INDIAN BIDDERS AGAINST DEALER INVOICE: Wherever the material being offered is imported, the bidder must quote the prices inclusive of IGST. The rate and value of IGST as included in the price must be indicated separately. In case quantum of IGST is not mentioned by the bidder the same will not be considered for evaluation. However, bidder will have to pass on the benefit of IGST to BHEL at the time supply.
- r) Vendors must ensure compliance of all the applicable rules and procedure as envisaged in the GST Regime. Any loss to BHEL-Haridwar due to fault / non-compliance by the vendor will be to the vendor's account.
1. BHEL will evaluate the technical bids against essential criteria/requirements. BHEL may seek clarifications, if required, from the qualified bidders only. These clarifications will be communicated to the eligible vendors and they will be asked to attend techno-commercial discussions on specified dates. The bidders will be given 15 days' notice to come prepared with the required documents/ clarifications. No extension will be given. **The offers of those bidders, who are unable to respond in this time frame, are likely to be ignored.**

Date :
Signature :
Name :
Designation :
Department :
M/s

Details on Capacity/Supply and E&C performance of Bidder

The performance of the vendors and meeting commitments is of utmost importance. In order to keep this in focus during evaluation / finalization of tenders, Bidder shall be asked to furnish specific details of company performance as per Annexure-III (1. Capacity details; 2. Performance of supplies to BHEL).

(A. **Capacity details in Part (1)** are about the Manufacturing Capacity (Major Machine: category-wise & number-wise), No. of Machines supplied during last 5 years, Outstanding Order Book position, Liquidation Plan of all machines including BHEL machines under consideration for ordering. Wherever possible, efforts are to be made to contact some of the references of past supplies given.

(B. **The Performance details of supplies to BHEL will be sought in Part (2)** for the POs placed by BHEL which can be verified; hence submission of these information by vendors is mandatory. BHEL will reserve the right to reject the offer, if past performance of the bidder is evaluated to be unsatisfactory and / or false information is given by the bidder.

- i) Immediately after opening of Techno Commercial Bid, the BHEL Haridwar Indenting Unit shall get the past performance details with BHEL verified from concerned Units as a second check.
- ii) The tender Technical Committee at BHEL Haridwar Unit shall make use of the information on past performance of the bidders during technical evaluation of the offers. If Delivery Index of any bidder is >0.20 , then his offer shall be liable for rejection. However, offer of bidder with Delivery Index >0.20 can also be accepted for further evaluation on exception basis with justified recorded reasons with approval of Unit Head & provided the bidder fulfils the requirement of proven experience of supplying similar machines & have adequate available capacity to meet BHEL tender requirement.
- iii) The actual / likely Supply and E&C period vis-à-vis scheduled Supply and E&C period (delay for reasons attributable to vendor only to be considered) shall be considered for all the machines against the POs placed by BHEL during last 5 years (limited to 5 latest executed POs) and all POs overdue for Supply and/or E&C.

For purpose of calculation of Delivery Index in case of overdue POs, the delay period for Supply and/or E&C will be reckoned from the date of bid opening of the tender under evaluation. In case of two-part bid, part-I (i.e. Techno-Commercial Bid) shall be considered as date of bid opening.

Early Supply and/or E&C vis-à-vis scheduled dates will not be entitled for any consideration for calculation of Delivery Index.

Delay in E&C shall be applicable only in such cases where E&C period has been mentioned in the PO.

In case a PO includes more than one machine, then all the machines of the PO shall be considered for calculation of Delivery Index.

- iv) The details of bidder who has been disqualified based on the delivery performance with BHEL Units should be shared by Purchase Department of indenting Unit with all sister Units under intimation to CMT&IP. CMT&IP shall host the details on website of CMT&IP department.
- v) Illustration for calculation of Delivery Index:

$$\text{Delivery Index} = \sum_{i=1}^n \left\{ \frac{(\Delta X_i + \Delta Y_i)}{(X_i + Y_i)} \right\} / n$$

i = No. of Machines; Where, i= 1..... to n (n = no. of m/cs.)

X_i = Scheduled Delivery (no. of days)

ΔX_i = Supply delay (no. of days)

Y_i = Scheduled E&C (no. of days)

ΔY_i = E&C delay (no. of days)

DETAILS OF COMPANY PERFORMANCE

A. Capacity Details:

Manufacturing Capacity (Major machines with Qty.)	Type of Major Machines	Qty.
Machines supplied during last 5 years (Year-wise with Qty.)	Scheduled Supply Period	Actual Supply Period
Outstanding Order Book position (Type of Machine with Qty. & name of customers*)		
Liquidation Plan of all machines including BHEL machines under consideration for ordering		

* If any bidder is unable to give name of ALL the customer(s) due to confidentiality restrictions, they may give details without disclosing such customer's identity.

B. Performance of supplies to BHEL:

Details of POs to be considered in last 5 years shall include (i) Last 5 POs fully executed and (ii) all POs overdue for supply and/or E&C. Details of all machines in the POs to be given.

Sl. No.	Name of M/c with broad specs.	Name of BHEL Unit	P.O. No. & Date	P.O. Value	Supply Date		Erection & Commissioning		Reason of delay, if any
					As per P.O.	Actual/ Likely	E&C period incl. job prove out as agreed (in days)	Actual / Likely period of E&C completion (in days)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.									
2.									
3.									
4.									

Note:

1. In case bidder has not received any Purchase Order in the last 5 years from any of the Units of BHEL, then 'NIL' should be indicated.
2. Reasons for delay to be explained in details.
3. BHEL reserves the right to reject the offer, if past performance of the bidder is evaluated to be unsatisfactory and/or false information is given by the bidder.