



Department of Mechanical Engineering
Institute of Technology
Guru Ghasidas Vishwavidyalaya, Bilaspur(C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)
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No. -----/Mech. Engg./LTI/2013

Bilaspur, Date: -----

Limited Tender Enquiry

To,

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Subject:-Limited Tender Enquiry

Please quote your competitive rates for supply & installation of the articles as mentioned below in the prescribed Performa Annexure-1, in a sealed envelope so as to reach to the office of **HOD (Mechanical Engineering), Institute of Technology, GGV, Bilaspur(C.G.)** on or before **21/03/2013** through Speed post/Registered post/ Courier only.

1. TENDER SPECIFICATIONS FOR CNC TRAINER-CUM PRODUCTION LATHE WITH AUTOMATIC TOOL CHANGER (Quantity- One)

| Parameter | Specifications |
|-------------------------|---|
| Centre Height | 100mm min |
| Swing Over cross slide | 80 mm minimum |
| Distance between centre | 270 mm to 350 mm |
| Material to be machined | Mild Steel , Cast Iron, Aluminium , Brass |
| Traverse x axis | 80 mm |
| Traverse over Z axis | 250 mm |

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| Tool changer | Automatic Tool changer |
| Workpiece Diameter | 45 mm min..... |
| Main drive motor – Power | 3.0 Horse Power min. |
| Main drive motor – speed | 150 – 3000 RPM |
| Resolution of each axis | 1 micron each axis |
| Speed | Infinite variable from min. to maximum |
| Rapid Traverse | 5000 mm per minute |
| Feed Rate | 1 to 2000 mm/min |
| Cutting force X / Z | 900 / 1800 N |
| Position Accuracy X / Y / Z * | 10 micron maximum |
| RESOLUTION | 1 Micron |
| Lubrication system Main Spindle Guide ways and other areas | Automatic Lubrication system to be operated through Software |
| Safety devices needed | Fully enclosed working area. Limit switches for X and Z axes Emergency Off. Door Closure switch |
| CONTROL | Industrial Grade controller with 24 V DC Signal voltage.. |

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|-------------------------------------|---|
| Type of Control System | PLC Controller of Servodrives with Modbus communication Facility to PC. Controller Like Fanuc / Siemens / Hust etc |
| COMPLETE TRAINING MODULE | It must have complete CAD-CAM Solution & DNC facility namely; 1) 3D Model & 2D facility 2) CAD program from Industry should be machined on Trainer |
| CAD Software Linking facility | CAD Model linking facility from Autocad, Unigraphics, Proe, Catia and automatic NC code generation facility and it should be able to link with machine and designed component to be machined on Machine |
| Co-ordinate system | Cartesian Coordinate as well as Polar Co-ordinate programming facility to be provided. |
| Main Supply | Main supply required (stabilized), 230 volts, 1 phase, 50Hz |
| Machine Zero & Work Offset Facility | To be provided |
| Axes motors | standard make, ISO Certified: Servo-motor with Encoder Feedback |
| Machine Link | RS-232 link/ RS-485 and USB cable from PC to machine also DNC Link Facility to be provided |
| Software | Programming and operating software and manuals with courseware & project book |
| Coolant | Flood coolant system of capacity of 4 liters |
| Guard | Totally enclosed high visibility guard |

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| SAFETY SYSTEM | Emergency stop button |
| Axes Limit | Axes limit switches |
| Tool Path | Tool path graphics to verify program prior to machining through Offline Software |
| Job Scaling facility and canned cycles | To be provided |
| Control software features: | |
| Programming format PC Based Software | Programming format with Siemens and Fanuc and ISO codes Window Based PC Software and should work on Window –XP Platform .It must provide online 3D Graphics |
| Programming facilities | MDI Programming facilities |
| Interpolation | Full circular and linear interpolation |
| Programming units | Imperial / metric programming |
| Subprogram | Subprogram with repeat facility / program call |
| Machine Stop | Manual and programmable machine stops |
| SOFTWARE REQUIREMENTS For Programming | |
| A) Programming Requirement | Datum shift |
| | Program verification via dry run facility |
| | Tool and program offset can be saved to the disc. |
| | Program verification via dry run facility. |
| | Full G and M code listing with context |

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| | sensitive help. |
| | Single block or auto execution |
| | Block skip function |
| | Block search facility |
| | 2D and 3D simulation: dynamic zooming, color coding of tools, different move types-rapid /linear/arc distinguished by colours, user defined tool shapes and sectional views |
| | Comprehensive tool-path graphics including 2D &3D color simulation, tool-path plot and machining process simulation with tool animation |
| | Directory listing |
| | Program merging facility |
| | Automatic error checking with message |
| | continuous and incremental jog modes with variable feed rates. |
| | Screen axis display for distance to go values. |
| | Full edit mode allowing alters, delete, insert. |
| | Cycle start/hold |
| | Programmable dwell over travel limits and emergency stop |
| | Programmable spindle speed: 150-3000rpm |
| | Programmable federate:0-600mm/min |
| | Constant surface feed |
| | Simultaneous controlled X and Z axes |

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| | Diameter / radius programming |
| | Internal/external screw cutting |
| | Roughing and finishing cycles |
| | Canned turning cycles |
| | Tool offsets for 16 tools |
| | Incremental tool wear compensation |
| | Tool nose radius compensation |
| | Interface with CAD/CAM software |
| | Built in virtual micrometer |
| | Password protected machine parameters |
| PC Configuration: | |
| PC requirements | Multi Media PC - Processor: Intel P-IV,1.4 GHz, with HT technology, system bus 800 MHz FSB |
| | Cache: Intel Pentium 4 Processor 2.8 to 3.6 with 1MB L2 cache |
| | HDD: Seagate 80GB, 7200 RPM |
| | Graphic card |
| | Mother Board: INTEL 865 GBF original HT |
| | Graphics: On board graphics controller |
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| | Ports: 2USB 2.0 ports (one in Front panel of the cabinet), serial – one, |

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| | parallel – one |
| | Monitor: 15” color monitor |
| | Mouse: Optical scroll mouse PS/2 |
| | Keyboard: MM ADCOM / DARTPS/2 |
| | DRIVE CD ROM: 52X32X52X |
| | Ether-Net card: Integrated |
| | Drives for all the necessary hardware |
| CAD-CAM Software | CAD Model import facility and Automatic Code generation software to be provided alongwith machine |
| Trainer & Manual | <p>The successful tenderer shall provide sufficient on the job training at the tender’s own cost to at least two (2) nominated teachers for each school in system operations and routine maintenance of the equipment.</p> <ol style="list-style-type: none"> 1) User manual, 2) Operating Manual, 3) Maintainance Manual 4) Training Viedo CD |
| Miscellaneous: | |
| | Three days on job training at Institute |
| | Operating instruction & maintenance manual, electric circuit diagrams: 2 Sets |
| | Courseware & project book: 01 Set |
| | Set of maintenance tools & |

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| | necessary spare parts. 02 Sets |
| | Foundation, installation & commissioning at site |
| GUYRANTEE | One Year |

2. TENDER SPECIFICATIONS FOR CNC TRAINER CUM PRODUCTION MILLING MACHINE -WITH AUTOMATIC TOOL CHANGER(Quantity- One)

| Parameter | Specifications |
|-----------------------------|--|
| Traverse X, axis | 275 mm X axis minimum |
| Traverse Y axis | 180 mm Y axis minimum |
| Traverse Z axis | 250 mm Z axis minimum |
| Table Size : Length x Width | 600 x 225 mm minimum |
| Axis Control | Simultaneous Three axis control |
| Maximum table load | 80 Kg. min. |
| Tool changer | Automatic Tool Changer through Software |
| Tool dimensions : | As per ISO 30 standard |
| Automatic Tool Changer | Automatic 8 Station Tool Changer to be operated by Hydraulic Powerpack |
| Main Spindle motor – Power | 1.5 Horse Power min. |
| Main Spindle motor – speed | 150 – 3000 RPM |
| Resolution | 1 micron each axis |
| Speed | Infinite variable from min. to maximum |
| Rapid Traverse | 5000 mm per minute |

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|---|---|
| Feed Rate | 1 to 2000 mm/min |
| Cutting force X / Y / Z | 900 / 900/ 1200 N |
| Position Accuracy X / Y / Z * | 10 micron maximum |
| Lubrication system Main Spindle Guide ways and other areas | Automatic Lubrication system to be operated through Software |
| Safety devices needed | Fully enclosed working area. Limit switches for X and Z axes Emergency Off. Door Closure switch |
| CONTROL | Industrial Grade controller with 24 V DC Signal voltage.. |
| Type of Control System | PLC Controller of Servodrives with Modbus communication Facility to PC. Controller Like Fanuc / Siemens / Hust etc |
| COMPLETE TRAINING MODULE | It must have complete CAD-CAM Solution & DNC Facility namely; 1) 3D Model & 2D facility 2) CAD program from Industry should be machined on Trainer |
| CAD Software Linking facility | CAD Model linking facility from Autocad, Unigraphics, Proe, Catia and automatic NC code generation facility and it should be able to link with machine and designed component to be machined on Machine |
| Co-ordinate system | Cartesian Coordinate as well as Polar Co- |

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| | ordinate programming facility to be provided. |
| Main Supply | Main supply required (stabilized), 230 volts, 1 phase,50Hz |
| Material to be machined | Mild Steel , Cast Iron, Aluminium , Brass |
| Axes motors | standard make, ISO Certified: Servo-motor with Encoder Feedback |
| Machine Link | RS-232 link/ RS-485 and USB cable from PC to machine |
| Software | Programming and operating software and manuals with courseware & project book |
| Coolant | Flood coolant system of capacity of 4 liters |
| Guard | Totally enclosed high visibility guard |
| SAFETY SYSTEM | Emergency stop button |
| | Axes limit switches |
| Tool Path | Tool path graphics to verify program prior to machining |
| Job Scaling facility and canned cycles | To be provided |
| Control software features: | |
| Programming format | Programming format with Siemens and Fanuc and ISO codes |
| PC Based Software | Window Based PC Software and should work on Window –XP Platform .It must provide online 3D Graphics |
| Programming facilities | MDI Programming facilities |
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| | Full G and M code listing with context sensitive help. |
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| | 2D and 3D simulation: dynamic zooming, color coding of tools, different move types-rapid /linear/arc distinguished by colours, user defined tool shapes and sectional views |
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| | Programmable spindle speed: 150-3000rpm |
| | Programmable federate:0-600mm/min |
| | Constant surface feed |
| | Simultaneous controlled X and Z axes |
| | Diameter / radius programming |
| | Internal/external screw cutting |
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| | Ports: 2USB 2.0 ports (one in Front panel of the cabinet), serial – one, parallel – one |
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| CAD-CAM Software | CAD Model import facility and Automatic Code generation software to be provided alongwith machine |
| Training & Manual | The successful tenderer shall provide sufficient on the job training at the tender’s own cost to at least two (2) nominated teachers for each school in system operations and routine maintenance of the equipment. |

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| | 1) User manual, 2) Operating Manual, 3) Maintainance Manual 4) Training Viedo CD |
| Miscellaneous: | |
| | Three days on job training at Institute |
| | Operating instruction & maintenance manual, electric circuit diagrams: 2 Sets |
| | Courseware & project book: 01 Set |
| | Set of maintenance tools & necessary spare parts. 02 Sets |
| | Foundation, installation & commissioning at site |
| | Warranty: One Year |

General terms & conditions of the supply

1. The sealed quotation should be superscribed with “**Quotation for supply & installation of Minor Equipments (CNC Lathe & CNC milling m/c)**”.
2. **Quantity:** the quantity mentioned above is indicative and may increase or decrease at the time of placing purchase order.
3. Technical brochure/ leaflet etc of the quoted items should be submitted along with the quotation.
4. **Discount, if any:** special concession/discount applicable for educational institutions, if any, must be clearly mentioned at the time of submission of quotation.
5. **Excise duty exemption:** the university is exempted from Custom/Excise Duty by DSIR Govt. of India vide letter no.-TU/V/RG-CDE (710)/2010 dated 19-1-11. The exemption certificate of the same shall be issued by the University on demand.

6. If the item is under DGS&D rate contract, the quoted price should not be more than the DGS7D rate.
7. The rate should be quoted on F.O.R. University Campus, Koni, Bilaspur basis. No packing/forwarding charges will be paid extra.
8. The article must be delivered without any extra cost at the university and will also have to be installed free of cost.
9. **Validity of rate:** the quoted rate should be valid for a minimum period of 90days.
10. **Delivery period:** the article to be delivered & installed within 30days from the issue of purchase order.
11. **Liquidated Damages:** any delays in supplying the article from the stipulated date of delivery, will attract liquidated damages will be applicable at rate of 0.5% per week and limited to 10% maximum. The authority reserved the right to cancel the purchase order when LD accumulates to 10%
12. **Warranty:** one year comprehensive on-site warranty shall be applicable to the supplied goods for all manufacturing defects from the date of satisfactory installation, commissioning, demonstration and acceptance.
13. **Performance security:** the successful bidder must submit performance security of 5.0% of the ordered value, on the goods/services supplied irrespective of the origin, within fifteen days of issue of purchase order in form of Demand Draft/TDR/Bank Guarantee from any nationalized bank. Otherwise, the same amount will be deducted from the billed amount. On satisfactory completion of the warranty period of 1 year (12months), performance security will be released without any interest on demand.
14. **Payment:** 100% payment will be made after supply and installation of ordered quantity of article at our end in good condition. No advance or partial payment request will be entertained.
15. **CST/VAT:** will be paid extra, if applicable provided it is made clear in the quotation.
16. Unsealed quotations will be rejected and quotations must reach on or before the due date through Speed Post/Registered post/Courier only.
17. University reserves the right to accept or reject any quotation without assigning any reason thereof.
18. **No commitment to accept lowest or any bid:** University shall be under no obligation to accept the lowest or any other offer received in response to this tender notice and shall be entitled to reject any or all offers including those received late or incomplete offers without assigning any reason what so ever. University reserves the right to make any changes in the terms and conditions of the bid. University will not be obliged to meet and have discussion with any vendor, any or to listen to any representations.

HOD (Mech. Engg.)

Rates of Minor Equipments

Ref.:/Mech. Engg./LTI/2013 dated:

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| Description/Specification of the Minor Equipments | Qty. | Rate | Vat Taxes (if any) | Remark |
|--|-------------|-------------|---------------------------|---------------|
| 1. CNC TRAINER-CUM PRODUCTION LATHE WITH AUTOMATIC TOOL CHANGER | One | | | |
| 2. CNC TRAINER CUM PRODUCTION MILLING MACHINE -WITH AUTOMATIC TOOL CHANGER | One | | | |

Ideclare that the price will be valid for six months.

Date:

Signature and Seal of Tenderer

Mobile NO.: