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| **institute** | **JAWAHARLAL NEHRU GOVERNMENT ENGINEERING COLLEGE SUNDERNAGAR DISTT. MANDI (HP)** |

**INVITATION LETTER**

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| **Package Code: TEQIP-III/2020/HP/jnge/119** | **Current Date: 30-Jan-2020** |
| **Package Name: JNGEC/ME/Automation and Robotics/2020** | **Method: Shopping Goods** |

**Sub: INVITATION LETTER FOR JNGEC/ME/Automation and Robotics/2020**

Dear Sir,

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| **1.** | You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I, |

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| **Sr. No** | **Item Name** | **Quantity** | **Place of Delivery** | **Installation Requirement (if any)** |
| 1 | Robotic based Production System (Specifications as per Annexure-I) | 1 | Robotics Lab, Mechanical Engineering, JNGEC Sundernagar | YES |

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| **2.** | Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued. |
| **3.** | **Quotation** |
|  | 3.1 | The contract shall be for the full quantity as described above. |
|  | 3.2 | Corrections, if any, shall be made by crossing out, initialling, dating and re writing. |
|  | 3.3 | All duties and other levies payable by the supplier under the contract shall be included in the unit Price. |
|  | 3.4 | Applicable taxes shall be quoted separately for all items. |
|  | 3.5 | The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account. |
|  | 3.6 | The Prices should be quoted in Indian Rupees only. |
| **4.** | Each bidder shall submit only one quotation. |
| **5.** | Quotation shall remain valid for a period not less than **90 days** after the last date of quotation submission. |
| **6.** | Evaluation of Quotations: The Purchaser will evaluate and compare the quotations determined to be Substantially responsive i.e. which |
|  | 6.1 | are properly signed; and |
|  | 6.2 | Confirm to the terms and conditions, and specifications. |
| **7.** | The Quotations would be evaluated for all items together. |
| **8.** | Award of contract The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price. |
|  | 8.1 | Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of Contract. |
|  | 8.2 | The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be Incorporated in the purchase order. |
| **9.** | Payment shall be made in Indian Rupees as follows: |
|  |  |  | **Delivery and Installation - 90% of total costSatisfactory Acceptance - 10% of total cost** |
| **10.** | Liquidated Damages (L.D): If a supplier fails to execute the order in time as per the terms and conditions stipulated therein, it will be open to the purchaser to recover liquidated damages for delay in delivery and installation from the supplier at the rate 0.5% of the value of the order per week subject to a maximum of 10% of the total order value. The L.D charges can be increased in case of gross violation of the Purchase Order terms as decided by the Principal of the Institute. |
| **11.** | All supplied items are under warranty of **36** months from the date of successful acceptance of items and AMC/Others is **N.A.** |
| **12.** | You are requested to provide your offer latest by **12:00** hours on **28-FEB-2020.** |
| **13.** | Detailed specifications of the items are at Annexure I. |
| **14.** | Training Clause (if any) **yes** |
| **15.** | Testing/Installation Clause (if any) **yes** |
| **16.** | **Performance Security:** The supplier shall require to submit the performance security in the form of irrevocable bank guarantee issued by any Nationalized /Commercial bank for an amount of **5%** of the Invoice value within 45 days from the date of receipt of the purchase order/LC and should be kept valid for a period of 60 days beyond the date of completion of warranty period. |
| **17.** | Information brochures/Product catalogue must be accompanied with the quotation clearly indicating the model quoted for. **Manufacture’s authorization/OEM certificate** must be attached. |
| **18.** | Sealed quotation to be submitted/ delivered at the address mentioned below, **Jawaharlal Nehru Government Engineering College Sundernagar, DISTT. MANDI (HP).** |
| **19.** | The offer/bid should be submitted in one bid system as per the format mentioned in Annexure- II.  |
| **20.** | Bid Format: The bid comprising of following documents should be sealed in envelope mentioning **Bid for “Package Name”** on top of the envelope. The envelope must mention package no. and name. |
| **21.** | Bid must include: 1.) A compliance list against the technical specifications as per Annexure-I should be provided.2.) The Bid should be submitted as per the bid format. (Annexure-II)3.) Proof of Registration of the bidder.4.) Copies of PAN Card and GST registration no.5.) Signed copy of the tender document, with company seal, agreeing to the terms & conditions must be submitted.6.) It should indicate item wise price for the items mentioned in the bid as per the format (Annexure-III).7.) **The price quoted should be F.O.R JNGEC Sundernagar (specified location as indicated by authority).**8.) All duties and other levies payable by the supplier under the contract shall be included in the unit price.9.) The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.10.) All duties and other levies payable by the supplier under the contract shall be included in the unit price.11.) The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.12.) The Prices should be quoted in Indian Rupees only.All documentary proof must be listed on the letterhead of the company. |
| **23.** | **Opening of Bids:** Bids will be opened on the last date of receipt of the quotations at 3P.M. in presence of Purchase Committee members and representatives of the vendors (if any). |
| **24.** | Tenderer or his/her authorized representative (with proper authorization letter for opening of bids) may choose to be present at the time of opening of Bids. |
| **25.** | **The Institute reserves the right to reject any bid not fulfilling the eligibility criteria** |
| **26.** | **Supply of Items:** Free of cost at JNGEC Sundernagar by the vendor |
| **27.**  | **IMPORTANT:**1. A bid submitted with false information will not only be rejected but also the OEM/vendor will be debarred from participation in future tendering process.
2. Each bidder shall submit only one quotation
3. In case of any dispute, the decision of the Principal of this Institute shall be final and binding on the bidders.
4. In case the due date for submission of the tender happens to be a holiday, the same will be accepted on the next working day.
5. The Authority of JNGEC Sundernagar reserves the right to reject any or the entire tender bids received without assigning any reason thereof.
6. Bidder should submit the tender document, duly signed and stamped on every page in token of accepted all the terms and conditions of the tender.
7. The institute does not bind itself to offer any explanation to those bidders whose bids have not been found acceptable by the evaluation committee of the institution.
8. The bids once submitted will be the property of the institute.
9. Declaration and Authorisation form to be attached with Quotation as per Annexure IV and Annexure-V.
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| **28.** | **We look forward to receiving your quotation and thank you for your interest in this project.** |
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(Authorized Signatory)

DIRECTOR/PRINCIPAL

**Annexure-I**

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| **Specifications of Robotic Based Production System** |
| **Sr. No.** | **Name** | **Description** |
| **1.** | **Modular Manufacturing System (MMS)** | MMS shall be capable of demonstrating industry processes such as feeder, inspection, buffer, process and sorting  |
| Feeder station should feed the work piece to the inspection station  |
| The inspection station, in which the height of the work piece is to be measured and only approved work pieces are to be further allowed to the buffer station  |
| The buffer station should allow the work pieces one by one to the process station based on the demand receives from the process station  |
| The process station should perform the drilling operation and transfer the work piece to the sorting station  |
| The sorting station should segregate the work pieces based on the material type and colour  |
| **2.** | **Feeder Station** | **Horizontal Aluminium Profile Table**a. L x W x H: 540 mm x 640 mm x 790 mm b. Aluminium Profile: Table Top Profile: 40 mm x 160 mm, Supporting Profile: 40 mm x 40 mm c. Grid Spacing (from slot to slot): 40 mm d. Profile Groove Width: 8.3 mm e. Levelling casters for quick setting and smooth movement f. Profile Plate Connectors: length 55 mm, thickness 5 mm, mounting method M6 socket head screw with M6 hammer head nut |
| **I/O Interface Module**a. 25 Pin D-Sub connector interface board for interfacing valves and actuators b. 25 Pin D-Sub cable for transferring the I/O to the terminals which in turn are to be connected to PLC |
| **Valve Manifold**a. L x W x H : 60 mm x 26.5 mm x 65 mm b. Grid Spacing: 19 mm c. Mountable Valve Port Size: 1/8’’ d. Provided with conical silencers for reducing the dB level of exhausted air e. 5/2 Double Solenoid Pilot Operated Valve: Material: Extruded aluminium with anodized finish, Size: 1/8’’, Design: Spool Type, Pressure Range: 2 to 10 bar, Flow Rate: 450 L / min, Manual Override: Resetting, Fitted with 1/8’’ flow control valve for varying the flow  |
|  |  | **Filter Regulator Combination with Lubricator (FRL Unit) with Pressure Gauge and Start Up Valve**

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| a. Port Size: 1/4 inch  |
| b. Flow Rate: 500 L/min  |
| c. Maximum Supply Pressure: 10 bar  |
| d. Operating Pressure: 6 bar  |
| e. Filtering Element Grade: 40 μm  |
| f. Minimum Operating Flow: 12 L/min  |
| g. Filter Bowl capacity: 9 ml  |
| h. Lubricator Bowl Capacity: 20 ml  |
| i. Connection for tube 8 dia input and 8 dia output  |
| j. Mounting: Socket head cap screw with M6 hammer head nut  |

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| **Stack Magazine Module** |
| a. Comprising of Miniature cylinder of dia 25 and stroke 80 mm  |
| Height: 516 mm, Width: 125 mm and Length: 390 mm  |
| b. Magnetic sensor for position sensing  |

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| **Light Barrier Module** |
| a. Type: Infra-Red  |
| b. Sensing Range: 2 m c. Supply Voltage and Current: 10 to 30 V DC (10% max. ripple) @ 20 mA max current, Switch Output: PNP, normally open/normally closed contactd. Output Protection: Protected against false pulse on closed contact power-up, short-circuit protected |

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| **Transfer Module** |
| a. Cylinder rotation angle (rotary cylinder fitted with shock absorbers),180 degrees (freely selectable)  |
| b. Compact guided cylinder dia 40 mm, Stroke: 50 mm  |
| c. Height: 325.5 mm, Width: 127 mm, Length: 223 mm  |
| d. Vacuum gripper module capable of handling 100 gm  |
| e. Magnetic sensor for position sensing  |

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| **Control Console** |
| a. Cycle Start Push Button: Green with illuminated  |
| b. Auto /Manual Selector Switch: Black  |
| c. Home Position Push Button: Red with illuminated  |
| d. Emergency Button: Red  |

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| **Cable Duct and Accessories** |
| a. Wire Duct Size: 45 mm x 25 mm |
| b. Fastening Screws  |

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| **Work Piece Set** |
| Contains 18 approved work pieces of diameter 40 mm and height 25 mm, 6 rejected work pieces of diameter 40 mm and height 23.5 in every material made of Aluminum, Delrin and Hylum respectively |

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| **PLC Control Panel with S7 1200 PLC**  |
| a. Power Supply: Input voltage: 230/115 V AC (47-63 Hz), Output Voltage: 24 V DC, Short-Circuit-Proof, Output Current: Maximum 3A  |
| b. Miniature circuit breaker DC voltage with max. 5A current rating  |
| c. Digital Inputs 14, Digital outputs 10, Analog Inputs 2 Ethernet Interface 1 x TCP/IP, 10 Mbit/s  |
| d. Terminal Blocks  |
| e. 25 pin D-sub I/O data cable length 1.5 m, wire used 0.25 mm2  |
| f. Cable Ducts  |
| g. Power Connection Cable: 3 pin plug with length of 1.3 m  |

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| **3.** | **Inspection Station** | **Horizontal Aluminium Profile Table**a. L x W x H: 540 mm x 640 mm x 790 mm b. Aluminium Profile: Table Top Profile: 40 mm x 160 mm, Supporting Profile: 40 mm x 40 mm c. Grid Spacing (from slot to slot): 40 mm d. Profile Groove Width: 8.3 mm e. Levelling casters for quick setting and smooth movement f. Profile Plate Connectors: length 55 mm, thickness 5 mm, mounting method M6 socket head screw with M6 hammer head nut |
| **I/O Interface Module**a. 25 Pin D-Sub connector interface board for interfacing valves and actuators b. 25 Pin D-Sub cable for transferring the I/O to the terminals which in turn are to be connected to PLC |
| **Valve Manifold**a. L x W x H : 60 mm x 26.5 mm x 65 mm b. Grid Spacing: 19 mm c. Mountable Valve Port Size: 1/8’’ d. Provided with conical silencers for reducing the dB level of exhausted air e. 5/2 Double Solenoid Pilot Operated Valve: Material: Extruded aluminium with anodized finish, Size: 1/8’’, Design: Spool Type, Pressure Range: 2 to 10 bar, Flow Rate: 450 L / min, Manual Override: Resetting, Fitted with 1/8’’ flow control valve for varying the flow  |
| **Filter Regulator Combination with Lubricator (FRL Unit) with Pressure Gauge and Start Up Valve**

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| a. Port Size: 1/4 inch  |
| b. Flow Rate: 500 L/min  |
| c. Maximum Supply Pressure: 10 bar  |
| d. Operating Pressure: 6 bar  |
| e. Filtering Element Grade: 40 μm  |
| f. Minimum Operating Flow: 12 L/min  |
| g. Filter Bowl capacity: 9 ml  |
| h. Lubricator Bowl Capacity: 20 ml  |
| i. Connection for tube 8 dia input and 8 dia output  |
| j. Mounting: Socket head cap screw with M6 hammer head nut  |

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| **Measuring Module** |
| a. Pneumatic Linear Drive of dia 25mm and Stroke 100 mm  |
| b. LVDT with Signal Conditioner:  |
| Maximum permissible applied voltage: 42V  |
| Output: 4 to 20 mA  |
| Overall Length: 94.4 mm  |
| c. Diffuse Sensor  |
| Type: Infra red  |
| Sensing range: 15mm  |
| Supply Voltage and Current: 10 to 30 V DC (10% max. ripple) @ 20 mA max. current  |
| Switch output: PNP, normally open/normally closed contact  |
| Output Protection: Protected against false pulse on power-up, short-circuit protected, Approve and Rejection Slide Module |

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| **Control Console** |
| a. Cycle Start Push Button: Green with illuminated  |
| b. Auto /Manual Selector Switch: Black  |
| c. Home Position Push Button: Red with illuminated  |
| d. Emergency Button: Red  |

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| **Cable Duct and Accessories**  |  |
| a. Wire Duct Size: 45 mm x 25 mm  |  |
| b. Fastening Screws  |  |

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| **PLC Control Panel with S7 1200 PLC**  |
| a. Power Supply: Input voltage: 230/115 V AC (47-63 Hz), Output Voltage: 24 V DC, Short-Circuit-Proof, Output Current: Maximum 3A  |
| b. Miniature circuit breaker DC voltage with max. 5A current rating  |
| c. Digital Inputs 14, Digital outputs 10, Analog Inputs 2 Ethernet Interface 1 x TCP/IP, 10 Mbit/s  |
| d. Analogue Module: Analogue Input (4-20 mA)e. Terminal Blocks  |
| f. 25 pin D-sub I/O data cable length 1.5 m, wire used 0.25 mm2  |
| g Cable Ducts  |
| h. Power Connection Cable: 3 pin plug with length of 1.3 m  |

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| **4.** | **Buffer Station** | **Horizontal Aluminium Profile Table**a. L x W x H: 540 mm x 640 mm x 790 mm b. Aluminium Profile: Table Top Profile: 40 mm x 160 mm, Supporting Profile: 40 mm x 40 mm c. Grid Spacing (from slot to slot): 40 mm d. Profile Groove Width: 8.3 mm e. Levelling casters for quick setting and smooth movement f. Profile Plate Connectors: length 55 mm, thickness 5 mm, mounting method M6 socket head screw with M6 hammer head nut |
| **I/O Interface Module**a. 25 Pin D-Sub connector interface board for interfacing valves and actuators b. 25 Pin D-Sub cable for transferring the I/O to the terminals which in turn are to be connected to PLC |
|  |  | **Valve Manifold**a. L x W x H : 60 mm x 26.5 mm x 65 mm b. Grid Spacing: 19 mm c. Mountable Valve Port Size: 1/8’’ d. Provided with conical silencers for reducing the dB level of exhausted air e. 5/2 Double Solenoid Pilot Operated Valve: Material: Extruded aluminium with anodized finish, Size: 1/8’’, Design: Spool Type, Pressure Range: 2 to 10 bar, Flow Rate: 450 L/min, Manual Override: Resetting, Fitted with 1/8’’ flow control valve for varying the flow |
| **Filter Regulator Combination with Lubricator (FRL Unit) with Pressure Gauge and Start Up Valve**

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| a. Port Size: 1/4 inch  |
| b. Flow Rate: 500 L/min  |
| c. Maximum Supply Pressure: 10 bar  |
| d. Operating Pressure: 6 bar  |
| e. Filtering Element Grade: 40 μm  |
| f. Minimum Operating Flow: 12 L/min  |
| g. Filter Bowl capacity: 9 ml  |
| h. Lubricator Bowl Capacity: 20 ml  |
| i. Connection for tube 8 dia input and 8 dia output  |
| j. Mounting: Socket head cap screw with M6 hammer head nut  |

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| **Conveyor Module** |
| a. Flat belt conveyor with overall length of 500 mm  |
| b. Conveyor to be driven by 24V DC motor of reputed make  |
| c. Conveyor to be provided with electronic drive unit for regulating the speed, reversing the direction and other function  |

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| **Separator Module** |
| Comprising of 2 pneumatic cylinders of dia 25 mm and stroke 25 mm  |

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| **Retro Reflective-Photo Electric Sensor (Upstream)**  |
| a. Type: Infra-Red  |
| b. Sensing Range: 2 m  |
| c. Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @20 mA max current |
| d. Switch Output: PNP, normally open/normally closed contact  |
| e. Output Protection: Protected against false pulse on power-up, short-circuit protected  |
| **Thru Beam-Photo Electric Sensor (Downstream)**a. Type: Infra-Red |
| b. Sensing Range: 2 m |
| c. Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @20 mA max current |
| d. Switch Output: PNP, normally open/normally closed contact |
| e. Output Protection: Protected against false pulse on power-up, short-circuit protected |
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| **Diffuse Sensor - Photoelectric**a. Type: Infra-Red  |
| b. Sensing range: 15 mm  |
| c. Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @20 mA max current  |
| d. Switch output: PNP, normally open/normally closed contacte. Output Protection: Protected against false pulse on power-up, short-circuit protected |

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| **Control Console** |
| a. Cycle Start Push Button: Green with illuminated  |
| b. Auto /Manual Selector Switch: Black  |
| c. Home Position Push Button: Red with illuminated  |
| d. Emergency Button: Red  |

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| **Cable Duct and Accessories**  |
| a. Wire Duct Size: 45 mm x 25 mm  |
| b. Fastening Screws  |

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| **PLC Control Panel with S7 1200 PLC**  |
| a. Power Supply: Input voltage: 230/115 V AC (47-63 Hz), Output Voltage: 24 V DC, Short-Circuit-Proof, Output Current: Maximum 3A  |
| b. Miniature circuit breaker DC voltage with max. 5A current rating  |
| c. Digital Inputs 14, Digital outputs 10, Analog Inputs 2 Ethernet Interface 1 x TCP/IP, 10 Mbit/s  |
| d. Terminal Blocks  |
| e. 25 pin D-sub I/O data cable length 1.5 m, wire used 0.25 mm2  |
| f Cable Ducts  |
| g. Power Connection Cable: 3 pin plug with length of 1.3 m  |

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| **5.** | **Process Station** | **Horizontal Aluminium Profile Table**a. L x W x H: 540 mm x 640 mm x 790 mm b. Aluminium Profile: Table Top Profile: 40 mm x 160 mm, Supporting Profile: 40 mm x 40 mm c. Grid Spacing (from slot to slot): 40 mm d. Profile Groove Width: 8.3 mm e. Levelling casters for quick setting and smooth movement f. Profile Plate Connectors: length 55 mm, thickness 5 mm, mounting method M6 socket head screw with M6 hammer head nut |
| **I/O Interface Module**a. 25 Pin D-Sub connector interface board for interfacing valves and actuators b. 25 Pin D-Sub cable for transferring the I/O to the terminals which in turn are to be connected to PLC |
|  |  | **Valve Manifold**a. L x W x H : 60 mm x 26.5 mm x 65 mm b. Grid Spacing: 19 mm c. Mountable Valve Port Size: 1/8’’ d. Provided with conical silencers for reducing the dB level of exhausted air e. 5/2 Double Solenoid Pilot Operated Valve: Material: Extruded aluminium with anodized finish, Size: 1/8’’, Design: Spool Type, Pressure Range: 2 to 10 bar, Flow Rate: 450 L / min, Manual Override: Resetting, Fitted with 1/8’’ flow control valve for varying the flow |
| **Filter Regulator Combination with Lubricator (FRL Unit) with Pressure Gauge and Start Up Valve**

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| a. Port Size: 1/4 inch  |
| b. Flow Rate: 500 L/min  |
| c. Maximum Supply Pressure: 10 bar  |
| d. Operating Pressure: 6 bar  |
| e. Filtering Element Grade: 40 μm  |
| f. Minimum Operating Flow: 12 L/min  |
| g. Filter Bowl capacity: 9 ml  |
| h. Lubricator Bowl Capacity: 20 ml  |
| i. Connection for tube 8 dia input and 8 dia output  |
| j. Mounting: Socket head cap screw with M6 hammer head nut  |

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| **Rotary Indexing Table Module** |
| a. Pneumatically driven rotary indexing table capable of handling load upto 50 kg  |
| b. Indexing table to be driven by cylinder of Ø 40 x 75 mm  |
| c. Indexing Angle: 60 degrees  |
| d. Indexing Plate Diameter: 320 mm  |
| e. Diffuse Sensor :  |
| Type: Infra-Red  |
| Sensing range: 15 mm  |
| Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @ 20 mA max current  |
| Switch Output: PNP, normally open/normally closed contact  |
| Output Protection: Protected against false pulse on power-up, short-circuit protected  |

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| **Drilling Module** |
| a. Drilling machine to be mounted on pneumatic linear drive of stroke 100mm  |
| b. Pneumatic Drilling Machine: No-Load Speed: 3000 rpm, Weight: 1.4 kg  |

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| **Pick and Place Module**  |
| a. Rod Less Cylinder: dia 25 mm x 250 mm stroke  |
| b. Aluminum Profile Pillar: 80 mm x 80 mm  |
| c. Rod Less Cylinder Mounting Profile: 40 mm x 40 mm  |
| d. Twin Rod Cylinder: 15 mm stroke length  |
| e. Vacuum gripper with suction pad  |

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| **Control Console** |
| a. Cycle Start Push Button: Green with illuminated  |
| b. Auto /Manual Selector Switch: Black  |
| c. Home Position Push Button: Red with illuminated  |
| d. Emergency Button: Red  |

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| **Cable Duct and Accessories**  |
| a. Wire Duct Size: 45 mm x 25 mm  |
| b. Fastening Screws  |

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| **PLC Control Panel with S7 1200 PLC**  |
| a. Power Supply: Input voltage: 230/115 V AC (47-63 Hz), Output Voltage: 24 V DC, Short-Circuit-Proof, Output Current: Maximum 3A  |
| b. Miniature circuit breaker DC voltage with max. 5A current rating  |
| c. Digital Inputs 14, Digital outputs 10, Analog Inputs 2 Ethernet Interface 1 x TCP/IP, 10 Mbit/s  |
| d. Terminal Blocks  |
| e. 25 pin D-sub I/O data cable length 1.5 m, wire used 0.25 mm2  |
| f Cable Ducts  |
| g. Power Connection Cable: 3 pin plug with length of 1.3 m  |

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| **6.** | **Sorting Station** | **Horizontal Aluminium Profile Table**a. L x W x H: 540 mm x 640 mm x 790 mm b. Aluminium Profile: Table Top Profile: 40 mm x 160 mm, Supporting Profile: 40 mm x 40 mm c. Grid Spacing (from slot to slot): 40 mm d. Profile Groove Width: 8.3 mm e. Levelling casters for quick setting and smooth movement f. Profile Plate Connectors: length 55 mm, thickness 5 mm, mounting method M6 socket head screw with M6 hammer head nut |
| **I/O Interface Module**a. 25 Pin D-Sub connector interface board for interfacing valves and actuators b. 25 Pin D-Sub cable for transferring the I/O to the terminals which in turn are to be connected to PLC |
| **Valve Manifold**a. L x W x H : 60 mm x 26.5 mm x 65 mm b. Grid Spacing: 19 mm c. Mountable Valve Port Size: 1/8’’ d. Provided with conical silencers for reducing the dB level of exhausted air e. 5/2 Double Solenoid Pilot Operated Valve: Material: Extruded aluminium with anodized finish, Size: 1/8’’, Design: Spool Type, Pressure Range: 2 to 10 bar, Flow Rate: 450 L / min, Manual Override: Resetting, Fitted with 1/8’’ flow control valve for varying the flow |
|  |  | **Filter Regulator Combination with Lubricator (FRL Unit) with Pressure Gauge and Start Up Valve**

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| a. Port Size: 1/4 inch  |
| b. Flow Rate: 500 L/min  |
| c. Maximum Supply Pressure: 10 bar  |
| d. Operating Pressure: 6 bar  |
| e. Filtering Element Grade: 40 μm  |
| f. Minimum Operating Flow: 12 L/min  |
| g. Filter Bowl capacity: 9 ml  |
| h. Lubricator Bowl Capacity: 20 ml  |
| i. Connection for tube 8 dia input and 8 dia output  |
| j. Mounting: Socket head cap screw with M6 hammer head nut  |

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| **Sorting Conveyor Module**

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| a. Flat belt conveyor with overall length of 500 mm  |
| b. Conveyor to be driven by 24V DC motor of reputed make  |
| c. Conveyor to be provided with electronic drive unit for regulating the speed, reversing the direction and other functions  |
| d. Comprising of 2 pneumatic cylinders of dia 25 mm and stroke 40 mm  |
| e. Sorting slides for collecting the work piece on appropriate slides  |
| f. Color Sensor:  |
| i. Sensing Range: 15mm  |
| ii. Supply Voltage and Current: 10 to 30V DC (10% max. ripple)  |
| iii. Switch Output: PNP, normally open/normally closed contact  |
| iv. Output Protection: Protected against false pulse on power-up, short-circuit protected  |
| v. Output Rating : 100 mA  |
| g. Proximity Sensor:  |
| i. Type: Cylindrical inductive type  |
| ii. Supply Voltage: 12 to 24 V DC  |
| iii. Sensing Range: 8 mm  |
| h. Diffuse Sensor:  |
| i. Type: Infra-red  |
| ii. Sensing Range: 15 mm  |
| iii. Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @ 20 mA max current  |
| iv. Switch Output: PNP, normally open/normally closed contact  |
| v. Output Protection: Protected against false pulse on power-up, short-circuit protected  |

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| **Control Console** |
| a. Cycle Start Push Button: Green with illuminated  |
| b. Auto /Manual Selector Switch: Black  |
| c. Home Position Push Button: Red with illuminated  |
| d. Emergency Button: Red  |

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| **Cable Duct and Accessories**  |
| a. Wire Duct Size: 45 mm x 25 mm  |
| b. Fastening Screws  |

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| **PLC Control Panel with S7 1200 PLC**  |
| a. Power Supply: Input voltage: 230/115 V AC (47-63 Hz), Output Voltage: 24 V DC, Short-Circuit-Proof, Output Current: Maximum 3A  |
| b. Miniature circuit breaker DC voltage with max. 5A current rating  |
| c. Digital Inputs 14, Digital outputs 10, Analog Inputs 2 Ethernet Interface 1 x TCP/IP, 10 Mbit/s  |
| d. Terminal Blocks  |
| e. 25 pin D-sub I/O data cable length 1.5 m, wire used 0.25 mm2  |
| f Cable Ducts  |
| g. Power Connection Cable: 3 pin plug with length of 1.3 m  |

 |
| **7.** | **PLC Software and Accessories**  | PLC programming software  |
| Floating license  |
| Programming software should be compatible with above station and real time communication  |
| Programming software should support various programming languages like ST, FBD, Ladder etc.  |
| PLC programming cable for connecting to PC  |
| Programming cable should be compatible with above station and real time communication  |
| Programming cable should be supplied with the length of 2 m for connecting PLC to PC for programming and other communications  |
| **8. Assembly Templates** | Should contain assembly templates required for the assembly of respective station and for the different combination functions. It should be made up of plain anodized Aluminium sheet with handle |
| **9. Technical Document** | Main technical document shall contain the details for the assembly of all the five stations in different combination functions. It shall include positional sketch and installation procedure etc. |
| **10. Compressor** | Compatible compressor should be provided to run the above system(s) |
| **11. Desktop/PC** | Compatible PC/Desktop with PLC Software (mentioned at above S.No. 7) should be provided to run the above system(s) |

**Annexure II**

**TECHNICAL BID DOCUMENT**

**FORMAT TO BE FILLED BY OEM OR AUTHORISED VENDORSFOR SUBMITTING TENDER FOR PROCUREMENT OF \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **Name of the Tenderer:**
2. **Details of the Address of the Vendors: (Attach Details)**
3. **Proof of Registration or Trade Licence: (Attach Details)**
4. **PAN and GST Registration No. (attach copies)**

**Certified that the above information are correct to the best of my /our information, knowledge and belief.**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Dated Signature and seal of OEM/vendor**

 **Annexure-IV**

**<< Organization Letter Head >>**

**DECLARATION SHEET**

We, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hereby certify that all the information and data furnished by our organization with regard to these tender specifications are true and complete to the best of our knowledge. I have gone through the specifications, conditions and stipulations in details and agree to comply with the requirements and intent of specification. We further certify that our organization meets all the conditions of eligibility criteria laid down in this tender document. Moreover, OEM has agreed to support on regular basis with technology / product updates and extend support for the warranty. We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/ Public Sector Undertaking in the last three years. The prices quoted in the bids are subsidized due to academic discount given to JNGEC Sundernagar.

**NAME & ADDRESS OF THE Vendor/ Manufacturer / Agent**

**Phone**

**Fax**

**E-mail**

**Contact Person Name**

 **Mobile Number**

 **GSTIN Number**

**PAN Number**

**(Signature of the Tenderer)**

**Name: Seal of the Company**

**ANNEXURE- V**

**MANUFACTURERS' AUTHORIZATION FORM**

[The Tenderer shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. Date: [insert date (as day, month and year) of Bid Submission]

**Tender No.:** [insert number from Invitation for Bids]

**To:** [insert complete name and address of Purchaser]

**WHEREAS**

We [insert complete name of Manufacturer], who are official manufacturers of [insert type of goods manufactured], having factories at [insert full address of Manufacturer’s factories], do hereby author-ize [insert complete name of Tenderer] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract. We hereby extend our full guarantee and warranty as mentioned in the terms and conditions of the tender document, with respect to the Goods offered by the above firm.

**Signed**: [insert signature(s) of authorized representative(s) of the Manufacturer]

**Name:** [insert complete name(s) of authorized representative(s) of the Manufacturer]

**Title:** [insert title] Duly authorized to sign this Authorization on behalf of: [insert complete name of Tenderer]

Dated on \_\_\_\_\_\_\_\_\_\_\_\_ day of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_ [insert date of signing]

 Annexure-III

**FORMAT FOR QUOTATION SUBMISSION**

(In letterhead of the supplier with seal)

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_

To:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  Sl. No. |  Description of goods \ (with full Specifications) | Qty. | Unit |  Quoted Unit rate in Rs.(Including Ex-Factory price,excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery andwarranty/ guaranty commitments) | Total Price (A) | Sales tax and other taxes payable |
| In % | In figures (B) |
|  |  |  |  |  |  |  |  |
| **Total Cost** |  |  |  |

Gross Total Cost (A+B): Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. ———————— (Amount in figures) (Rupees ————————amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of ——————— months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Contact No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_