

 BHARAT HEAVY ELECTRICAL LIMITED Centralised Stamping Unit Bharat Heavy Electricals Limited Industrial Area Jagdishpur, District: Sultanpur Uttar Pradesh-227817 (India) Ph: +91-5361-271378 Fax: +91-5361-271382			Enquiry No. :		
			Due Date :		
			Vendor Quotation No.:		
<u>CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM PURCHASE DEPTT)</u>			Date :		
<u>SECTION IV</u>					
<u>SPECIFICATION CUM COMPLIANCE CERTIFICATE FOR DEBURRING MACHINE</u>					
Specification No: BHEL/CSU/DBM_TS_R0					
NOTE:-					
1. Vendor must submit complete information against Qualification Criteria mentioned against clause no. 25.0 of this technical specification. 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.					
NAME & ADDRESS OF THE VENDOR :			NAME & ADDRESS OF THE INDIAN AGENTS (If Any) :		
TELEPHONE NOS.:			TELEPHONE NOS.:		
FAX NOS.:			FAX NOS.:		
E-MAIL ADDRESS :			E-MAIL ADDRESS :		
DUNS NO.(Of Duns & Bradstreet of USA)					
SCOPE: Design, Manufacture, inspection at vendor's works, packing forwarding & supply, Installation & commissioning, training and proving of Deburring Machine complying the specification as below.					
S.NO.	DESCRIPTION OF BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	OFFERED	DEVIATION	REMARKS

S.NO.	DESCRIPTION OF BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	OFFERED	DEVIATION	REMARKS
1.0	PURPOSE & WORK PIECE MATERIAL				
1.1	The Deburring Machine is to be used for remooving burrs of stampings of electrical sheet steel for rotating electrical machines.	Vendor			
1.2	The Deburring Machine shall be a complete unit having facility for deburring of stampings with manual loading and unloading on respective Feeding and Recieving table. The machine shall be suitable for continuous operation.	Vendor			
1.3	The scope of supply shall include design, manufacture, testing, supply, Installation, commissioning and proving of the Machine at BHEL works.	Vendor			
1.4	The capacity and size of the Deburring Machine has been finalised based on the data of stampings which are proposed to be deburred on this machine. A partial list of such large stampings is given in Sketch No CSU/STA/06 Rev 00. The supplier shall check and confirm that it will be possible to Deburr these stampings on the proposed Deburring Machine.	Vendor			
2	SPECIFICATION:				
2.1	Work piece dimensions				
2.1.1	-Thickness	0.30 to 1.0 mm			
2.1.2	- Width	400 to 1250 mm			
2.1.3	- Length	400 to 1250 mm			
2.2	Deburring Unit	vendor to offer			
2.2.1	Roller Width, min	1300 mm			
2.2.2	Working Width, min	1250 mm			
2.2.3	Height of top of conveyor above ground floor, approximately	900 mm			
2.2.4	Machine speed (variable)	5 to 35 Metres/min			
2.2.5	-Output for stamping, min	10-20 pieces/ min			
2.2.6	-Output for other stampings given in Sketch No CSU/STA/06	To be specified by Vendor			
2.2.7	Burr level after deburring	Less than 3 microns			
2.2.8	Contact Roller Diameter	Vendor to specify			
2.2.9	Grinding belt width	Vendor to specify			
2.2.10	Grinding belt Length	Vendor to specify			
2.2.11	Net weight of Machine	Vendor to specify			
2.2.12	Gross weight Of Machine	Vendor to specify			
2.2.13	Dimensions of Machine	Vendor to specify			
2.2.14	Exhaust section to Dust Extraction Unit	Vendor to specify			
2.2.15	Exhaust Air Flow at Inlet of dust extraction Unit	Vendor to specify			
2.2.16	Exhaust Dimensions	Vendor to specify			
2.2.17	Air requirement (Max Pressure requireed and Flow Required)	Vendor to specify			
2.2.18	Main Motor Power	Vendor to specify			
2.2.19	Feed Drives AC Motor (Nos. & Electric Power)	Vendor to specify			
2.2.20	Brush Motor (Electric Power)	Vendor to specify			
2.2.21	Front & rear Table for loading and Unloading respectively shall be provided with conveyor belt.	vendor			
2.2.22	Shut or Throttle Valve in Ducting to be provided	vendor			
2.2.23	Color of Machine shall be RAL6011 Apple Green	vendor			
2.2.24	Machine Model No.	vendor			
2.2.25	Air Jet cleaning facility for cleaning abrasive belt and Billy roll shall be provided	vendor			
2.3	Wet Dust Extraction & Collection Unit	vendor to offer			
2.3.1	Wet Dust Extraction and collection unit shall be completely equipped with wet working unit, cyclone seperator, fan silencer etc.	vendor to offer			

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2.3.2	Capacity	vendor to specify			
2.3.3	Wet Dust Collector shall be zinc-coated MS constuction, with Epoxy paint finish uinside and thorne hammer blue finish outside. Dust conllector shall have self-induced scrubbing action and shall be complete with sledge bin and rake.	Vendor to offer			
2.3.4	Electrical power of Motor	vendor to specify			
2.3.5	Water tank capacity (850 Litre or more)	vendor to specify			
2.3.6	Mechanical water level control to be provided by vendor	vendor to confirm			
2.3.7	Silencer (dBA Less than 85) shall be provided	vendor to confirm			
2.3.8	Drain valve to be provided	vendor to confirm			
2.3.9	D.O.L Starter to be provided	vendor to confirm			
2.3.10	Wet Dust collector shall be provided with all the required ducting and piping from machine to Dust extraction and collection unit	vendor to confirm			
2.3.11	Color of Wet Dust Collector Unit shall be RAL 6011 Apple Green	vendor to confirm			
2.3.12	Model No.	Vendor			
2.4	Product Cleaning Brush				
2.4.1	Vendor shall supply sisal brush for removing the remaining dust on the products positioned on the rear table.	Vendor			
2.5	Machine Construction, Operation and other Features				
2.5.1	Machine shall be suitable for manual belt dressing arrangement with safety guide.				
2.5.2	The machine frame shall be rigid, heavy duty, ribbed welded construction.	Vendor			
2.5.3	It shall be possible to open the top of the deburring unit for inspection. It shall have safety interlock while closing the top to guard against any faulty adjustment.	Vendor			
2.5.4	The contact roller for deburring shall be of High flexible oil and heat resistant rubber with air cushion serrated face, adjustable in height by means of a control lever.	Vendor			
2.5.5	It shall be possible to adjust the height of the contact roller head with a precision of 0.10 mm. Height adjustment indication shall also be provided.	Vendor			
2.5.6	A device for tensioning of abrasive belt and keeping it tensioned at all times shall be provided.	Vendor			
2.5.7	A device tracking grinding belt oscillation and its self positioning shall be provided.				
2.5.8	Feed motor shall be frequency controlled for running the machine at various speeds	Vendor			
2.5.9	Two separate conveyor systems respectively for feeding and for receiving the segments after deburring shall be provided. The size of conveyor systems shall be suitable for the maximum size of segments proposed to be deburred from the machine.	Vendor			
2.5.10	Facility for cleaning of segments after deburring on both sides by brush with dust extraction equipment shall be provided..	Vendor			
2.5.11	The ducting shall have a throttle valve for controlling the air flow. The exhaust air shall be released in the air at a suitable height after it through a wet dust collector. Complete ducting for the extraction unit shall be supplied.	Vendor			
2.5.12	The wet dust collector shall be of water filled tank type through which the exhaust air shall be passed by the action of a motor driven fan. The grinding dust and residues which will settle at the bottom of the tank shall be removed by raking into a container. The water tank will normally be connected to a tap water supply which will enable a constant water level in the tank.	Vendor			
2.5.13	The noise level of the wet dust collector shall be less than 85 dBA.	Vendor			
3	OPERATION AND CONTROL SYSTEM:				

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3.1	OPERATOR'S PANEL:				
3.1.1	Operator's panel having complete machine control system of required configuration shall be provided for safe, convenient and efficient operation. All switches should be within reach of operator of average height (Indian) for easy operation. All displays/indications, alarms, indicator lamps should also be conveniently placed accordingly. Layout showing complete details should be submitted	Vendor			
3.2	MANUAL CONTROL :				
3.2.1	Complete manual control of machine with required switches / keys should be provided on operator's panel.	Vendor			
4	ELECTRICAL AND CONTROL CABINETS :				
4.1	Power Supply: 415 V: - 10%, +10%, 50 Hz: $\pm 3\%$, 3 phase AC(3 wire supply without neutral). Source 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 in the scope of the 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			
4.2	All electrical / electronic equipment shall be tropicalized	Vendor			
4.3	All electrical & electronic control cabinets & panels should be dust and vermin proof	Vendor			
4.4	Air conditioner with dehumidifier to be provided for electrical control cabinets	Vendor			
4.5	Motors shall conform to IEC or Indian Standards	Vendor			
4.6	Oil-proof cables shall be used for power and control supply. Connection lines between control cabinet and machine shall be of plug-in type. Main drive cables shall be routed via terminal boards.	Vendor			
4.7	All cables moving with traversing axes should be installed in Caterpillar/ Drag chain. Additionally, all the cable trays required for laying of cables should be included in the offer.	Vendor			
4.8	Vendor should ensure double earthing for the machine and its peripherals.	Required			
4.9	All light fittings, consumables, adapters/receptacles should have compatibility with Indian equivalents.. i.e. they shall be replaceable by their equivalents available in Indian market	Required			
4.10	All electrical components in the cabinets should be mounted on DIN Rail.	Required			
5.0	SAFETY ARRANGEMENTS:				
5.1	Following safety features in addition to other standard safety features should be provided on the machine:				
5.1.1	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 should be available.	Vendor			
5.1.2	A detailed list of all alarms / indications provided on machine should be submitted by the Vendor.	Vendor			
5.1.3	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.	Vendor			
5.1.4	All the rotating parts used on machine should be statically & dynamically balanced to avoid undue vibrations.	Vendor			

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5.1.5	Emergency Switches at suitable locations as per International Norms should be provided.	Vendor			
5.1.6	Oil & water pipe lines should not run with electrical cable in the same tray / trench.	Vendor			
5.1.7	All motors shall be TEFC continuous duty with overload protection. Main motor shall be equipped with automatic star delta switch	Vendor			
5.1.8	Emergency machine stop push button switches and automatic disc brake shall be provided	Vendor			
5.1.9	Safety fence shall be installed at suitable locations as necessary for the safety of the operator and others working nearby.	Vendor			
6	ENVIRONMENTAL PERFORMANCE OF THE MACHINE :				
6.1	The Machine should conform to following factors related to environment :				
6.1.1	The noise level during operation of the machine shall be 85 dBA. Maximum noise level under normal load condition, 1 M away from the machine with correction factor for back ground noise shall be indicated. This will be measured as per international standards like DIN 45635-16. Vendor to demonstrate compliance to noise level, if so required	Vendor			
6.1.2	There shall not be any harmful emissions from the machine, the machine shall not produce any harmful effluents and no hazardous chemicals shall be used in the machine.	Vendor			
6.1.3	If any safety / environmental protection enclosure is required it should be built in the machine by the Vendor and details shall be given in the offer	Vendor			
6.1.4	Paint of the machine should be oil / coolant resistant and should not peel off and mix up with coolant.	Vendor			
7	FIRST FILL OF OILS AND GREASES				
7.1	First filling of all required lubricating oils & grease etc. shall be supplied by Vendor. Indian source or Indian equivalent and specifications of oils/ greases are also to be provided by the Vendor.	Vendor			
8	PNEUMATIC SYSTEM:				
8.1	AIR COMPRESSOR:				
8.1.1	Air compressor, air dryer, air reciever, connecting hoses/pipes, valves, pressure switches etc. of suitable type and capacity to be supplied along with the machine. The air delivery of compressor shall meet all the air requirement of machine. Vendor to ensure the quality of air supplied by compressor shall be suitable to machine under operation. all pressure valves, pressure guages, pressure switches, hose pipes, pneumatic controls etc. required for smooth and trouble free running of compressor shall be provided by the vendor. vendor to include spares for two years of trouble free working of air compressor in his offer.	Vendor			
8.1.2	Make & Model of Air Compressor	Vendor			
8.1.3	Make & Model of Air Dryer	Vendor			
8.1.4	Capacity (Flow, Pressure & KW)	Vendor			
9	LEVELING & ANCHORING SYSTEM				
9.1	Complete anchoring system including foundation bolts, anchoring materials, fixators, leveling shoes etc should be supplied along with machine	Vendor			
10	TOOLS FOR INSTALLATION, OPERATION & MAINTENANCE :				

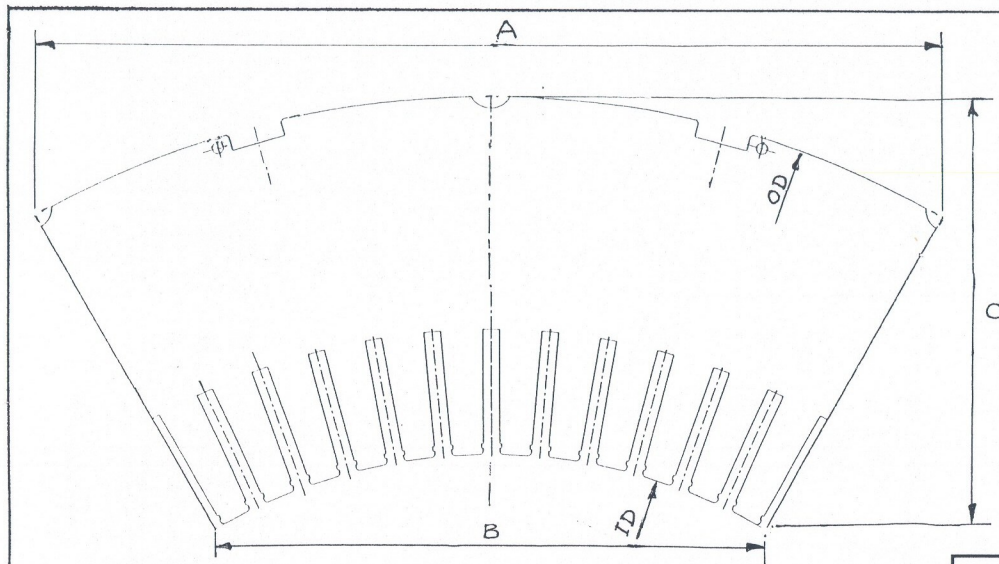
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10.1	Special tools and equipment required for Installation of the machine shall be brought by the vendor. Necessary tools like Torque Wrench, Spanners, Keys, grease guns etc.for operation and maintenance of the machine should be supplied. List of such tools should be submitted with offer.	Vendor			
11	ACCESSORIES:				
11.1	Any additional items/ accessories, recommended by the vendor for improved performance of the machine shall be supplied alongwith the machine and shall be described in the offer with complete details .	Vendor			
12	SPARES:				
12.1	Following spares shall be supplied by vendor along with machine for two years of normal operation of machine	vendor to offer			
12.1.1	Set of contact rollers	vendor			
12.1.2	Set of Billy rollers	vendor			
12.1.3	60 Nos. Abrasive Belts of adequate size	vendor			
12.1.4	Complete set of mechanical, hydraulic, electrical and electronic, pneumatic spares in sufficient quantity as per recommendation of Vendor for 2 years of operation on three shifts continuous running basis should be offered by Vendor. Itemized breakup of the speres shall be submitted with the offer.	Vendor			
12.1.5	All types of spares for total machine and accessories should be available for atleast 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 & Vendors to enable BHEL to procure these in advance, if required.	Vendor			
12.1.6	Complete list of spares for machine and accessories, along with specification / type / model, and name & address of the Vendor shall be furnished along with documentation to be supplied with the machine.	Vendor			
13	DOCUMENTATION:				
13.1	Three sets of Descriptive leaflets, technical literature, drawings, schematic diagrams, electrical wiring diagram, hydraulic circuit diagrams, spare parts manuals, Installation and commissioning drawing etc shall be supplied.	Vendor			
13.2	The technical documentation shall include documentation of outsourced items also.	Vendor			
13.3	All Specifications and Design Documents shall be neatly printed on A4 size paper. All drawings shall be of standard sizes (A0 ,A1, A2 etc). The title block shall be as approved by BHEL.	Vendor			
13.4	OPERATING AND MAINTENANCE MANUALS:				
13.4.1	The O & M manual shall include the following:				
	Operating manuals of Machine	Vendor			
	Detailed Maintenance manual of machine with all drawings of machine assemblies/sub-assemblies/parts including Electrical / Pneumatic/ Coolant / Hydraulic circuit diagrams. All Assembly/ Sub Assembly Drawings shall be supplied with the part list also.	Vendor			
	Maintenance, Interface & commissioning manuals	Vendor			
	Catalogues, O&M Manuals of all bought out items including drawings, wherever applicable.	Vendor			
	Detailed specification of all rubber items and hydraulic / lube fittings	Vendor			

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13.4.2	The Operating and maintenance Manuals shall be in English Language and shall be supplied in Three copies. One additional set of all the above documentation shall be supplied on CD ROM, wherever possible.	Vendor			
14	TRAINING				
14.1	TRAINING AT BHEL PLANT				
14.1.1	The Vendor shall undertake training of Mechanical, Electronics & Control persons in operation and maintenance of the machine at BHEL's works at the time of Installation and Commissioning of the machine. The training program shall be as follows:	Vendor			
	Construction and functioning of the system	Vendor			
	Presentation of individual components by means of sectional views and schematic drawings	Vendor			
	Safety instructions	Vendor			
	Setting up of system	Vendor			
	Demonstration of machine in operation	Vendor			
	Resetting of system	Vendor			
	Operator control of system in all operating modes	Vendor			
	Programming of all required data	Vendor			
	Going through all operating instructions	Vendor			
	Display and control system	Vendor			
	Fault location by means of programming unit	Vendor			
	Electrical, Electronic & CNC maintenance for machine & other supplied equipments	Vendor			
	Mechanical & Electrical maintenance of the machine & other supplied equipments	Vendor			
	Other operational requirements	Vendor			
15	FOUNDATION :				
15.1	Vendor shall submit General Arrangement drawings and Complete Foundation Drawing including details like Static/ Dynamic load details, quality assurance plan etc. shall be submitted by the Vendor with in one month from the date of LOI/PO. BHEL shall construct complete foundation for the machine as per instructions of the Vendor and at Vendor's responsibility. Vendor may supervise the construction of foundation if he so desires.	Vendor			
15.2	The Vendor shall also indicate detailed specifications of grouting compound and grouting procedure etc. for foundation bolts of the machine.	Vendor			
16	INSTALLATION & COMMISSIONING AT BHEL WORKS:				
16.1	Vendor shall be fully responsible for carrying out the Installation, start up, testing and commissioning of machine, its control system & all other supplies etc. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by Vendor in their foundation/layout drawings	Vendor			
16.2	Successful completion of performance tests shall also be part of commissioning tests.	Vendor			
16.3	Tools, Tackles, instruments and other necessary equipment including Laser equipment required to carry out Installation and commissioning activities should be arranged by the Vendor.	Vendor			
16.4	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought/ arranged by the Vendor.	Vendor			
16.5	if any paint on the machine has rubbed off or peeled during transit or Installation the area should be repainted and merged with the original surrounding paint by the . For this purpose, the Vendor should supply sufficient quantity of touch-up paint of various colours of paint used.	Vendor			

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16.6	Schedule of Installation and Commissioning shall be submitted with the offer.	Vendor			
17	ASSEMBLY AND TESTING AT VENDOR'S WORKS				
17.1	The machine shall be tested at supplier's works to the extent feasible. BHEL Engineers may witness the test of the machine at supplier's works.	Vendor			
17.2	Tests shall be performed to show that the machine meets the requirement of the specifications.	Vendor			
17.3	The Machine shall be dispatched only after acceptance of tests and clearance for dispatch in writing by BHEL	Vendor			
18	AMBIENT CONDITIONS & THERMAL STABILITY :				
18.1	The machine and all supplied items should work trouble free and efficiently under following operating conditions.	Vendor			
18.2	Ambient Conditions: Temperature = 5 to 45 degree Celsius	Vendor			
18.3	Relative Humidity = 95% max.	Vendor			
18.4	Altitude: 600 M above Mean Sea Level	Vendor			
18.5	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. Max. temperature variation is up to 25 deg Celsius in 24 hours.	Vendor			
18.6	Thermal Stability of the complete machine keeping in view specified Ambient Conditions and accuracy requirements of BHEL components and trouble free operation of the machine should be ensured by Vendor.	Vendor			
18.7	The machine, including attachments and accessories, should be suitable for 24 hrs. continuous operation with stoppages for planned maintenance schedules throughout the year.	Vendor			
19	PROVEOUT OF BHEL COMPONENTS :				
19.1	Sketch showing the various components likely to be deburred on the machine is attached. Proveout to be done on any two of the components to be specified by BHEL. Complete process of proveout components shall be done by the vendor at BHEL works to the specified design accuracy. Material for the proveout components shall be provided by BHEL. Vendor shall be fully responsible for proveout of the components as per drawing, speed of operation for various component and other requirements specified by BHEL to the full satisfaction of BHEL.	Vendor			
19.2	Vendor shall be responsible for any deviation/rejection in proveout component due to malfunctioning of the machine during proveout and also for the delay due to improper recommended processes etc.	Vendor			
20	MACHINE ACCEPTANCE: (Tests/Activities to be Performed by Vendor)				
20.1	Tests/Activities to be carried out at Vendor's works on the machine before dispatch :				
20.1.1	Demonstration of features of the machine, control system & accessories to the extent the machine is assembled at Vendor's works.	Vendor			
20.2	Tests/Activities to be carried out at BHEL works while commissioning the machine :				
20.2.1	Full load test to demonstrate the maximum capacity of the machine.	Vendor			
20.2.2	The machine should be tested for continuous working of 48 hrs. Including planned stoppages of machine. If any break down occurs during this test, the test should be repeated for 48 hrs from that time.	Vendor			
20.2.3	Demonstration of all features of the machine, control system & accessories to the satisfaction of BHEL for efficient and effective use of the machine	Vendor			
20.2.4	Two weeks supervision of independent operation of machine by BHEL after job proveout	Vendor			

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20.3	PERFORMANCE GUARANTEE				
20.3.1	The supplier shall guarantee the performance of the machine on continuous basis under shop floor working conditions for machine maximum operation speed, production out put and accuracy of burr removal.	Supplier to confirm			
21	PACKING:				
21.1	Sea worthy & rigid packing for all items of complete machine, control cabinets, all Accessories and other supplied items to avoid any damage/loss in transit shall be provided. When machine is dispatched in containers, all small loose items shall be suitably packed in boxes.	Vendor			
22	PAINTING:				
22.1	All the machine components shall be painted with high quality Polyurethane Paint. The paint shall have good protection against corrosion and high resistance against chemicals and oil.	Vendor			
22.2	Main Machine / Electrical panels: Apple Green RAL 6011	Vendor			
22.3	Safety equipment: Yellow	Vendor			
22.4	Operator console: Light gray	Vendor			
23	GUARANTEE :				
23.1	24 months from the date of acceptance of the machine.	Vendor			
24	GENERAL :				
24.1	Machine Model No.	Vendor			
24.2	Total connected load (KVA):	Vendor			
24.3	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor			
24.4	Total weight of the machine	Vendor			
24.5	Total air requirement of machine (flow rate and pressure)				
24.6	Weight of heaviest part of machine	Vendor			
24.7	Dimensions and weight of largest piece for shipment	Vendor			
24.8	Weight and Dimensions of the heaviest assembly / sub-assembly of the Machine	Vendor			
24.9	Dimensions and weight of heaviest piece for shipment	Vendor			
24.10	Vendor to submit, along with offer, reference list of customers where similar machines have been supplied mentioning broad specifications of the supplied machine i.e. Speed of operation, bed size, Load Capacity, etc	Vendor			
24.11	Drawing showing overall dimensions of the machine	Vendor			
24.12	Detailed catalogues , sketch/ photographs of the m/c and accessories/ attachments should be submitted with the offer.	Required			
24.13	Hydraulic, Pneumatic & oil piping should be preferably metallic except places where flexible piping are essential. All the pipes required for the same shall be included in the standard scope of the machine.	Vendor			
25	QUALIFICATION REQUIREMENT				

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25.1	Only those vendors who have been manufactured, supplied and commissioned at least One Deburring Machine of Similar or higher capacity and such machine is working satisfactorily as on date of opening of tender, should quote. Vendor to provide the performance report from the customer for satisfactory operation of Deburring Machine after one year of commissioning of machine at customers's site and machine is presently (as on the date of opening of tender) working satisfactorily.	Vendor to submit			
25.2	Name & Complete Postal address of customer to whom similar or higher capacity machine is supplied with Phone No., Fax No. & Email ID	Required			
25.3	Vendor to submit , along with offer, reference list of customers where similar machines have been supplied mentioning broad specifications of the supplied machine	Required			
25.4	Detailed catalogues , sketch/ photographs of the m/c and accessories/ attachments should be submitted with the offer.	Required			



For Tender Purpose Only

ITEM	OD	ID	No of Segments	No of Slots	Slot Width	Slot Depth	Sheet Thickness	A	B	C	Weight
	mm	mm			mm	mm	mm	mm	mm	mm	kg
1	2760	1237	9	54	28.00	240.90	0.65	943.98	423.08	798.90	2.48
2	2700	1185	10	60	25.10	266.00	0.65	834.35	366.19	786.50	2.13
3	2630	1330	12	48	48.00	160.00	0.50	680.69	344.23	672.66	1.18
4	2670	1215	9	54	29.50	227.50	0.50	913.19	415.55	764.14	1.75
5	2240	1004	6	66	20.00	192.50	0.50	1120.00	502.00	685.26	1.86
6	2100	1274	6	72	19.20	147.40	0.50	1050.00	637.00	498.34	1.27
7	1530	945	6	72	19.80	110.60	0.50	765.00	472.50	355.80	0.65
8	11700	10820	44	528	20.45	145.25	0.50	834.67	771.89	453.78	1.24
9	9380	8500	36	288	26.20	191.00	0.35	817.52	740.82	456.17	0.83
10	6340	5385	24	192	23.00	164.00	0.50	827.54	702.88	500.53	1.32

Rev: 00

Sketch No

Date of Issue:
08-Jun-06

CSU/STA/06