

# Specifications of 3-Axis CNC VMC for CSIR-CMERI-CoEFM Ludhiana

I Technical Specifications			
S. No	Specification	Units	Requirement
1.	Table Size (mention)	mm x mm	To be mentioned by bidder 1200x630 min.
2.	X-Axis traverse	mm	1000 or higher
3.	Y-Axis traverse	mm	600 or higher
4.	Z-Axis traverse	mm	600 or higher
5.	Max load on table	kgf	800 or higher
6.	Variable spindle speed	rpm	10000 min.
7.	Spindle Power	kW	15.0/10.0 (min)
8.	Rapid Traverse	m/min	24 or higher
9.	Positioning accuracy	mm	0.010 or better
10.	Repeatability	mm	0.005 or better
11.	Tool shank type		HSK 63A
12.	CNC Controller		Heidenhain /Fanuc / Siemens (latest version)
13.	Pneumatic line	bar	6 bar (preferable)
14.	ATC	Nos.	20 or more
15.	Max. tool length	mm	250 or higher
16.	Tool weight	kg	7 or higher
17.	Power Supply		415 V $\pm$ 10 % AC, 50 $\pm$ 2 % HZ, 3 phase
18.	Optical Glass Scale		Make, resolution etc. to be mentioned by bidder
19.	Data Interface facility by USB, Data card, Network for input output interface to be provided as standard.		
II Essential Accessories			

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	<ul style="list-style-type: none"> <li>• Reinshaw Touch Probe for job setting/inspection and related cycles</li> <li>• Chip conveyor with Chip tray (suitable to the machine)</li> <li>• Total Machine Guarding with Slide Door</li> <li>• Machine Lamp</li> <li>• Air Gun</li> <li>• Coolant System with tank, coolant equipment such as pump, piping, nozzles etc (suitable to the machine)</li> <li>• Air Conditioner for cooling control cabinet</li> <li>• CNC Console, Control Panel, Keypad, Buttons, LED displays, Emergency Stop etc.</li> </ul>
III	Other important features required
	<ul style="list-style-type: none"> <li>• Automatic centralized lubrication system</li> <li>• LM Guide ways in all axis</li> <li>• Controller of CNC system should be of latest version &amp; should be capable of controlling all 3 axis simultaneously</li> <li>• Structures and frames should be robust with compact structure and high quality stress relieved castings.</li> <li>• OEM to provide catalogue and drawings of the items offered</li> </ul>
IV	Documents to be supplied
	<p>Three sets of Hardcopies of following in English language and one set of soft copy in English:</p> <ul style="list-style-type: none"> <li>• Machine Test Charts and Reports</li> <li>• Foundation Plan and Foot Prints</li> <li>• Installation Manual, Operation, mechanical &amp; Maintenance Manual</li> <li>• Electrical/Electronic circuits diagrams, PLC diagrams etc.</li> <li>• CNC Programming Manual</li> <li>• Alarms and remedies manual</li> </ul>
V	Safety
	<ul style="list-style-type: none"> <li>• Safety Guards</li> <li>• Emergency Switch</li> <li>• All Drives and movements should have over shooting limits</li> <li>• Overload Limiter</li> <li>• <b>Safety Package for Power Failure</b></li> <li>• Built in Alarm description</li> </ul>
VI	Optional
	<ul style="list-style-type: none"> <li>• Tool Rack Cabinet</li> <li>• Tools Trolley</li> <li>• Maintenance Tool Kit</li> </ul>
VII	Pre-Dispatch Instructions
	<ul style="list-style-type: none"> <li>• Before dispatch of the machine at OEM's works, machining of standard test piece will be carried out by the OEM in the presence of CSIR-CMERI-CoEFM inspection team. All the tooling, work holding devices &amp; standard test piece will be supplied by the OEM at free of cost for machining of</li> </ul>

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	<p>above test piece.</p> <ul style="list-style-type: none"> <li>Machine Test Charts and Reports in accordance to ISO 10791 /VDI/DG 3441/ ANSI B5:54 / JIS B 6330-1980 to be submitted with test pieces.</li> </ul>
VIII	Installation and Commissioning of the machine
	<ul style="list-style-type: none"> <li>Installation, commissioning &amp; proving of the machine to its desired capacity and complete at CSIR-CMERI-CoEFM Ludhiana will be done by the OEM's engineer. Commissioning work including acceptance test/component trial will be carried out by the OEM's Expert.</li> <li>All on-site installation drawings to be given well in advance. Machine should be mounted on Pads.</li> <li>During commissioning at least 05 nos. of different test pieces will be produced on the machine and test pieces will be inspected for dimensional and geometrical tolerances at CSIR-CMERI-CoEFM Ludhiana.</li> <li>The commissioning will be treated as complete when we issue the certificate of acceptance. Installation, commissioning &amp; proving of the machine to its desired capacity and complete satisfaction</li> <li>Electrical requirements also to be clearly specified.</li> </ul>
IX	Training
	<p>The OEM shall have to provide onsite training to 3-5 persons exclusively for minimum seven working days in the field of programming, operation, maintenance (mechanical/hydraulic/electrical) etc.</p>
X	Warranty and Service
	<p>The complete machine must have comprehensive onsite warranty from the date of successful commissioning as per below period:</p> <p>a) Machine without controller: 12 months</p> <p>b) Control System: 24 months</p> <p><b>Service Backup Undertaking from OEM in original to be Submitted by Supplier for Machine, Drives Motors, Controller and Power source to provide service within Seven Days for Minimum Five Years.</b></p>
XI	Important Notes for Qualifying criterion in bidding
	<ul style="list-style-type: none"> <li>Vendors should provide in the technical document compliance sheet against the specification of CSIR-CMERI.</li> <li>Comments like yes, agreed, will be given at the time of supply, confirmed and will be completed ARE NOT ACCEPTABLE where numerical values are required to be quoted.</li> <li>The machine model being offered must be a standard latest model.</li> <li>Only Original Equipment Manufacturer or authorized suppliers/dealers should only quote. Copy of valid authorization letter should be enclosed along with the offer.</li> <li>The OEM/ vendor should have supplied at least 5 ( Five) numbers of offered Machines to any of the Govt. Agencies (Including R&amp;D Institutes/ Educational Institutes of national repute) and which are working satisfactorily. Documentary evidence to be provided.</li> <li>The vendor has to provide the performance certificate from the Govt. Agencies to</li> </ul>

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	whom offered machines supplied by HIM (along with the contact person's name, address and phone number), broad specification of the supplied machine & year of supply.
XII	Acceptance Criteria
	<ul style="list-style-type: none"> <li>• Checking of X,Y &amp; Z traverses and other machine features</li> <li>• Demonstration of operation of the machine.</li> <li>• Demonstration of all features of the CNC controller.</li> <li>• Testing the running condition of the machine.</li> <li>• Supplier will manufacture at least 01 no. test specimen (as per drawing supplied) on that same machine at CSIR-CMERI-CoEFM &amp; the test piece will be checked by CSIR-CMERI-CoEFM for dimensional accuracy.</li> </ul>

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