

**Enquiry for acquiring a three axis CNC vertical milling machine**

Enquiry Number: IITK/ME/ML/2016-17/VMC

Enquiry date: 13-02-2017

Closing date: 27-02-2017 (5 pm)

Sealed quotations (in two separate envelopes marked separately as "Technical Bid" and as 'Financial bid' are invited as per the specifications, and terms and conditions listed below.

Supply, installation and commissioning of a vertical CNC milling machine as per following specifications:

**Specifications:**

Sr. No.	Technical description	Specification
<b>1. Spindle</b>		
1a	Spindle power	15 kW (const.)/18.5 (30 min.) KW (min.)
1b	Spindle Torque	102 Nm (min.)
1c	Spindle speed	15000 rpm (min.)
1d	Spindle taper	HSK A-63
1e	Spindle bearing diameter	70 mm (min.)
1f	AC Variable Speed Spindle Motor (provide speed power characteristics)	Make: Fanuc
<b>2. Strokes and capacity</b>		
2a	Table Longitudinal Travel (X-Axis)	600 mm (min.)
2b	Table Cross Travel (Y-Axis)	510 mm (min.)
2c	Head Stock Travel (Z-Axis)	500 mm (min.)
2d	Spindle Nose Face to Table Top	175 - 675 mm
2e	Distance from Floor to Table	925 mm (min.)
2f	Spindle Centre – Column front Distance	560 mm (min.)
<b>3. Table</b>		
3a	Table size	1000 mm x 510 mm (min.)
3b	T – Slot (No./Size/Pitch)	5/18/100 mm (min.)
3c	Maximum Load on Table standard	500 kg (min.)
<b>4. Feed axes</b>		
4a	Feed Motor Torques for X, Y & Z axes	20 / 20 / 36 Nm (min.)
4b	Rapid Traverse X/Y/Z	40 / 40 / 32 meter/minute (min.)
4c	Feed rate	0 to 10,000 mm/minute (min.)
4d	Guide ways for all Axes	Linear Motion (Roller Type) (min.)
4e	AC Servo drives for all Axis	Make: Fanuc
<b>5. CNC control system</b>		
5a	Control	FANUC Oi-MF
5b	Display	8.4" LCD Display
5c	Spindle Speed Override	50% to 120% (in steps of 10%)
5d	Feed Override	0% to 200%
5e	DNC Operation	Ethernet / Pen drive
5f	Communication Port	USB / RS232

6. Accuracy as per ISO 230 – 2 or As per VDI / DGQ 3441		
6a	Positional accuracy for all axes	± 0.01 mm
6b	Repeatability for all axes	± 0.005 mm
7. Other features		
7a	All guide way protection with telescopic cover from coolant seepage.	Standard
7b	Spindle Taper Air Blow	Standard
7c	Rigid Tapping	Standard
7d	Leakage Free full Machine Guard	Standard
7e	Manual Pulse Generator	Standard
7f	Pneumatic pressure required	5 kgf /cm2 (min.)
7g	Maintenance Tool Kit	Standard
7h	Water and Coolant proof machine lamp	Standard
7i	Three tier indication lamp	Standard
7j	Standard work light	Standard
7k	Coolant tank and chip tray	Standard
7l	Chip disposal to the rear side of the machine through two chutes on the sides	Standard
7m	Refrigeration type Spindle Cooling	Standard
7n	Electronic Hand Wheel (MPG) for all axis	Standard
7o	Leveling pads for Machine	Standard
7p	Pneumatic supply required at Atmospheric Pr.	300 Imp (min.)
7q	Coolant Tank	300 liter (min.)
7r	Lubrication tank (useful quantity)	0.75 liter
7s	Panel Cooler (AC unit) for Electrical Cabinet	Standard
7t	Fail safe brake for Z-axis	Standard
7u	Flexible coupling for X, Y & Z axes	Standard
7v	Total Machine Enclosure	Standard
7w	Ball screw diameters	32 mm (min.)
7x	Ball screw stretching for X, Y & Z axes	Standard
7y	Ball screw supports	Ideally: fixed – fixed, else: fixed - supported
7z	Flood coolant around the spindle	Standard
7aa	Coolant Gun	Standard
7bb	Tool life management	Standard
7cc	Isolation transformer	Make: Consul. Rating: as required
7dd	Voltage stabilizer	Make: Consul. Rating: as required
7ee	Front auto door	Standard
7ff	Manuals	Standard
7gg	Total machine weight	7500 kg (max.)

**Terms and Conditions:**

- Maximum education discount, if any should be offered
- Validity of quotation should be at least for 60 days
- The price quoted should be for delivery at Kanpur.

- Terms and conditions for the payment, including the banker's name of the principal and the account number
- Proprietary certificate, if relevant, should be provided.
- Delivery must be within 16 weeks from issuance of purchase order/indent
- The institute reserves the right of accepting and rejecting any quotation without assigning any reason.
- The indenter reserves the right to cancel the tender without being answerable.
- The Technical Bid should contain detailed technical specification of the product being offered and should not mention any price.
- The Financial Bid should include the detailed price quotation clearly including the cost of the equipment, taxes, service charges if any, shipping and handling charges.

Kindly submit the Technical and Financial bids in two separate sealed envelopes addressed to:

Dr. Mohit Law  
Department of Mechanical Engineering  
Indian Institute of Technology Kanpur  
Kanpur 208016  
+91 512-679-6897 (O); +91 9717103329 (M)  
Email: [mLaw@iitk.ac.in](mailto:mLaw@iitk.ac.in)