

**BHARAT HEAVY ELECTRICAL LIMITED****UNIT'S ADDRESS****UNIT'S PHONE NOS.****CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM PURCHASE DEPT.)****Enquiry No. :****Due Date :****Supplier Qtn.****No.:****Date :****SPECIFICATION CUM COMPLIANCE CERTIFICATION FOR ROTOR COILS END TRIMMING MACHINE****NOTE:-****1. Vendor (OEM) must submit complete information against clause no. 13.0 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.****ADDRESS OF THE SUPPLIER :****TELEPHONE NOS.:****FAX NOS.:****E-MAIL ADDRESS :****ADDRESS OF THE INDIAN AGENTS :****TELEPHONE NOS.:****FAX NOS.:****SCOPE: SUPPLY, ERECTION & COMMISSIONING OF ROTOR COILS END TRIMMING MACHINE WITH SPECIFICATION AS BELOW**

Sl. NO	DESCRIPTION FOR BHEL REQUIREMENT (Spec. No: S-EMT-219/00, Dt. 12.08.2011)	SPECIFIED BY/TO BE CONFIRMED BY	OFFERED	DEVIATIONS	REMARKS
<b>1.0</b>	<b>PURPOSE &amp; WORK PIECE MATERIAL</b>				
1.1	<b>Purpose:</b> The special purpose milling machine is required for cutting and face milling of the stacked copper coils of large size turbo generator rotor.	Vendor			
1.2	Work Piece Material:	Copper ( stacked copper strips)			
<b>2.0</b>	<b>Technical Details :</b>				
<b>2.1</b>	<b>Machine Parameters :</b> (Refer Drg.No.4-EMT-1785/00)				
2.1.1	Dimensions of work piece (Cross section rotor coils )	Width 50mm x Height 250mm			
2.1.2	Longitudinal slide travel (Z-Axis)	2000 mm			
2.1.3	Cross slide travel (X-Axis)	500 mm			
2.1.4	Vertical travelling of milling head (Y-Axis)	1750 mm			
2.1.5	Over all height	Vendor			
2.1.6	Taper of spindle	ISO-40			
2.1.7	Feed (X-Axis)	Manual			

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2.1.8	Feed (Y-Axis, Z-Axis)	Hydraulic / Electrical			
2.1.9	Feed Rate (Y-Axis)	Vendor			
2.1.10	Gear Box : Suitable gear box should be provided	Vendor			
2.1.11	Gear Box shall be of reputed make.	Vendor			
2.1.12	Draw bolt	M16 x 2			
2.2	<b>Constructional Features</b>				
2.2.1	The milling machine to be generally in-line with BHEL Drg. No. 4-EMT-1785/00. machine bed should be provided as per the drawing.	Vendor			
2.2.2	The vertical column should be moved on the bed and firmly locked in position	Vendor			
2.2.2	The bought out items shall be of reputed make.	Vendor			
2.2.3	Operators controls shall be provided at easily accessible location.	Vendor			
2.2.4	The milling machine is to be supplied with first filling of oil.	Vendor			
2.2.5	Milling machine will be complete with spindle head, handle's fitted for manual feed movement of longitudinal, cross and vertical slides. Required H.P electrical motor , shall be suitably mounted on the machine.	Vendor			
2.2.6	Manual feed will be provided for all 3 Axis with stoppers.	Vendor			
2.2.7	The slides should have the centralized lubricating system.	Vendor			
2.2.8	On/Off switches shall be provided very near to the working side of operator.	Vendor			
3.0	<b>ELECTRICAL :</b>				
3.1	415V (fluctuation + 10% / -15%), 50HZ (fluctuation +/-3 Hz), 3 Phase AC (3 wire system with out neutral) Power Supply will be provided by BHEL at a single point near the machine, as per layout recommended by Vendor. Requirement of grounding/earthing with required material details should be informed by vendor well in advance so that same could be incorporated during construction of foundation.	Vendor			
3.2	Motors shall conform to IEC or Indian Standards. Specify make & rating.	Vendor			
3.3	Vendor should ensure the proper earthing for the machine and its peripherals.	Required			
4.0	<b>SAFETY ARRANGEMENTS:</b>				
4.1	Safety features to be indicated.	Vendor			
5.0	<b>SPARES:</b>				
5.1	Supplier should separately quote spares for 2 years satisfactory operation. Complete list of giving its application, recommended quality and cost of individual item to be mentioned.	Vendor			
6.0	<b>DOCUMENTATION :</b> Five sets of following documents (Hard copies) in English language should be supplied along with the machine	Vendor			
7.0	<b>FOUNDATION :</b> A suitable clamping provision to be provided in the base of the machine for fixing.	Vendor			
8.0	<b>ERECTION &amp; COMMISSIONING &amp; PROVE OUT</b>				

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8.1	Erection & Commissioning , Proving the performnace of the milling machine is the responsibility of the vendor. The vendor should prove -out the machine for its proper function by cutting min. 20 Nos of stator bars at BHEL works, which is a part of the commissioning.	Vendor			
8.2	<b>TOOLING :</b> 5 Nos of circular saw cutters to be supplied along with the machine.	Vendor			
9.0	<b>MACHINE ACCEPTANCE: (Tests/Activities to be Performed by Vendor)</b>	Should be accepted & confirmed by Vendor			
9.1	<b>Tests/Activities to be carried out at supplier's works on the machine before dispatch :</b>	Vendor			
9.1.1	To demonstration of all features of the machine by milling 2nos of steel/copper jobs of cross section 50mm x 250mm. Material for job tryout to be arranged by vendor only.				
9.2	<b>Tests/Activities to be carried out at BHEL works while commissioning the machine :</b>	Vendor			
9.2.1	Demonstration of all features of the machine, control system & accessories to the satisfaction of BHEL for efficient and effective use of the machine				
10.0	<b>PACKING:</b> Rigid packing for all items of complete machine.	Vendor			
11.0	<b>GUARANTEE :</b> 24 months from the date of commissioning of the equipment.	Vendor			
12.0	<b>GENERAL :</b>				
12.1	Total connected load (KVA):	vendor			
12.2	Floor area required (Length, Width, Height) for complete machine & accessories	vendor			
12.3	Painting of Machine / Electrical Panels : RAL 6011 Apple Green (Polyurethane Paint)	vendor			
13.0	<b>REFERENCE LIST / QUALIFYING CONDITIONS :</b>	Vendor			
13.1	Only those vendors(OEMs), who have supplied and commissioned at least one milling machine / head or Special purpose machines in the past five years (from the date of opening of tenders) and such machine is presently working satisfactorily for more than one year after commissioning should quote. Vendor to submit, along with offer, the reference list of customers where similar machines have been supplied mentioning the customer, brief description of the equipment, P.O copy / Commissioning Report, application for which the item is supplied, Year of Supply.				

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## ROTOR COIL END TRIMMING MACHINE

Drg.No. 4-EMT-1785/00

