



**Bharat Heavy Electricals Limited,**

Enquiry No. :

Due Date :

Supplier's Ref.:

Date :

## Part A (Techno-Commercial Bid)

## Section IV

Specification cum Compliance Certificate for **PORTABLE TYPE EDGE BEVELLING/CHAMFERING MACHINE**

Note:-

1. 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.

2. The offer and all documents enclosed with offer should be in English language only.

Name & Address of the supplier:

Name & Address of the Indian Agent:

Telephone No.

Telephone No.

Fax No.

Fax No.

e-mail :

e-mail :

Scope: Supply, Erection & Commissioning of **PORTABLE TYPE EDGE BEVELLING/CHAMFERING MACHINE** complying with the following specification

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
<b>1.0</b>	<b>PURPOSE &amp; WORK PIECE MATERIAL</b>				
1.1	Purpose: Bevelling of Edge of Plate	Full Bevelling			
1.2	Work Piece Material:	Aluminium Alloy(Tensile strength 35kgf/mm <sup>2</sup> ) & mild steel			
<b>2.0</b>	<b>SPECIFICATION</b>				

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
	<b>MACHINE CONFIGURATION:</b> Portable self-propelled Plate Edge Beveling Machine with Adjustable Beveling Head to produce Bevel Angles 22.5° through 55° with Undercarriage for Easy Height adjustment, producing clean machined bevels with no thermal distortion, The equipment should be designed for beveling underside of the plate without need for flipping the work piece over.	Vendor to confirm			
<b>2.1 CAPACITY &amp; SIZE</b>					
2.1.1	Beveling Capacity Range (Aluminium Alloy )	6-25 mm. tk. Plate			
2.1.2	Max Plate Length	5050mm			
2.1.3	Max plate Width	2500mm			
2.1.4	Maximum Beveling width	17mm			
2.1.5	maximum Bevell depth	15mm			
2.1.7	Bevel Speed suitable for above job	3000 mm/min or Vendor to specify			
2.1.8	Motor Power	Vendor to specify			
2.1.9	Weight	Vendor to specify			
2.1.10	Working Height from floor level suitable for above job	Vendor to specify			
<b>2.2 ESSENTIAL ACCESSORIES</b>					
2.2.1	Standard deep tooth cutter(medium cut)-suitable for aluminium alloy (6 Nos.)	Vendor to confirm			
2.2.2	Spares/components required for fitting of cutter	Vendor to specify			
2.2.3	Recommended set of spares for machine like Adjusting Screw,Washer,T Nut,Main support Bolt,Chip Deflector,Chif Deflector,Cutter Nut,Cutter Washer, Screw Shaft ,Hand Wheel etc for two year trouble free operations.	vendor to specify			
<b>2.3 JOB SUPPORT</b>		Vendor to Confirm			
<b>2.4 CONSTRUCTION:</b>					
2.4.1	Vendor to furnish details of material, hardness & constructional details, including explanatory drawings, of various components like Column, frame, blade clamping & adjusting system, Lubrication system, etc .of the machine.	Vendor to furnish			
2.4.2	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 furnish			

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2.4.3	Spring Loaded Caster Wheel assembly for self-propelled bevelling operation.	Vendor to Confirm			
2.4.4	All Bevel angles should be obtainable by adjustment	Vendor to Confirm			
2.4.5	Cutter clearance adjustment	Vendor to Confirm			
2.4.6	Bevel angle adjustment through different angle bevel pins.	Vendor to Confirm			
2.4.7	Sheet support facility for the smooth disposal of bevelled materials.	Vendor to Confirm			
2.4.8	The working principle of the above mechanism shall be explained clearly.	Vendor to Confirm			
<b>3.0</b>	<b>OPERATION AND CONTROL SYSTEM:</b>				
<b>3.1</b>	<b>CONTROL PANEL:</b>				
3.1.1	The Operator Pendant is provided with all the controls relevant for operator functions like ,On/Off,Cycle start/Stop,Bevelling etc.	Vendor to confirm			
3.1.2	Machine shall be provided with main switch with key and signal light.	Vendor to Confirm			
<b>4.0</b>	<b>MANUAL CONTROL :</b>				
4.1	Movable electrically operated hand switch will be provided if required..	Vendor to confirm			
4.2	cycle control facility shall be provided	Vendor to confirm			
<b>5.0</b>	<u>First filling of all required Oils &amp; Grease etc.</u> 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 confirm			
5.1	Lubrication shall be life time lubricated wherever possible. Other lubrication points shall be of automatic type. Details shall be submitted.	Vendor to confirm			
<b>6.0</b>	<b>ELECTRICAL :</b>				

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6.1	415V + 10% / -10%, 50HZ +/-3 HZ, 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 cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the machine/control cabinets, 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 confirm			
7.0	<b>Tropicalisation:</b> All electrical / electronic equipment shall be tropicalized	Vendor to confirm			
7.1	All electrical & electronic control cabinets & panels should be dust and vermin proof if required.	Vendor to confirm			
7.2	All electrical components in the cabinets should be mounted systematically	Vendor to confirm			
7.3	Motors shall conform to IEC or Indian Standards	Vendor to confirm			
7.4	All cables and cable trays required for the machine should be included in the offer.	Vendor to confirm			
7.5	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to confirm			
7.6	The electrical components used shall be from reputed international makes such as Siemens / Telemechanique / Merlin Gerin / GE/ ABB and shall be accordance with DIN/IEC Standards.	Vendor to confirm			
8.0	<b>SAFETY ARRANGEMENTS:</b>				
	Following safety features in addition to other standard safety features should be provided on the machine:	Vendor to furnish details			
	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. Details shall be submitted in the technical bid.				
	2. In case of overloads due to wrong manoeuvres /malfunctions the machine should stop to avoid damage to machine and man.				
	3. Detailed list of safety alarms / indications provided on the machine shall be submitted along with the offer.				

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	4. 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.				
	5. Emergency Switch at suitable locations as per International Norms should be provided.				
9.0	ENVIRONMENTAL PERFORMANCE OF THE MACHINE :				
	The Machine shall conform to following factors related to environment :	Vendor to confirm			
	(a) Maximum noise & (b) maximum fume level shall be as per the national/ international norms. This will be measured as per international standards like DIN 45635-16. Supplier to mention the requirement of accoustic chamber/Enclosure separately and demonstrate compliance to fume & noise level, if so required.	Vendor to confirm			
	(b) If any safety / environmental protection enclosure is required it should be built in the machine by the vendor.	Vendor to confirm			
	(c) Paint of the machine should be oil / coolant resistant and should not peel off and mix up with coolant.	Vendor to confirm			
10.0	LEVELING & ANCHORING SYSTEM				
10.0	Complete anchoring system including foundation bolts if required, anchoring materials, leveling shoes etc should be supplied	Vendor to confirm			
11.0	TOOLS FOR ERECTION, OPERATION & MAINTENANCE :				
11.1	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 etc. for operation and maintenance of the machine should be supplied. List of such tools should be submitted with offer	Vendor to agree			
13.0	SPARES:				

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
13.1	Item wise breakup of (1) standard-mechanical, hydraulic, electrical and electronic accessories & spares (included in Basic machine cost),(2) Essential -spares/accessories required for the Purpose and (3)Optional in sufficient quantity as per recommendation of Vendor for 5 years (After initial 24 month's Guarantee period)of trouble free operation on three shifts continuous running basis should be offered by vendor.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 The list to include following, in addition to other recommended spares: <b>(Unit Price of each item of spare should be offered in the price bid)</b>	Vendor to agree			
13.2	Mechanical/ Electrical /Electronics spares List to be given	Vendor to note			
13.3	Recommended set of spares for all attachments are to be offered with details.	Vendor to confirm			
13.4	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 confirm			
14.0	<b>DOCUMENTATION :</b> Three sets of following documents (Hard copies) in English language should be supplied along with the machine. Only originals shall be supplied. Photocopies will not be accepted.	Vendor to confirm			
14.1	Operating manuals of Machine				
14.2	Programming Manuals of Machine				
14.3	Detailed Maintenance manual of machine with all drawings of machine assemblies/sub-assemblies/parts including Electrical / Pneumatic/ Hydraulic circuit diagrams. All Assembly/ Sub Assembly Drawings including ladder drawing shall be supplied with the parts list.				
14.4	Manufacturing drawings for all supplied shear blades, back gauge, fixtures etc.				
14.5	Catalogues, O&M Manuals of all bought out items including drawings, wherever applicable.				
14.6	Detailed specification of all rubber items and hydraulic/tube fittings.				

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14.7	Complete Master List of parts used in the machine shall be submitted by the vendor.	Vendor to confirm			
14.8	One additional set of all the above documentation on CD ROM, wherever possible.				
15.0	TRAINING				
15.1	BHEL Persons should be trained at supplier's Works for mutually agreed period in the area of (a) Electrical, Electronic maintenance for machine & other supplied equipments (b) Mechanical & Hydraulic maintenance of the machine & other supplied equipments (c) Operation of the machine & other supplied equipments.	Vendor to confirm			
15.2	Fare, boarding & lodging for the trainees shall be borne by BHEL.	Vendor to confirm			
15.3	Competent experts shall be arranged by the vendor during training for satisfactory & effective training of BHEL personnel.	Vendor to confirm			
15.4	Vendor to quote for training on <i>per diem</i> basis	Vendor to confirm			
16.0	FOUNDATION :				

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
16.1	Vendor shall submit the layout drawing within one month from the date of Letter of Intent (LOI) / P.O. Layout should contain layout of the machine and load points including details viz. static / dynamic load details etc. The layout should consist of all requirements pertaining to complete machine including space requirement for Voltage Stabilizer, Isolation Transformer, Air compressor, Chip Bin & any other accessories. Foundation of the machine will be designed by supplier. BHEL shall construct complete foundation for the machine under supervision of supplier and at supplier's responsibility. supplier should arrange equipments required for the testing of foundation, if required by the vendor. The vendor shall also indicate detailed specifications of grouting compound and Grouting procedure etc. for foundation bolts of the machine.	Vendor to confirm			
<b>17.0</b>	<b>ERECTION &amp; COMMISSIONING</b>				
17.1	Supplier to take full responsibility for carrying out the erection, start up, testing of machine, it's control & 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 crane and helping personnel shall also be provided by BHEL. Details of these requirements should be informed by vendor in advance.	Vendor to agree			
17.2	Successful working of full capacity of the machine by the supplier shall be considered as part of commissioning. All tests, as mentioned at <b>clause 18 &amp; 19</b> shall form part of the commissioning activity.	Vendor to agree			
17.3	Tools, Tackles, instruments and other necessary equipments required to carry out all above activities should be brought by the supplier.	Vendor to agree			
17.4	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the supplier on returnable basis.	Vendor to agree			



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17.5	All Cover Plates required for the machine and its peripherals including pits, if any, shall be supplied and installed by the vendor.	Vendor to agree			
17.6	Portion, if any, of the machine, accessories and other supplied items where paint has rubbed off or peeled during transit or erection should be repainted and merged with the original surrounding paint by the vendor. For this purpose, the vendor should supply sufficient quantity of touch-up paint of various colours of paint used.	Vendor to agree			
17.7	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to agree			
17.8	Charges,duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer.	Vendor to confirm			
17.9	Machine to be supplied with first filling of oil and grease. Equivalent Indian standards of all types of oils and grease used in the machine to be furnished by the vendor.	Vendor to agree			
<b>18.0 TESTING STANDARD &amp; PROCEDURE</b>					
18.1	Repeatability of setting of the bevelling angle	Vendor to specify the Standard.			
18.2	Repeatability of settings				
19.0	<b>MACHINE ACCEPTANCE: (Tests/Activities should be Performed by Vendor)</b>	Should be confirmed by Vendor			
19.1	<b>Tests/Activities should be carried out at supplier's works on the machine before dispatch :</b>	Vendor to confirm			
19.1.1	The machine should be tested for full load test at supplier works before despatch.				
19.1.2	Demonstration of all features of the machine, control system & accessories.				
19.2	<b>Tests/Activities should be carried out at BHEL works while commissioning the machine :</b>				
19.2.1	Full load test to demonstrate the maximum power & bevelling capacity of the machine at BHEL works.	Vendor to agree			

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19.2.2	Machine should be qualify on actual job at min & max size	Vendor to agree			
19.2.3	Demonstration of all features of the machine, control system & accessories to the satisfaction of BHEL for efficient and effective use of the machine.	Vendor to agree			
19.2.4	Training of BHEL machine operators in operation of complete machine & accessories etc by the supplier's experts / engineers during their stay at BHEL works.	Vendor to agree			
19.2.5	Demonstration by actual use of all supplied attachments and accessories to their full capacity for actual jobs.	Vendor to agree			
<b>20.0</b>	<b>PACKING:</b>				
20.1	Sea worthy & rigid packing for all items of complete machine with all Accessories and other supplied items to avoid any damage/loss in transit. When machine is despatched in containers, all small loose items shall be suitably packed in boxes.	Vendor to Confirm			
<b>21.0</b>	<b>GUARANTEE :</b>				
21.1	Guarantee for 24 months from the date of acceptance of the machine at BHEL works . During this Guarantee period at least 2 visits per year and/or whenever called by BHEL (within 24 hours of call) by the service engineer of the supplier to be made & the parts, items, spares etc. needing replacement to be replaced by the supplier free of cost. In support a Performance Bank Guarantee of 10% of Basic Value of P.O. valid for 24 months from the date of commissioning will have to be furnished by supplier	Vendor to confirm			
<b>22.0</b>	<b>GENERAL :</b>				
22.1	Machine Model	Vendor to furnish			
22.2	Total connected load (KVA):	Vendor to furnish			
22.3	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to furnish			
22.4	Painting of Machine / Electrical Panels : RAL 6011 Apple Green (Polyurethane Paint)	Vendor to confirm.			

<b>S No.</b>	<b>Description - BHEL's Requirement</b>	<b>Specified</b>	<b>Offered</b>	<b>Deviations</b>	<b>Remarks</b>
22.5	Total weight of the machine	Vendor to furnish			
22.6	Weight of heaviest part of machine	Vendor to furnish			
22.7	Weight of the heaviest assembly / sub-assembly of the Machine	Vendor to furnish			
22.8	Dimensions of largest part/ sub-assembly/ assembly of the machine	Vendor to furnish			
22.9	Detailed catalogues, sketch/photographs of the m/c and accessories/ attachments should be submitted with the offer.	Vendor to submit			

**Signature & Seal of Tenderor**