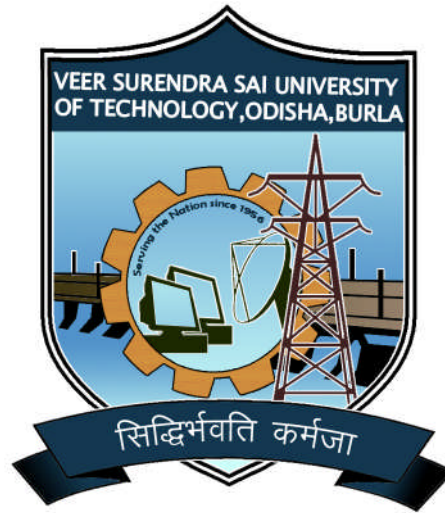


**VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, ORISSA, BURLA**  
(Formerly University College of Engineering, Burla)



**TENDER CALL DOCUMENT**

for

**SUPPLY, INSTALLATIONS AND TRAINING OF ROBOTS, CNC  
MACHINES, ACCESSORIES AND SOFTWARE**

---

**Department of Manufacturing Science & Engineering**

Tender Call Notice No. - VSSUT/MSE/183, Dated 27/02/2010

---

**VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, ORISSA, BURLA**  
(Formerly University College of Engineering, Burla)

---

Office of the Registrar  
PO.- EC Burla, Sambalpur  
768018

Notice No. VSSUT/MSE/183  
Dated: 27/02/2010

---

**Tender Call Notice**

The Registrar, Veer Surendra Sai University of Technology, Burla, (VSSUT) invites sealed tenders from Original Equipment manufacturer (OEM), authorized suppliers for supply, installations and training of Robots, CNC machines, accessories and software as per the specifications that are outlined in the tender document.

Office of issue	Office of the Registrar, VSSUT, Burla
Cost of Tender document	Rs. 500.00 (Rupees five hundred only)
Sale of Tender document	03-03-2010
Last Date and Time of Sale	15-03-2010, 04.00 PM
Last date for receipt of Tenders	20-03-2010
Date and Time of opening of Technical bids	22-03-2010, 04.00 PM
Date and Time of opening of Financial bids	Within a week after evaluation of the technical bid.
Demand Draft details	Drawn on any nationalized bank in favour of Veer Surendra Sai University of Technology, payable at SBI, Burla.

The tender document can be obtained from college cash counter on payment of Rs. 500/- in cash (Non-refundable). Also, the same can be downloaded from the college web site [www.vssut.ac.in](http://www.vssut.ac.in) (In this case a Demand Draft of Rs. 500/- drawn on any nationalized bank in favour of Veer Surendra Sai University of Technology, payable at SBI, Burla, is to be enclosed along with the tender else the tender submitted shall be summarily rejected.

The Registrar, VSSUT, Burla reserves the right to accept or reject any or all the tenders without assigning any reason thereof.

Registrar  
Veer Surendra Sai University of Technology, Burla

## General Instructions and Guidelines

The tenders, duly completed as per the guidelines, shall be addressed to “The Registrar, Veer Surendra Sai University of Technology, Burla, PO.- EC Burla, 768 018, Sambalpur, Orissa. The specifications as mentioned in the tender document shall be strictly followed for bidding in respect of each item.

### **Submission of Bids:**

The Tenders are to be submitted in two parts i.e. Technical Bid and Financial Bid. Technical Bid and Financial Bid are to be sealed separately and shall be put in one envelope. The envelope containing Technical Bid should be marked “Technical Bid – Supply, Installation and Training of Robots, CNC Machines, accessories and software”. The Technical bid provided should conform to the specification of the items as specified in the ‘Annexure- Technical Bid’.

Financial Bid to be given in a separate envelope and marked as “Financial Bid – Supply, Installation and Training of Robots, CNC Machines, accessories and software”. The financial bid must be submitted in the format given the ‘Annexure – Financial Bid’. Rates shall be quoted both in figures and words in English. If there is a discrepancy in the rates between the figures and words, the rates quoted in words shall be taken as correct for the purpose of evaluation.

The bids must be submitted by speed post or registered post or hand delivered in the office of the Registrar, so as to reach the Registrar, VSSUT, Burla, on or before the due date and time. The bids received after due date and time shall not be entertained.

### **Evaluation of Bids:**

The bids will be evaluated based on a 2 phased bidding

- The Technical Bids will be evaluated of those bidders meeting minimum eligibility criteria.
- The Technical bids of eligible bidders will be evaluated and ranked as per the criteria finalized by the designated committee.
- The Technically competent party (ies) will be called for price bid opening and further discussion.
- While, the financial bid will be very important criteria for finalizing the best fit criteria, the lowest bidder will not necessarily be awarded the order.

No amendment to the bids in any form by the bidder shall be permitted after the opening of bids.

The following documents must accompany the quotation offer:

- Latest VATCC / STCC and ITCC.
- Complete set of original quotation document and each page of the complete document shall be stamped and signed by the bidder’s authorized signatory.
- Copy of power of attorney for the authorized signatory.
- Full contact address with phone no. fax no. and e-mail.

## Bidders' Evaluation Criteria

### **Minimum Eligibility Criteria**

- The bidder must be an OEM or a Registered dealer.
- At least 3 nos. of each type of equipment as tendered type should have been supplied since last 3 years.
- Tender Participant should be an ISO 9000:2000 certified firm.
- Complete set of courseware should be submitted for evaluation.
- AMC for 3 years & ATC for 3 years (Each year individually) should be quoted.
- The Equipment should have been supplied to any reputed institutions like IIT's & NIT's etc.

### **Additional Evaluation Criteria**

- No. of technical institutes as past clients for tendered type equipment.
- No. of years in operations as regards to manufacture/supply of tendered type equipment.
- No. of technical personnel deployed in the state of Orissa.

## **Terms and Conditions (TC)**

### **1.0 Definitions**

In this project, the following terms shall be interpreted as indicated:

"The Goods" means all the equipment, machinery, and/or other materials, which the Supplier is required to supply to the Purchaser under the Purchase;

"Project" means supply, installation and training of equipment as mentioned in this document

"Services" means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other obligations of the Supplier covered under the purchase;

"The Purchaser" means,

The Registrar, Veer Surendra Sai University of Technology, Burla, Orissa, 768018

"The Supplier" means the individual or firm or consortium of firms supplying the Goods and Services under this Purchase.

"The Bidder" means the individual or firm or consortium of firms participating in the tender.

"The Project Site" means, Veer Surendra Sai University of Technology, Burla, Orissa, 768018

"Day" means calendar day.

### **2.0 Standards**

The Goods supplied under this project shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

### **3.0 Inspections and Tests**

The inspection of the Goods shall be carried out to check whether the Goods are in conformity with the technical specifications and terms and conditions mentioned herewith. Broad test procedure will generally be followed for inspection and testing of equipment. The supplier will dispatch the goods to the ultimate consignee after internal inspection testing along with the supplier's inspection report and manufacturer's warranty certificate.

The inspections and tests may be conducted on the premises of the Supplier, at point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier, all reasonable facilities and assistance, shall be provided to the inspector(s) at no charge to the Purchaser. Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.

The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at Project Site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.

Nothing in this shall, in any way, release the Supplier from any warranty or other obligations as indicated in this document.

#### **4.0 Packing**

The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in this document. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage.

Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

The Supplier will be required to make separate packages for each Consignee. Each package will be marked on three sides with proper paint/indelible ink, the following:

- Purchase Order No.
- Country of Origin of Goods
- Supplier's Name, and
- Packing list reference number.

#### **5.0 Delivery and Documents**

All the equipment are to be door delivered at the project site as per the terms and conditions within 30 days of the mutually agreed project plan. In case the supplier fails to deliver the goods within the due date period, the Registrar, Veer Surendra Sai University of Technology, Burla reserves the right to cancel the order and may place order with other firm without assigning any reason thereof.

Delivery of the Goods shall be made by the Supplier in accordance with the terms specified by the Purchaser in the purchase order. The supplier shall produce the following documents to the purchaser:

- Three Copies of the Supplier invoice showing Goods description, quantity, unit price, and total amount.
- Three copies of packing list identifying the contents of each package.
- Manufacturer's/Supplier's warranty certificate
- Certificate of Origin.

The above documents shall be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

#### **6.0 Spare Parts**

- The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:
- Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the purchase.

- In the event of termination of production of the spare parts, advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
- Supplier shall carry sufficient inventories to assure ex-stock supply of consumables and spares. Supplier shall ensure the availability of after sales service for a period of at least 96 months including the warranty period.

## **7.0 Prices**

The price quoted by the bidder shall indicate the base price, freight and packing charges and taxes separately. Any increase in taxes and other duties or levies after the date of placing purchase order shall be to the suppliers account. However, benefit of any decrease in taxes and duties or levies shall be passed to the purchaser.

The total prices and unit prices quoted shall be inclusive of freight, packing, forwarding and transit insurance charges for delivery at site.

Prices charged by the Supplier for Goods delivered and Services performed under the purchase shall not vary from the prices quoted by the Supplier in its bid.

## **8.0 Payment**

The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents upon fulfillment of other obligations stipulated in the purchase order.

90% of price of the total price shall be paid within 15 days after receipt of the material in good conditions and as per specifications and successful demonstration and training. The rest 10% of the total price shall be paid after 90 days of satisfactory performance from the final date of installation of all the equipment.

Payment shall be made in Indian Rupees through cheques drawn on SBI, Burla.

## **9.0 Delays in the Supplier's Performance**

Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser in the purchase order.

If at any time during performance of the project, the Supplier should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of the Contract.

## **10.0 Warranty and Maintenance Services**

The warranty period shall be 36 months for all the items procured under the project from the date of final installation. The software warranty shall be for a period of 12 months and shall cover removal of bugs and free upgrades available, if any, during the warranty period.

Upon receipt of any claim by the purchaser, the Supplier, within the one week shall repair or replace the defective goods or parts thereof, free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter.

If the Supplier, having been notified, fails to remedy the defect(s) within the specified period, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the project.

The maximum response time for maintenance complaint from any of the destinations specified in the Schedule of Requirements (i.e. time required for supplier's maintenance engineer to report at the installation after a request call/telegram is made or letter is written) shall not exceed 72 hours.

If after delivery, acceptance and installation and within the warranty period, the operation or use of the equipment proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such equipment until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.

#### **11.0 Incidental Services**

The following services shall be furnished and the cost shall be included in the total price:

- Performance of the on-site assembly, commissioning and start-up of the equipment.
- Furnishing the detailed operation and maintenance manuals for each item of supply.
- Training of the Purchaser's personnel at the Supplier's office or other facility, in the installation and operation of the hardware, utilities and all purchased software.
- Maintenance and repair of the equipment at each location during the warranty period including supply of all spares. This shall not relieve the supplier of any warranty obligations under this purchase.

#### **12.0 Taxes & duties**

The purchaser being a Government Technical University is eligible for availing exemption for the Excise duties and concession for the Customs duties. Relevant certificates and documents shall be furnished to the supplier to avail the benefit on total cost. The supplier must take care of the fact and quote accordingly.

#### **13.0 Liquidated Damages**

If the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the terms and conditions, the Purchaser shall, without prejudice to its other remedies under the project, deduct from the total Price, as liquidated damages, at the rate of 0.5% per week and maximum deduction is 5% of the delivered price of the delayed goods or unperformed services for each week or part thereof of delay until actual delivery or performance. Once the maximum is reached, the Purchaser may consider termination of the purchase.



#### **14.0 Termination for Default**

The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the purchase in whole or part:

- If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the purchase, or within any extension thereof granted by the Purchaser; or
- If the Supplier fails to perform any other obligation(s) under the purchase terms and conditions.
- If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this Clause:

- "Corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.
- "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.

In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the project to the extent not terminated.

#### **15.0 Force Majeure**

Notwithstanding the provisions of other relevant Clauses, the Supplier shall not be liable for liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the project is the result of an event of Force Majeure.

For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the project as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

#### **16.0 Settlement of Disputes**

If any dispute or difference of any kind whatsoever shall arise between the Purchaser and the Supplier in connection with or arising out of the purchase, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation..

If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the project.

Arbitration proceedings shall be conducted in accordance with the rules of procedure specified in the document.

Notwithstanding any reference to arbitration herein,

- The parties shall continue to perform their respective obligations under the project unless they otherwise agree; and
- The Purchaser shall pay the Supplier any monies due to the Supplier.

#### **17.0 Limitation of Liability**

Except in cases of criminal negligence or willful misconduct, and in the case of infringement,

The Supplier shall not be liable to the Purchaser, whether in project execution, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and

The aggregate liability of the Supplier to the Purchaser, whether under the project, in tort or otherwise, shall not exceed the total order price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

## TENDER FORM

To

The Registrar,  
Veer Surendra Sai University of Technology, Burla  
Po. EC Burla-768-018, Sambalpur, Orissa.

Subject: Tender for "Supply, installations and training of Robots, CNC machines, accessories and software".

Dear Sir,

Having examined the conditions of this tender call document I/we, undersigned, offer to supply, install and training of Robots, CNC machines, accessories and software as per the tender call notice.

I/We undertake to complete the delivery of all items and complete the installation and commissioning of all items within stipulated period as per the terms and conditions.

I/We understand that you are not bound to accept the lowest or any bid, you may receive.

I/We enclose all the sheets of this bid document duly signed by me on every page, as a token of having studied the specifications pertaining to this site and having accepted the same.

Certified that I/We have studied the full contents of the bid document and enclosures and agree to quote by the terms and conditions therein. In case of non-observance of any of the conditions mentioned in the quotation form, my/our bid may be cancelled.

Dated:

Signature of

In capacity of

Duly authorized to sign the quotation for and on behalf of -----

Name and Address of the authorized Signatory.....

Signature.....

Date .....

Signature and address of Witness 1:

Signature and address of Witness 2:

## BID FORMAT

### ANNEXURE: TECHNICAL BID

The bidders have to mention whether they meet the specifications or deviation if any w.r.t the mentioned specifications may be indicated in the remarks column.

#### MODULE-I

S/N	ITEM	TECHNICAL SPECIFICATIONS	REMARKS
1.0	<b>CNC SLANT BED LATHE WITH 8 STATION INDEXING TOOL POST AND FANUC EMULATED CONTROL</b>	<p>CNC Slant Bed Bench Turning Centre with Fanuc Emulated Control Programming and Industrial Fanuc Emulated Control Panel With advanced Digital graphics Simulation With Virtual onscreen of Fanuc series, driven by Direct Numerical Control from an external Micro Computer, programmed using ISO format, with facility for proving programs using Tool path graphics and the software which incorporates all major functions and facilities used on Industrial controller with further option of linking to CAD/CAM and FMS (Flexible Manufacturing System) and CIM system</p> <p>Control Type: PC Based 2 Axis continuous path,            Bed Design Type: 45 degree (Slant bed),            Swing over Bed: <math>\phi</math>150mm, Swing over Crossslide: <math>\phi</math>50mm,            Maximum turning Diameter/Length: <math>\phi</math>32mm/120mm,            Minimum Turning Diameter: 6mm, Maximum boring bar Diameter: 16mm, Tool Cross Section: 12 X 12,            Positioning Accuracy : +/- 0.015, Repeatability: 0.005,            Chuck size: <math>\phi</math>100mm, Cross Travel (X-axis): 80mm,            Longitudinal Travel (Z-axis): 180mm, Distance between centres: 210mm, Rapid Traverse Rate (X/Z axis in m/min): 1.2 m/min, Tailstock Base Stroke: 150mm,            Tailstroke Quill Stroke: 40mm, Quill Diameter: <math>\phi</math>26mm,            Tailstock Taper: MT2, Spindle Bore: 20mm, Spindle Nose Taper: MT3, Programmable Spindle speed: 150-3000 RPM,            Programmable Feed Rate: 0-1000 mm/min, Resolution: 0.001mm, Axis Motor (X and Z axis Motors - Stepper Motor): 400 Steps/Revolution, Spindle Motor: 4.5Amps 3000 RPM,            Spindle Encoder: 2000 ppr, Drives for SPINDLE: MARTIN FRANK, Drives for X and Z axis: Smart Step Controller Card,            Spindle Motor Capacity: 1 HP (746 W), Turret Programmable: 8 Station, Main Supply: 230V,Single Phase,50 Hz, Transformer for Controller: 12V and 28V AC,            Power supply: OMRAN 24V, 2.1Amps, Slides: Turcite "B" fitted, Bed: Casting, Lubrication: Single shot Manual System,            Machine Weight (Approx.): 150 Kg, Machine Dimensions (LxWxH) mm: 880x575x615 mm</p>	
1.a	<b>TOOLING PACKAGE</b>	<p>Set of 5 external turning carbide tool holders with inserts (1 No Turning &amp; Facing Tool holders, 3 Nos Copy Turning Tool Holder ( LH, RH, N), 1No. Threading Tool Holder - 1set            Set of 3 Internal boring carbide tool holders with inserts (2 boring bars + 1 Internal threading )            Centre drill dia shank dia 8mm            Twist Drill dia 6,8,10 &amp; 12mm            100mm Dia 3jaw self centering chuck</p>	
1.b	<b>ACCESSORIES FOR LATHE</b>	Pneumatic Chuck $\phi$ 110mm, Automatic door, Work Bench	

2.0	<b>LOADING UNLOADING ARM</b>	Type: PNEUMATIC ACTUATED MANIPULATOR WITH GRIPPER Number of axes-2, Axis 1 (Shoulder Movement): Rotary (0 - 150 deg), combined with 90 deg rotation of the wrist. Axis 2 (Component insertion): Chuck/Paller (25 mm), Handling capacity: 100 gms, Gripper (Rack and pinion angular gripper): ø16 mm, Controls: Additional I/Os of Machine Controller	
3.0	<b>WORKSPACE SOFTWARE</b>	Version 5.X Single user license with following features. Solid Simulation of Industrial Robots with 20 industrial Robot model library and teach pendent programming 10 offline programming language Design and simulation of own Robot or work cell. Import of Robot models designed in other packages like Auto CAD. Fast shaded animations in 256 colours. Quickly model new workcell layouts and evaluate their performance. Communication with design concept using state-of-the-art 3D graphics. Detection of collisions. Generation of robot programs off-line using a mouse driven menu system. Optimize programming using high-level workspace functions. Downloading of programs directly to the robot without the need for post – processing. Automotive manufacturing Sophisticated 3D CAD system featuring constructive solid geometry. High resolution 3D rendering Advanced robot languages. Off-line programming. Friendly, mouse-driven user interface. DXF CAD import facility. Robot and workcell calibration. Kinematic and inverse kinematic modeller. Computer aided learning (CAL) sub-system. Usercall linking of C and Pascal routines.	

## MODULE-II

S/N	ITEM	TECHNICAL SPECIFICATIONS	REMARKS
1.0	<b>CNC MILLING MACHINE-FANUC EMULATED CONTROL</b>	<p>A 3 Axes CNC Bench Milling Machine with Fanuc Emulated Control Programming Software and Industrial Fanuc Emulated Control Panel With advanced Digital graphics Simulation With Virtual onscreen of Fanuc series, driven by Direct Numerical Control from an external Micro Computer, programmed using ISO format, with facility for proving programs using Tool path graphics and the software which incorporates all major functions and facilities used on Industrial controller with further option of linking to CAD/CAM and FMS (Flexible Manufacturing System).and CIM system.</p> <p>CNC: PC Based 3 Axis continuous path, Table Size: 360 mm X 132 mm, Travel X axis: 225mm, Travel Y axis: 150mm, Travel Z axis: 115mm, Spindle to Table Distance: 70mm to 185mm, Spindle Column: 110mm, Spindle Nose Taper: ISO 30, ATC: 6 STATION, ATC Motor: 230 V AC reversible, ATC - Maximum tool diameter: <math>\phi</math>16mm</p> <p>ATC - Maximum tool length: 40mm, ATC DIRECTION: Bi-direction, Programmable Spindle speed: 150-4000 R.P.M, Programmable Feed Rate: <math>\square</math> X and Y axis: 0 - 500 mm/min, <math>\square</math> Z axis: 0 - 500 mm/min, Drives for X,Y&amp; Z: Next move card, Drives for Spindle: MARTIN FRANK, Transformer for Controller: 12V and 28V AC, Repeatability: 0.005mm, Positional Accuracy: <math>\pm</math> 0.010mm, Rapid Rate (X, Y and Z axis): 1.2 M/min, Spindle Motor Capacity: 0.5 HP 180V DC 4Amps 4000 RPM, Axis Motors X , Y , &amp; Z (Stepper motor): 400 Steps/rev, Main Supply: 230V,Single Phase,50 Hz, slides: Turcite "B" fitted, Bed: Casted, Lubrication: Single shot Manual System, Machine Weight (Approx.): 170 Kg, Machine Dimentions (LxWxH) mm., 1000x575x650 mm</p>	
1.a	<b>TOOLING PACKAGE</b>	<p>1 No. Collet Chuck BT30/A45 RD25 with Pull Stud            1 No. Collet Chuck BT 30/A45 RD16 with Pull Stud            RD25 Collets Dia 5, 6, 8, 10, 12, 16mm (each 1 No.)            RD16 Collets Dia 3, 4,5mm (each 1 No.)            2 lipped carbide slot mill for facing shank dia 16mm            Clamping kit set            Set of HSS End Mills Dia 5, 6, 6, 6, 8 mm (each 1 No.)            Set of HSS End Mills Dia 10, 12, 16mm (each 1 No.)            HSS Slot Drills Dia 5, 6, 6, 6, 8mm (each 1 No)            HSS Slot Drills Dia 10, 12, 16mm (each 1 No.)            Machine Vice Width - 75mm, opening 90mm</p>	
1.b	<b>ACCESSORIES FOR MILL</b>	<p>ATC - 6 Station , Hydro Pneumatic Vice            Automatic Door, Work bench</p>	
2.0	<b>LIINEAR SHUTTLE CONVEYOR</b>	<p>Fixed path transportation of material between stations, Micro-controller based, FMS/CIM integration compatible            Overall length: 2.0-2.7m            Travel length: 1.7m            Height of platform from floor level: 800 mm:+ 20 mm            Load carrying capacity: 4-6 kgs            Speed: 5 m/min</p>	

**MODULE-III**

S/N	ITEM	TECHNICAL SPECIFICATIONS	REMARKS
1.0	<b>VERTICALLY ARTICULATED ROBOT</b>	<p>Configuration- Vertical Articulated Five-bar linkage, No. of Axes- 6(3 axes waist-shoulder-elbow manipulator with 3 axes Roll- Pitch- Roll spherical wrist), Link 1- 300 mm, Link 2- 300 mm, Vertical Height- 400mm (450mm with controller box), Payload: 2.5 Kg,, Tip Speed: 0.2 meters/sec, Repeatability: + / - 0.3mm, Joint Actuators- DC Servo geared motor, Transmission Joint1- Worm Wheel Drive, Joint 2 &amp; 3 : Ball screw, Joint 4,5 &amp; 6 : Belt Drive, Gravity Compensation 100% (Non-back drivable ball screw, Position Feedback- Optical Encoder, Gripper- Pneumatic, Joint Motion Manipulator: Waist - 300 degrees, Shoulder- 60 degrees, Elbow- 60 degrees, Wrist: Roll- 330 degrees, Pitch- 180 degrees, Roll- 330 degrees, Controller / Software: PC base, PID Control algorithm, Support for 2 additional axes excluding gripper, Sensors (Manipulator): Datum Home sensors for each axis and software limits, Proximity home sensors, Control Software: Specially developed Robot Programming Language, Teaching: Off-line, Joint-space programming, Co-ordinate space programming, Path Type: Point-to-point, Linear &amp; Circular Interpolation path, Communication: PC parallel port, Accessories &amp; Input / Output -3 servo axis each with 3 digital inputs and one output, 6 digital Inputs/Outputs, Power Supply: 230 V AC, 50/60 Hz(+5V @ 25A, /2V @ 8A), Servo Stabilizer – 2KVA, Compressor 100 ltr. Tank capacity,8-10 bar (80-100)PSI</p>	
2.0	<b>AUTOMATIC STORAGE &amp; RETRIEVAL SYSTEM</b>	<p>Mounting: Stand-alone floor mounted system, Frame: Frame is built aesthetically using natural anodized aluminium profiles, Platform: The platform is traversed in X &amp; Y axes by belt &amp; AC servo motors and controlled by PIC controller, Guides: LM Guides, No. of storage cells: 18 (6 rows x 3 column), Transfer Station: Transfer station will be provided to accept the pallet from ASRS platform or the conveyor or AGV. The transfer height is adjustable according to the height of the conveyor or AGV or Linear Slide, Controller: PIC controller, Interfacing facility should be available, Depth: 1300mm, Height: 1500mm, Load Carrying: 2kg , Travel Z Axis- 195mm, (Hor) Y axis- 840mm, (Ver) X Axis- 950mm, Digital Input: 8, Output: 8</p>	

**Dated:**  
**Place:**

**Signature**  
**Quotationer /**  
**Authorized Representative with Seal**

*Note: Attach extra sheets if necessary.*

**MODULE-I**

<b>S/N</b>	<b>ITEM</b>	<b>QUANTITY</b>	<b>PRICE</b>	<b>REMARKS</b>
1.0	<b>CNC Slant Bed Lathe with 8 Station Indexing Tool Post and FANUC emulated Control</b>	<b>1 No.</b>	<b>Base Price:</b>	
1.a	<b>TOOLING PACKAGE</b>	<b>1 Set</b>	<b>Freight &amp; packing Charges:</b>	
1.b	<b>ACCESSORIES FOR LATHE</b>	<b>1 Set</b>	<b>Taxes:</b>  <b>TOTAL:</b>	
2.0	<b>LOADING UNLOADING ARM</b>	<b>1 No.</b>	<b>Base Price:</b>  <b>Freight &amp; packing Charges:</b>  <b>Taxes:</b>  <b>TOTAL:</b>	
3.0	<b>WORKSPACE SOFTWARE</b>	<b>1 No.</b>	<b>Base Price:</b>  <b>Freight &amp; packing Charges:</b>  <b>Taxes:</b>  <b>TOTAL:</b>	



**MODULE-II**

<b>S/N</b>	<b>ITEM</b>	<b>QUANTITY</b>	<b>PRICE</b>	<b>REMARKS</b>
1.0	<b>CNC Milling Machine- FANUC emulated Control</b>	<b>1 No.</b>	<b>Base Price:</b>	
1.a	<b>TOOLING PACKAGE</b>	<b>1 Set</b>		
1.b	<b>ACCESSORIES FOR MILL</b>	<b>1 Set</b>	<b>Freight &amp; packing Charges:</b>  <b>Taxes:</b>  <b>TOTAL:</b>	
2.0	<b>LIINEAR SHUTTLE CONVEYOR</b>	<b>1 No.</b>	<b>Base Price:</b>  <b>Freight &amp; packing Charges:</b>  <b>Taxes:</b>  <b>TOTAL:</b>	

**MODULE-III**

<b>S/N</b>	<b>ITEM</b>	<b>QUANTITY</b>	<b>PRICE</b>	<b>REMARKS</b>
1.0	<b>VERTICALLY ARTICULATED ROBOT</b>	<b>1 No.</b>	<b>Base Price:</b>  <b>Freight &amp; packing Charges:</b>  <b>Taxes:</b>  <b>TOTAL:</b>	
2.0	<b>AUTOMATIC STORAGE &amp; RETRIEVAL SYSTEM</b>	<b>1 No.</b>	<b>Base Price:</b>  <b>Freight &amp; packing Charges:</b>  <b>Taxes:</b>  <b>TOTAL:</b>	

**Dated:**

**Place:**

**Signature**

**Quotationer /**

**Authorized Representative with Seal**