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|  | <p align="center">CHANDIGARH COLLEGE OF ENGINEERING & TECHNOLOGY (DEGREE WING), SECTOR 26, CHANDIGARH (FAX No. 0172-2750872, Phone No. 0172-2750943) <u>E-TENDER NOTICE</u> <u>College website: - www.ccet.ac.in</u></p> | | |
| <p>Chandigarh College of Engineering & Technology (Degree Wing), Sector-26, Chandigarh invites e-tenders for purchase of Machinery/Equipments/Items for its Mechanical Engineering Department. The dates for opening and closing of e-tender are as given below:-</p> | | | |
| <p>Start Date and Time of uploading of e-tender</p> | <p>End Date and Time of uploading of e-tender</p> | <p>Date and Time of opening of Online Bid (Technical Bid)</p> | <p>Earnest Money</p> |
| <p>30-07-2016 at 9.00 AM</p> | <p>19-08-2016 at 3.00 PM</p> | <p>19-08-2016 at 4.30 PM</p> | <p>Detail of Earnest Money to be deposited is available in the e-tender document.</p> |
| <p>The total estimated cost of the tender is Rs. 49.99 lacs (approx.).</p> | | | |
| <p>Detailed Terms and Conditions including detail of Earnest Money are available in e-tender document.</p> | | | |
| <p>The bid document can be downloaded from the website of Chandigarh Administration http://www.etenders.chd.nic.in however for general information, guidance and reference; the tenderer can approach to office of Principal, Chd. College of Engg. & Tech. (Degree Wing), Sector-26, Chandigarh (Phone No. 0172-2750943)</p> | | | |
| | | | <p align="right">Principal</p> |



**CHANDIGARH COLLEGE OF ENGINEERING & TECHNOLOGY,(DEGREE WING),
SECTOR 26, CHANDIGARH
(Phone No. 0172-2750943)
E-TENDER NOTICE
College website: - www.ccet.ac.in**

Chandigarh College of Engineering & Technology (Degree Wing), Sector-26, Chandigarh invites tenders through e-tendering for purchase the Machinery/Equipments/Items for following Department:-

| Mechanical Engineering | | | |
|---|----------|---|------------------------|
| Scheme Name | Item No. | Item | Earnest Money (In Rs.) |
| Scheme-I MACHINE SHOP | 1 | Surface Grinder | 7000 |
| | 2 | Shaper Machine | 7000 |
| | 3 | Power Hacksaw | 2400 |
| | 4 | Pedestal Grinder | 1200 |
| | 5 | Planer Machine | 8000 |
| | 6 | Universal Milling Machine | 13000 |
| | 7 | Tool and cutter grinder | 8000 |
| Scheme-II CNC & RP SHOP | | | |
| | 1 | 3 D printer | 7000 |
| | 2 | CNC lathe kit | 4700 |
| Scheme-III CARPENTRY SHOP | | | |
| | 1. | Wood turning lathe machine | 3700 |
| | 2. | Jig saw | 800 |
| | 3. | Chain mortise | 2600 |
| | 4. | Dust collector | 300 |
| | 5. | Combined surfacer and thicknesser | 5000 |
| | 6. | Band saw | 2400 |
| | 7. | Drilling machine | 5000 |
| Scheme-IV PHYSICAL METALLURGY AND HEAT TREATMENT | | | |
| | 1 | Laboratory Muffle Furnace (Digital) | 1000 |
| | 2 | Digital Double Disc Polishing Machine | 800 |
| | 3 | Metallurgical Microscope | 3000 |
| | 4 | Specimen set | 800 |
| | 5 | Jominy end quench testing apparatus | 1000 |
| Scheme-V WELDING SHOP | | | |
| | 1 | Inverter based MIG Welding machine | 1200 |
| | 2 | Resistance Spot Welding Machine | 2000 |
| | 3 | Gas Welding Set | 1000 |
| Scheme-VI FITTING SHOP | | | |
| | 1 | Bench Drilling Machine | 1000 |
| Scheme-VII FORGING AND SMITHY SHOP | | | |
| | 1 | Cast iron anvil (100 Kg) | 1400 |
| | 2 | Cast iron anvil (50 Kg) | 800 |
| | 3 | Swage block (12"x12"x4") | 600 |
| | 4 | Swage block (18"x18"x6") | 1400 |
| | 5 | Open hearth furnace | 1600 |
| Scheme-VIII FOUNDRY SHOP | | | |
| | 1 | Moulding box (cope and drag) (12"x12"x 3"x 3/16") | 500 |
| | 2 | Moulding box (2 pcs set) (12"x 8"x 3"x 3/16") | 500 |
| | 3 | Moulding box (single piece) (12"x12"x 3"x 3/16") | 400 |
| | 4 | Core baking oven 250°C | 800 |
| | 5 | Sand Muller cum mixer | 1600 |
| | 6 | Model of cupola furnace | 300 |
| | 7 | Oil fired tilting furnace | 3800 |

Start Date and Time of uploading of e-tender : 30-07-2016 at 9.00 AM
End Date and Time of uploading of e-tender : 19-08-2016 at 3.00 PM
Date and Time of opening of Online Bid (Technical Bid) : 19-08-2016 at 4.30 PM
Detailed Terms and Conditions are available in e-tender document.

NOTE:-

Note 1:-The tenderer will have an option to submit tender for individual item or scheme separately. Tender can be submitted after consolidating the schemes and items, as the case may be. The rates shall be compared item wise and supply order will be issued to the tenderer accordingly. Each item shall be treated as independent from the other under each scheme and the tenderer shall have to submit a consolidated bid for all the components under each scheme separately.

Note 2:-The sealed envelope of EMD should bear the Advertisement No. and should be clearly superscribed as “EMD for Purchase of Machinery /Equipment/Items for Mechanical Engineering Deptt., with specific mention of Scheme Code such as “EMD for Scheme.-I, Item No.____”.

NOTE 3. *The bidder may note that no column of the BOQ shall be left blank. In case of items for which no bid is being made by the bidder, numeric value 0 (zero) shall be invariably mentioned for the validation of the BOQ.*

The bid document can be downloaded from the website of Chandigarh Administration <http://www.etenders.chd.nic.in> . However for general information, guidance and reference, the tenderer can approach to office of Principal, Chd. College of Engg. & Tech. (Degree Wing), Sector-26, Chandigarh (Phone No. 0172-2750943)

Principal

INSTRUCTIONS TO BIDDERS REGARDING E-TENDERING PROCESS

- a. Tenders without Digital Signatures will not be accepted by the electronic tendering system. No tender will be accepted in physical form and in case it has been submitted in physical it shall be rejected.
- b. Before submission of on line bids, bidders must ensure that scanned copies of all the necessary documents have been uploaded with the bid.
- c. Principal, Chandigarh College of Engg. & Technology (Degree Wing), Chandigarh will not be responsible for any delay in online submission of bids due to any reason whatsoever.
- d. Bidders should get ready with the scanned copies of EMD as specified in the tender documents. The original instruments in respect of EMD in the shape of FDR or Deposit at Call or Term Deposit Receipt or Demand Draft in favour of the Principal, Chd. College of Engg. & Tech. (Degree Wing), Sector-26, Chandigarh should reach on or before **19-08-2016 at 3.00 PM.**
- e. The details of EMD specified in the tender document should be same as submitted online (scanned copies). Otherwise tender will be rejected summarily.

TERMS AND CONDITIONS OF THE TENDER

**CCET STANDS FOR CHD. COLLEGE OF ENGINEERING & TECHNOLOGY, (DEGREE WING),
CHANDIGARH.**

1. The last date and time for receipt of tenders is **19-08-2016 at 3.00 PM** through e-tendering only.
2. **The Tender will be two Bid Systems i.e. Technical Bid and Financial Bid.**
 - i) **The Technical Bid will contain technical specifications; and**
 - ii) **The Financial Bid will contain rate per equipment/Item.**
 - a) **If rates are quoted along with Technical Bid, it will be rejected straightway.**
 - b) **The Financial Bid(s) of only those firms will be opened who are technically qualified and the date and time for opening of financial bid(s) will be conveyed after opening of the Technical Bid.**
3. Each tender must be accompanied with Earnest Money Deposit as mentioned against each item in the tender document for which bid is being made, in the shape of FDR or Deposit at Call or Term Deposit Receipt or Demand Draft in favour of the Principal, Chandigarh College of Engineering & Technology (Degree Wing), Chandigarh, valid for three months payable at Chandigarh on any Scheduled Bank.

Note:-The tenderer will have an option to submit tender for individual item or scheme separately or consolidated tender for all schemes and items, as the case may be. Each Scheme is independent of the other and the tenderer shall have to submit a consolidated bid for all the components under each scheme. Earnest Money has been mentioned / indicated in Col. 4 of the abstract of Machinery/Equipments enumerated in the tender document. In case, the Earnest Money is found to be less than that mentioned in the tender document against the items for which bid has been submitted by the tenderer, the tender shall be straightway rejected.
4. The sealed envelope of EMD should bear the Advertisement No. and should be clearly **superscribed as “EMD for Purchase of Machinery /Equipment/Items for Mechanical Engineering Deptt.,** with specific mention of Scheme Name, Code and Item No. due on **19-08-2016 at 3.00 p.m.** should be separately submitted in the office of Principal, Chandigarh College of Engineering & Technology (Degree Wing), Sector-26, Chandigarh on or before **19-08-2016 upto 3.00 p.m.**
5. Any attempt direct or indirect, to cast influence, negotiation on the part of the tenderer with the officials/authority to whom he will submit the tender or the tender accepting official/authority before the finalisation of tenders will render the tenderer liable for exclusion from consideration.
6. Tender(s) received without earnest money as specified at Sr. No. 2 above shall be rejected straightway.
7. Earnest Money deposited with the Chandigarh College of Engg. & Technology, (Degree Wing), Chandigarh in connection with any other tender will not be considered against this tender.
8. The Public Sector undertaking of the Central / State Govt. are exempted from furnishing Earnest Money Deposit.
9. This tender is not transferable.
10. The tender i.e. Pre-qualifying-cum-Technical Bid shall be opened **on 19-08-2016 at 4.30 p.m.** at Chandigarh College of Engineering & Technology (Degree Wing), Chandigarh.
11. Conditional offer shall be rejected.
12. The requirements of the Institute in terms of category of machinery/equipment/items, detailed specifications and quantity are given in **SCHEDULE OF TECHNICAL SPECIFICATION/ REQUIREMENT (AS PER ANNEXURE-I)**. Principal, CCET reserves the right to change the quantity for any/all items without assigning any reason.
13. The tenders not accompanied by Earnest Money or incomplete in any respect will be rejected out rightly.
14. No advance payment will be made. Payment will be made after receipt of machinery/equipment/items, its inspection, installation and testing to the satisfaction of the Technical and Purchase Committees.
15. The quoted prices must be mentioned showing Excise Duty and VAT / Sales tax separately.
16. The Principal, CCET reserves all rights to accept or reject any tender without assigning any reason.
17. Rates should be quoted F.O.R. Chandigarh College of Engg. & Technology, Sector-26, (Degree Wing) Chandigarh including packaging, forwarding, postage and freight etc.
18. The Principal, CCET reserves all rights to reject the goods if the same are not found in accordance with the required description / specifications.

19. In case of violation of any term and condition as mentioned, Earnest Money Deposit of the tenderer shall be forfeited in full or part at the entire discretion of the Principal, Chandigarh College of Engg. & Technology, Chandigarh.
20. Training for the operation of equipments, if any, shall be provided by the firm free of cost to the faculty / other staff of the college.
21. The defective machinery/equipment/items from the Store of Chandigarh College of Engg. & Technology, Chandigarh will be lifted at the entire cost & risk of the firm. Chandigarh College of Engg. & Technology, Chandigarh will not bear any expenses on this account and the machinery/equipment/items lying in the CCET premises will be at tenderer's risk and cost.
22. The machinery/equipments/items will be maintained free of charges during the warranty period.
23. **PERFORMANCE SECURITY:-** Performance security @10% of the value of supply order covering the warranty period shall be furnished by the firm in the shape of Bank Guarantee duly pledged in favour of Principal, Chandigarh College of Engg. & Technology, Chandigarh before / along with supply of machinery/equipments/items. **The performance security should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations.**
24. The CCET would return the Earnest Money Deposit to the successful tendering firm on the submission of the Bank Guarantee. EMD of unsuccessful tenderer will also be returned.
25. Rates quoted in Indian Currency only shall be accepted irrespective of foreign make of machinery/equipment/items which should include all kinds of charges, taxes, duties etc. Financial bids showing the rates in other currency shall not be considered and deemed to be rejected automatically.
26. **PERIOD FOR WHICH THE OFFER WILL REMAIN OPEN:-**
The tendering firms should keep their offers valid for acceptance up to **31-03-2017**. If the firms are unable to keep their offers open for the above said period, they should specifically state the period for which their offers would remain open but such a provision may result in the rejection of their offers.
27. Any conditional tender or any deviation from the terms and conditions of the tender document shall render the tender liable to rejection.
28. The machinery/equipments/items will be installed free of charge by the firm / agent at the designated premises. The cost of material required for installation shall be borne by firm. Material for experimental set up such as Table, Stand etc. should be provided by the firm at its own cost. CCET will not provide any material required for installation. Foundations of equipments wherever necessary shall be provided/constructed by the supplier free of cost.
29. **DELIVERY PERIOD:-** The Delivery period of the machinery/equipment/items shall be strictly 6-8 weeks from the date of supply order. The delivery period will be extended at the sole discretion of the Principal, CCET in special circumstances on written request from the firm. Penalty @ 1.00% per week of the cost / price of machinery/equipment/items for actual period of delay after the due date of supply of machinery/equipments/items will be charged.
30. Installation and demonstration will be done by the supplier to the satisfaction of Head of Department concerned.
31. Warranty period, where applicable, should be clearly specified but not less than 1-year in any case.
32. After the receipt of machinery/equipment, any fault or deficiency in the machinery/equipments/items noticed should be rectified by the supplier within two weeks after intimation free of cost.
33. Instructional materials and **e-manuals** will be uploaded by the supplier free of cost.
34. The technical brochure for the equipments shall be uploaded along with Pre-qualifying – cum – Technical Bid.
35. **INSPECTION OF MACHINERY/EQUIPMENT/ITEMS**
The machinery/equipments/items will be inspected only at CCET premises. However, the inspection of machinery/equipments/items at factory site or any other place, if any, shall be carried out at the risk and cost of the Tenderer / Bider. The CCET will not bear any expenses on this account.
36. In the cases of failure or default in the performance or responsibilities or breach of terms and conditions of DNIT or MOU or any agreement of contract between the company / firm / agency / person or any legal entity and CCET, as the case may be, the said company / firm / agency / person or any legal entity shall be

black listed in the light of notification issued by Chandigarh Administration vide their letter No. 1927-F&PO(3)-2009/1170 dated 27-02-2009 or any other instructions issued from time to time.

37. **The tenderer has to submit latest affidavit (as per Annexure II) regarding non black listing of individual / firm/ company, as the case may be.**

38. **JURISDICTION**

The courts of Chandigarh alone will have the jurisdiction to try any matter, dispute or reference between the parties arising out of this purchase. It is specifically agreed that no Court outside and other than Chandigarh Court shall have jurisdiction in the matter.

39. **Force majeure**:- Any failure or omission or commission to carry out provision of this tender by tenderer shall not give rise to any claim by one party against the other if such failure or omission or commission arise from an Act of God; which shall include all Acts of natural calamities such as fire, flood, earthquake, hurricane, or any pestilence or from civil strikes, compliance with any status and / or regulation of the Government, lock outs and strikes, riots, curfew, embargoes or from any political or other reason beyond the parties control including war (whether declared or not), civil war or stage of insurrection, provided that notice of the occurrence of any event by either party to the other shall be given within two week from the date of occurrence of such any event which could be attributed to force majeure conditions.

Note 1:-*The tenderer will have an option to submit tender for individual item or scheme separately. Tender can be submitted after consolidating the schemes and items, as the case may be. The rates shall be compared item wise and supply order will be issued to the tenderer accordingly. Each item shall be treated as independent from the other under each scheme and the tenderer shall have to submit a consolidated bid for all the components under each scheme separately.*

Note 2:-*The sealed envelope of EMD should bear the Advertisement No. and should be clearly superscribed as “EMD for Purchase of Machinery /Equipment/Items for Mechanical Engineering Deptt., with specific mention of Scheme Code such as “EMD for Scheme.- ____, Item No.____.*

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Annexure-I

Schedule of Technical Specification/Requirement

**(SPECIFICATIONS AND ALLIED TECHNICAL DETAILS OF MACHINERY/EQUIPMENTS/ITEMS
AND SCHEDULE OF REQUIREMENT)**

Mechanical Engineering Deptt.

(Scheme I – VIII)

Note 1:-The tenderer will have an option to submit tender for individual item or scheme separately. Tender can be submitted after consolidating the schemes and items, as the case may be. The rates shall be compared item wise and supply order will be issued to the tenderer accordingly. Each item shall be treated as independent from the other under each scheme and the tenderer shall have to submit a consolidated bid for all the components under each scheme separately.

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NOTE 3. The bidder may note that no column of the BOQ shall be left blank. In case of items for which no bid is being made by the bidder, numeric value 0 (zero) shall be invariably mentioned for the validation of the BOQ.

Annexure-I

Schedule of Technical Specification/Requirement

| Scheme –I MACHINE SHOP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------|------------------------|--|--|--|-------------|------------------------|-----------|-------------------------------------|----|-----|---------------------------------|----|-----|--|----|-----|------------------------------|----|-----------|----------------------------------|----|------|---------------------------|----|-----------|---------------------------------------|----|------|--|----------------|-----------|---------------------|----|------------------|-----------------------------|------|---|--------------------|------|---|-------------------------|-------|----|----------------|----|-----|---------------------------|--|--|--|--|--|-------------------|--|--|--|--|--|-------------------------|--|--|---|--|--|------------------------|--|--|-----------------------------------|--|--|---|--|--|--|--|--|-------------------|--|--|--|--|--|-----------|--|
| Scheme Code | Item No. | Name of Item | Specifications | | | Qty. | Amount (in Rs.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | | | 5 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I | 1 | Surface Grinder | <table border="1"> <tr> <td>Table Size</td> <td>mm</td> <td>200 X 500</td> </tr> <tr> <td>Max. Grinding Length (Longitudinal)</td> <td>mm</td> <td>460</td> </tr> <tr> <td>Max. Grinding Width (Crosswise)</td> <td>mm</td> <td>220</td> </tr> <tr> <td>Max. Distance from Table Surface to Spindle Centreline</td> <td>mm</td> <td>420</td> </tr> <tr> <td>Standard Magnetic Chuck Size</td> <td>mm</td> <td>200 X 450</td> </tr> <tr> <td>Vertical Down Feed on Hand Wheel</td> <td>mm</td> <td>0.02</td> </tr> <tr> <td>Auto Cross Feed Increment</td> <td>mm</td> <td>0.3 - 5.0</td> </tr> <tr> <td>Hand wheel Per Graduation (auto feed)</td> <td>mm</td> <td>0.02</td> </tr> <tr> <td>Grinding Spindle Drive Speed & Power 3 Phase</td> <td>r.p.m. H.P.</td> <td>3400 2</td> </tr> <tr> <td>Grinding Wheel Size</td> <td>mm</td> <td>200x19x3 1.75</td> </tr> <tr> <td>Drive Motor for X,Y, Z axes</td> <td>H.P.</td> <td>1</td> </tr> <tr> <td>Coolant Pump motor</td> <td>H.P.</td> <td>1</td> </tr> <tr> <td>Hydraulic tank capacity</td> <td>litre</td> <td>50</td> </tr> <tr> <td>Approx. Weight</td> <td>kg</td> <td>650</td> </tr> <tr> <td colspan="3">Variable speed drive (AC)</td> </tr> <tr> <td colspan="3">Standard Accessories other then specified above.</td> </tr> <tr> <td colspan="3">Cross Saddle Lock</td> </tr> <tr> <td colspan="3">Built in wheel truing attachment Head mounted including diamond</td> </tr> <tr> <td colspan="3">Standard Magnetic Chuck</td> </tr> <tr> <td colspan="3">Diamond holder & Diamond for magnetic chuck</td> </tr> <tr> <td colspan="3">Dust Exhaust equipment</td> </tr> <tr> <td colspan="3">Coolant Pump & fittings with tank</td> </tr> <tr> <td colspan="3">Precision sine vice width of jaws 100mm</td> </tr> <tr> <td colspan="3">Radius & Angular wheel forming attachment including diamond.</td> </tr> <tr> <td colspan="3">Service tools set</td> </tr> <tr> <td colspan="3">One set of two grinding wheels with flange</td> </tr> </table> <p>The machine should comply with applicable IS 2743:1992 /ISO 1986:1985 standard for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises. | | | Table Size | mm | 200 X 500 | Max. Grinding Length (Longitudinal) | mm | 460 | Max. Grinding Width (Crosswise) | mm | 220 | Max. Distance from Table Surface to Spindle Centreline | mm | 420 | Standard Magnetic Chuck Size | mm | 200 X 450 | Vertical Down Feed on Hand Wheel | mm | 0.02 | Auto Cross Feed Increment | mm | 0.3 - 5.0 | Hand wheel Per Graduation (auto feed) | mm | 0.02 | Grinding Spindle Drive Speed & Power 3 Phase | r.p.m. H.P. | 3400 2 | Grinding Wheel Size | mm | 200x19x3 1.75 | Drive Motor for X,Y, Z axes | H.P. | 1 | Coolant Pump motor | H.P. | 1 | Hydraulic tank capacity | litre | 50 | Approx. Weight | kg | 650 | Variable speed drive (AC) | | | Standard Accessories other then specified above. | | | Cross Saddle Lock | | | Built in wheel truing attachment Head mounted including diamond | | | Standard Magnetic Chuck | | | Diamond holder & Diamond for magnetic chuck | | | Dust Exhaust equipment | | | Coolant Pump & fittings with tank | | | Precision sine vice width of jaws 100mm | | | Radius & Angular wheel forming attachment including diamond. | | | Service tools set | | | One set of two grinding wheels with flange | | | 01 | |
| Table Size | mm | 200 X 500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. Grinding Length (Longitudinal) | mm | 460 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. Grinding Width (Crosswise) | mm | 220 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. Distance from Table Surface to Spindle Centreline | mm | 420 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard Magnetic Chuck Size | mm | 200 X 450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vertical Down Feed on Hand Wheel | mm | 0.02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto Cross Feed Increment | mm | 0.3 - 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hand wheel Per Graduation (auto feed) | mm | 0.02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grinding Spindle Drive Speed & Power 3 Phase | r.p.m. H.P. | 3400 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grinding Wheel Size | mm | 200x19x3 1.75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drive Motor for X,Y, Z axes | H.P. | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coolant Pump motor | H.P. | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydraulic tank capacity | litre | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approx. Weight | kg | 650 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Variable speed drive (AC) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard Accessories other then specified above. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cross Saddle Lock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Built in wheel truing attachment Head mounted including diamond | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard Magnetic Chuck | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Diamond holder & Diamond for magnetic chuck | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dust Exhaust equipment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coolant Pump & fittings with tank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Precision sine vice width of jaws 100mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Radius & Angular wheel forming attachment including diamond. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Service tools set | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| One set of two grinding wheels with flange | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|------------------------------------|-----------------|-----------------------|--|--------------|-------|----------------|------------|-----------------------|-----|----------------------------|-----|----------------------------|----|------------------------------------|-----------|------------------------------------|-----------|---------------------------------|-----------|-----------------------|-----------------|--------------|-----|--------------|---|-------|------|----|--|
| | | | <ul style="list-style-type: none"> The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I | 2 | Shaper Machine | <table border="1"> <tr><td>Machine Size</td><td>24"</td></tr> <tr><td>Maximum stroke</td><td>25"</td></tr> <tr><td>Length of Ram</td><td>45"</td></tr> <tr><td>Max. dist. of Table to Ram</td><td>18"</td></tr> <tr><td>Min. dist. of Table to Ram</td><td>2"</td></tr> <tr><td>Max. vertical travel to tool slide</td><td>6"</td></tr> <tr><td>Length and width to table top.</td><td>23" x 15"</td></tr> <tr><td>Length and width of table slide</td><td>36" x 12"</td></tr> <tr><td>Length of cross slide</td><td>37"</td></tr> <tr><td>Width of Ram</td><td>12"</td></tr> <tr><td>No of speeds</td><td>4</td></tr> <tr><td>Motor</td><td>2 HP</td></tr> </table> <p>STANDARD ACCESSORIES Service tools and cutting tools. The machine should comply with applicable IS 2310 (1989) standards for accuracy and quality. Note:</p> <ul style="list-style-type: none"> The machine should have appropriate safety mechanism The machine is to be supplied on turnkey basis in the college workshops. The supplier should be reputed original manufacturer/ authorized supplier of the machines. Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. The supplier will also provide operational and service manual of the machine at the time of supply. Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises. The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | Machine Size | 24" | Maximum stroke | 25" | Length of Ram | 45" | Max. dist. of Table to Ram | 18" | Min. dist. of Table to Ram | 2" | Max. vertical travel to tool slide | 6" | Length and width to table top. | 23" x 15" | Length and width of table slide | 36" x 12" | Length of cross slide | 37" | Width of Ram | 12" | No of speeds | 4 | Motor | 2 HP | 01 | |
| Machine Size | 24" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maximum stroke | 25" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Length of Ram | 45" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. dist. of Table to Ram | 18" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Min. dist. of Table to Ram | 2" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. vertical travel to tool slide | 6" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Length and width to table top. | 23" x 15" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Length and width of table slide | 36" x 12" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Length of cross slide | 37" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Width of Ram | 12" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No of speeds | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Motor | 2 HP | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I | 3 | Power Hacksaw | <table border="1"> <tr><td>Stroke</td><td>5.75"</td></tr> <tr><td>Blade Size</td><td>21 x 1.50"</td></tr> <tr><td>Capacity of Round Bar</td><td>11"</td></tr> <tr><td>Capacity S.Q. Bar</td><td>9"</td></tr> <tr><td>No. of speeds of stroke</td><td>3</td></tr> <tr><td>No. of strokes per minute</td><td>60-80-100</td></tr> <tr><td>Electric motor Required (1440 RPM)</td><td>1.5 HP</td></tr> <tr><td>Power of Coolant Motor</td><td>0.09 KW</td></tr> <tr><td>L x W x H</td><td>61" x 36" x 53"</td></tr> </table> | Stroke | 5.75" | Blade Size | 21 x 1.50" | Capacity of Round Bar | 11" | Capacity S.Q. Bar | 9" | No. of speeds of stroke | 3 | No. of strokes per minute | 60-80-100 | Electric motor Required (1440 RPM) | 1.5 HP | Power of Coolant Motor | 0.09 KW | L x W x H | 61" x 36" x 53" | 01 | | | | | | | |
| Stroke | 5.75" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blade Size | 21 x 1.50" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacity of Round Bar | 11" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacity S.Q. Bar | 9" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of speeds of stroke | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of strokes per minute | 60-80-100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Electric motor Required (1440 RPM) | 1.5 HP | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power of Coolant Motor | 0.09 KW | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L x W x H | 61" x 36" x 53" | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|---|---------------------------------------|-------------------------|---|-------------------------|-----|---|-----------------------------|--------------------------------------|--------------------------|----------------------|---------------------------|-----|-----|--------|--------|---------------|---------------------------------------|---------------|--------|---|--|-----------------------------------|--|-----------|
| | | | <table border="1"> <tr> <td>Weight (Kg)</td> <td>550</td> </tr> <tr> <td colspan="2">Auto feed and auto return to home position.</td> </tr> </table> <p>STANDARD ACCESSORIES</p> <ul style="list-style-type: none"> Adjustable bar rest Machine lamp V-Jaws for clamping materials in bundle No. of blades for cutting – 10 nos. Service tool kit <p>The machine should comply with applicable IS 3405 (1966) standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> The machine should have appropriate safety mechanism The machine is to be supplied on turnkey basis in the college workshops. The supplier should be reputed original manufacturer/ authorized supplier of the machines. Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. The supplier will also provide operational and service manual of the machine at the time of supply. Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. The machine with poor workmanship and low/poor quality parts will be out-rightly rejected | Weight (Kg) | 550 | Auto feed and auto return to home position. | | | | | | | | | | | | | | | | | | |
| Weight (Kg) | 550 | | | | | | | | | | | | | | | | | | | | | | | |
| Auto feed and auto return to home position. | | | | | | | | | | | | | | | | | | | | | | | | |
| I | 4 | Pedestal Grinder | <table border="1"> <tr> <td colspan="2">Pedestal grinder</td> </tr> <tr> <td>Grinder Motor</td> <td>0.75 HP, 3 Phase , 2800 RPM</td> </tr> <tr> <td>Wheel Size (One White and One Black)</td> <td>200 x 25 x 31.75 mm (8")</td> </tr> <tr> <td>Dust Collector Motor</td> <td>0.37 KW , 0.5 HP, 3 Phase</td> </tr> <tr> <td>CFM</td> <td>115</td> </tr> <tr> <td>Shaker</td> <td>Manual</td> </tr> <tr> <td>Over all Dim:</td> <td>L x W x H 650 x 650 x 1050 (in mm)</td> </tr> <tr> <td>Approx Weight</td> <td>185 kg</td> </tr> <tr> <td colspan="2">Bench Grinding Machine mounted on Rigid steel Frame</td> </tr> <tr> <td colspan="2">Inclusive of standard accessories</td> </tr> </table> <p>STANDARD ACCESSORIES Two Wheel Sets white and black. Service tool kit</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> The machine should have appropriate safety mechanism The machine is to be supplied on turnkey basis in the college workshops. The supplier should be reputed original manufacturer/authorized supplier of the machines. Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself The machine should comply with applicable standards | Pedestal grinder | | Grinder Motor | 0.75 HP, 3 Phase , 2800 RPM | Wheel Size (One White and One Black) | 200 x 25 x 31.75 mm (8") | Dust Collector Motor | 0.37 KW , 0.5 HP, 3 Phase | CFM | 115 | Shaker | Manual | Over all Dim: | L x W x H 650 x 650 x 1050 (in mm) | Approx Weight | 185 kg | Bench Grinding Machine mounted on Rigid steel Frame | | Inclusive of standard accessories | | 02 |
| Pedestal grinder | | | | | | | | | | | | | | | | | | | | | | | | |
| Grinder Motor | 0.75 HP, 3 Phase , 2800 RPM | | | | | | | | | | | | | | | | | | | | | | | |
| Wheel Size (One White and One Black) | 200 x 25 x 31.75 mm (8") | | | | | | | | | | | | | | | | | | | | | | | |
| Dust Collector Motor | 0.37 KW , 0.5 HP, 3 Phase | | | | | | | | | | | | | | | | | | | | | | | |
| CFM | 115 | | | | | | | | | | | | | | | | | | | | | | | |
| Shaker | Manual | | | | | | | | | | | | | | | | | | | | | | | |
| Over all Dim: | L x W x H 650 x 650 x 1050 (in mm) | | | | | | | | | | | | | | | | | | | | | | | |
| Approx Weight | 185 kg | | | | | | | | | | | | | | | | | | | | | | | |
| Bench Grinding Machine mounted on Rigid steel Frame | | | | | | | | | | | | | | | | | | | | | | | | |
| Inclusive of standard accessories | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | <p>(BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected.</p> <ul style="list-style-type: none"> The supplier will also provide operational and service manual of the machine at the time of supply. Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. The machine with poor workmanship and low/poor quality parts will be out-rightly rejected | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------|-----------------------|---|-----------------------|--|--|-------------------|----|---|---------------------------|----|------|-------------------------|----|------|----------------|----|---|------------------|----|----|---------------------------|----|-----|------------------------------------|----|------|----------------------------------|----|-----|---|--------|------|-------------------------|----|---------|---------------------------|----|-----|---|----|------|----------------------------|----|------|--------------------------|--|-------------|-------------------------|--|---------------|------------------|------|---|-----------|--|
| I | 5 | Planer machine | <table border="1"> <thead> <tr> <th colspan="3">Specifications</th> </tr> </thead> <tbody> <tr> <td>Height of columns</td> <td>FT</td> <td>5</td> </tr> <tr> <td>Width between two columns</td> <td>mm</td> <td>1500</td> </tr> <tr> <td>Height under cross Rail</td> <td>mm</td> <td>1500</td> </tr> <tr> <td>No of T- Slots</td> <td>mm</td> <td>5</td> </tr> <tr> <td>Width of T-Slots</td> <td>mm</td> <td>20</td> </tr> <tr> <td>Distance between T- Slots</td> <td>mm</td> <td>145</td> </tr> <tr> <td>Horizontal Traverse of tool holder</td> <td>mm</td> <td>1150</td> </tr> <tr> <td>Vertical Traverse of tool holder</td> <td>mm</td> <td>300</td> </tr> <tr> <td>Max. swivel of tool head Slide to either side</td> <td>DEGREE</td> <td>+50°</td> </tr> <tr> <td>Max. Size of tool Shank</td> <td>mm</td> <td>45 x 45</td> </tr> <tr> <td>Swivelling of clapper box</td> <td>mm</td> <td>+25</td> </tr> <tr> <td>Vertical Traverse of cross rail (elevating)</td> <td>mm</td> <td>1500</td> </tr> <tr> <td>Elevating traverse of head</td> <td>mm</td> <td>1300</td> </tr> <tr> <td>Method of driving planer</td> <td></td> <td>Belt driven</td> </tr> <tr> <td>Method of driving table</td> <td></td> <td>Rack & Pinion</td> </tr> <tr> <td>Motor 960 RPM HP</td> <td>H.P.</td> <td>2</td> </tr> </tbody> </table> <p>STANDARD ACCESSORIES</p> <ul style="list-style-type: none"> Service tools Two sets of cutting tools <p>The machine should comply with applicable IS 2877 (1986) standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> The machine should have appropriate safety mechanism The machine is to be supplied on turnkey basis in the college workshops. The supplier should be reputed original manufacturer/ authorized supplier of the machines. Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. The supplier will also provide operational and service manual of the machine at the time of supply. Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises. The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | Specifications | | | Height of columns | FT | 5 | Width between two columns | mm | 1500 | Height under cross Rail | mm | 1500 | No of T- Slots | mm | 5 | Width of T-Slots | mm | 20 | Distance between T- Slots | mm | 145 | Horizontal Traverse of tool holder | mm | 1150 | Vertical Traverse of tool holder | mm | 300 | Max. swivel of tool head Slide to either side | DEGREE | +50° | Max. Size of tool Shank | mm | 45 x 45 | Swivelling of clapper box | mm | +25 | Vertical Traverse of cross rail (elevating) | mm | 1500 | Elevating traverse of head | mm | 1300 | Method of driving planer | | Belt driven | Method of driving table | | Rack & Pinion | Motor 960 RPM HP | H.P. | 2 | 01 | |
| Specifications | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height of columns | FT | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Width between two columns | mm | 1500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height under cross Rail | mm | 1500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No of T- Slots | mm | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Width of T-Slots | mm | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Distance between T- Slots | mm | 145 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Horizontal Traverse of tool holder | mm | 1150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vertical Traverse of tool holder | mm | 300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. swivel of tool head Slide to either side | DEGREE | +50° | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. Size of tool Shank | mm | 45 x 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Swivelling of clapper box | mm | +25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vertical Traverse of cross rail (elevating) | mm | 1500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elevating traverse of head | mm | 1300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Method of driving planer | | Belt driven | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Method of driving table | | Rack & Pinion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Motor 960 RPM HP | H.P. | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|--|----------|----------------------------------|---|---------|-------------|-----------|
| I | 6 | Universal Milling Machine | Specification | | | 01 |
| | | | Table Overall dimensions (Length x Width) | mm | 1520 x 310 | |
| | | | Clamping area (Length x Width) | mm | 1350 x 310 | |
| | | | T slots / size / Spacing | mm | 3 x 16 x 65 | |
| | | | Minimum distance from left hand table end to centre of spindle | mm | 250 | |
| | | | Swivel of table to either side | degrees | 45 | |
| | | | Max. admissible weight on table | Kg | 250 | |
| | | | Power operated Traverses Long x Cross x Vertical | mm | 800x265x400 | |
| | | | Number of Feeds | nos. | 18 | |
| | | | Cutting feed rate Longitudinal & Cross | mm/Min | 16-800 | |
| | | | Cutting feed rate Vertical | mm/Min | 4-200 | |
| | | | Rapid traverse Longitudinal & Cross | mm/Min | 3200 | |
| | | | Rapid traverse Vertical | mm/min | 800 | |
| | | | Type of Feed Motor/ Power/Speed | kw/rpm | AC/1.5/1500 | |
| | | | Type of Main Motor Power/speed | Kw/rpm | AC/5.5/1500 | |
| | | | Number of Spindle speeds | nos | 18 | |
| | | | Speed range | rpm | 35.5-1800 | |
| | | | Spindle nose | iso | 40 | |
| | | | Distance from spindle centre to lower face of overarm | mm | 160 | |
| | | | Standard Accessories -Long Milling Arbor ISO 40 Dia 27 X 500mm & 22x500 mm – 1 no. each, Draw bolt with nut -Two arbour supports bearing brackets and one over arm sport One set of service tools -One set of Operation, Spare Part and Instructional manuals with set of Electrical drawings, Vertical Milling Head -Coolant equipment with pump and motor -Universal dividing head 135 mm supporting block with suitable dividing plates and centre, Height adjusted tail stock -Collet holder ISO 40, Conical type collet dia. (1Nos each) 6, 8, 10, 12, 16 & 20 (1Nos each), ISO 40 End mill holder dia 16, 20 and 25mm - 1no each, Stub Milling Arbor ISO 40 – 16x17/25 and 22x19/25 mm 1 no each -Machine lamp for 220 volts -Machine vice with Swivel Base 200 mm The machine should comply with applicable IS 13993 (1994)/ISO 1701 (1974) standard for accuracy and quality. Note: The machine should have appropriate safety mechanism | | | |
| <ul style="list-style-type: none"> • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | | | | | |

I

7

**Tool and
Cutter
Grinder with
Power rise &
fall**

01

| | |
|---|---------------|
| Wheel Head | |
| Circular adjustment | 338 degree |
| Centre of wheel above table max./min. | 260/57 mm |
| Vertical Adjustment | 200 mm |
| Wheel head motor | 0.75HP |
| Wheel speed | 3600-5000 RPM |
| Capacity | |
| Distance between work head and RH Tail stock | 350 mm |
| Length between centres | 480 mm |
| Max. Swing on cutter head | 305 mm |
| Table | |
| Longitudinal x Cross Travers | 445 x187 mm |
| Work Area | 750x110 mm |
| Swivel on either side of centre, end locking | 8 degree |
| Swivel LH/RH of column, centre locking | 90/45 degree |
| Standard Accessories | |
| MACHINE LAMP | |
| WHEEL SPINDLE EXTENSION | |
| UNIVERSAL CUTTER HEAD, ADJUSTABLE FOR 203 MM WITH DRAW BAR AND DRIFT 254MM AND 305 MM SWING DIA | |
| SETTING STRIPS FOR UNIVERSAL CUTTER HEAD TO GIVE 254 MM / 305 MM SWING | |
| REDUCING SOCKETS NOS 4 TO 3, 4 TO 2, 4 TO 1 MORSE TAPER | |
| REDUCING ARBOR NO. 50 INTERNATIONAL TAPER TO NO.4 MORSE TAPER | |
| RIGHT HAND CENTRE TAILSTOCK NO. 2 MT BORE | |
| LEFT HAND CENTRE TAILSTOCK 203 MM DIA SWING | |
| CLEARANCE ANGLE SETTING FOR LEFT HAND TAILSTOCK | |
| CARRIER FOR CLEARANCE ANGLE SETTING GAUGE | |
| DIAMOND HOLDER WITH DIAMOND | |
| UNIVERSAL TOOTH REST WITH EXTENSIONS AND MICRO ADJUSTMENTS TO BLADE | |
| UNIVERSAL TOOTH REST AND EXTENSION WITH ONE BLADE | |
| CENTRE HEIGHT GAUGE | |
| EXTRA PULLEY FOR THE WHEEL HEAD MOTOR TO GIVE ALTERNATIVE SPEEDS | |
| NECESSARY TOOL KIT | |
| 152 MM X 13 MM BORE DISC WHEEL, COARSE GRADE | |
| 152 MM X 13MM X 32 MM BORE DISC WHEEL MEDIUM GRADE | |
| 102 MM X 9.5 MM X 32 MM BORE DISC WHEEL | |
| 102 MM X 38 MM X 32MM BORE TAPER CUP WHEEL | |
| 102 MM X 6 MM X 32 MM BORE SAUCER WHEEL | |
| FLANGES FOR USE WITH GRINDING WHEELS ALONG WITH TOOLS | |
| WHEEL BALANCING MANDREL | |
| SERVICE TOOL KIT | |

The machine should comply with applicable IS 3080 (1965) standards for accuracy and quality.

Note:

The machine should have appropriate safety mechanism

- The machine is to be supplied on turnkey basis in the college workshops.
- The supplier should be reputed original manufacturer/ authorized supplier of the machines.
- Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage.
- Machine/equipment brochure/manual should be provided

| | | | | | |
|--|--|--|---|--|--|
| | | | <p>with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself</p> <ul style="list-style-type: none"> • The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises free of cost. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | |
|--|--|--|---|--|--|

Scheme –II

CNC & RP SHOP

| Scheme Code | Item No. | Name of Item | Specifications | Qty. | Amount (in Rs.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--------------|--|----------------|-----------------|------------------|----------------------------|--------------|-----------------------------------|-------------------|---------|----------|---|--|-----|--------------------------------------|-----------|----------------------|------------------------|-------------|-------------|--|-----------------------|------------------------|---|----------------------|---------|--------------|-----|--|---|----|--|
| II | 1 | 3 D Printer | <table border="1"> <thead> <tr> <th colspan="2">Specifications</th> </tr> </thead> <tbody> <tr> <td>Print Technology</td> <td>Fused Deposition Modelling</td> </tr> <tr> <td>Built volume</td> <td>305LX305WX305H mm(12Lx12Wx12H in)</td> </tr> <tr> <td>Layer Resolution:</td> <td>0.02 mm</td> </tr> <tr> <td>Material</td> <td>1.75mm ABS/PLA/HIPS/NYLON/Wood/Bronze/PC/PTG/Flex.</td> </tr> <tr> <td>Heating Bed, Enclosure, levelling free</td> <td>yes</td> </tr> <tr> <td>Nozzle Diameter & Number of Nozzles:</td> <td>0.4 mm /2</td> </tr> <tr> <td>Nozzle working Temp.</td> <td>170-300 degree Celsius</td> </tr> <tr> <td>Print Speed</td> <td>50-300 mm/s</td> </tr> <tr> <td>Software: 3D Model File types: Operating system:</td> <td>.stl, .obj Windows</td> </tr> <tr> <td>Positioning resolution</td> <td>Z axis- 0.00125 mm, XY axis- 0.00125 mm</td> </tr> <tr> <td>Operation Interface:</td> <td>English</td> </tr> <tr> <td>Touch screen</td> <td>yes</td> </tr> <tr> <td>Connectivity: Camera: Power Lost Recovery:</td> <td>USB,SD Card, WIFI, Ethernet Yes Yes</td> </tr> </tbody> </table> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. | Specifications | | Print Technology | Fused Deposition Modelling | Built volume | 305LX305WX305H mm(12Lx12Wx12H in) | Layer Resolution: | 0.02 mm | Material | 1.75mm ABS/PLA/HIPS/NYLON/Wood/Bronze/PC/PTG/Flex. | Heating Bed, Enclosure, levelling free | yes | Nozzle Diameter & Number of Nozzles: | 0.4 mm /2 | Nozzle working Temp. | 170-300 degree Celsius | Print Speed | 50-300 mm/s | Software: 3D Model File types: Operating system: | .stl, .obj Windows | Positioning resolution | Z axis- 0.00125 mm, XY axis- 0.00125 mm | Operation Interface: | English | Touch screen | yes | Connectivity: Camera: Power Lost Recovery: | USB,SD Card, WIFI, Ethernet Yes Yes | 01 | |
| Specifications | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Print Technology | Fused Deposition Modelling | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Built volume | 305LX305WX305H mm(12Lx12Wx12H in) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Layer Resolution: | 0.02 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Material | 1.75mm ABS/PLA/HIPS/NYLON/Wood/Bronze/PC/PTG/Flex. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Heating Bed, Enclosure, levelling free | yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nozzle Diameter & Number of Nozzles: | 0.4 mm /2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nozzle working Temp. | 170-300 degree Celsius | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Print Speed | 50-300 mm/s | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Software: 3D Model File types: Operating system: | .stl, .obj Windows | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Positioning resolution | Z axis- 0.00125 mm, XY axis- 0.00125 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operation Interface: | English | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Touch screen | yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Connectivity: Camera: Power Lost Recovery: | USB,SD Card, WIFI, Ethernet Yes Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|-----------|---|----------------------|--|-----------|
| | | | <ul style="list-style-type: none"> • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | |
| II | 2 | CNC Lathe Kit | <p>Specifications</p> <p>Number of Axis : 02 Drive : Steppers, 2A, 1.8° Thread spindles : Ø6 mm, 1 mm pitch Accuracy : 0.07mm Max positioning speed : 300 mm/min Travels X-Axis : 50mm Travel Z-axis : 145mm (OPTION: expandable) Chuck : Metal-3-jaw chuck with machine spiral (1, 8-56mm inside, 12-65 mm outside) Speed of head spindle : 3300 rpm</p> <p>CNC CONTROL SYSTEM</p> <p>Power supply : 110/220V, 24 VDC, 4 A Input : Parallel 25 Pins Output : 2 motor plugs, 3-pole DIN socket Axis controllable : 2</p> <p>Communication device that provide a real-time environment to run the CNC software with a USB connection. The CNC software should be accessible without having to install it.</p> <p>The parallel port interface with following specifications should allow for connection.</p> <ul style="list-style-type: none"> • 1GHz CPU, 1GB DDR3 RAM, 4GB storage • Linux CNC / Machine kit pre-installed • USB-to-PC and LPT-to-machine controller interface drivers for Windows OS <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | 01 |

| Scheme-III | | CARPENTRY SHOP | | | |
|-------------|----------|----------------------------|---|------|-----------------|
| Scheme Code | Item No. | Name of Item | Specifications | Qty. | Amount (in Rs.) |
| III | 1 | Wood turning lathe machine | TECHNICAL SPECIFICATIONS: Height of Centre 200mm Distance between Centres 1000 mm (minimum) Spindle Bore 20 mm with MK3 Internal Taper Range of Speeds 425 to 2800 Motor Drive 2 H.P. STANDARD ACCESSORIES: Revolving Centre 1 No. Wood Turning Tools 1 Set Appropriate Spanners 1 Set Appropriate sizes Allen Keys 1 Set COPYING ATTACHMENT: Should be able to produce different types of profile using appropriate TEMPLATES. The machine should comply with applicable IS 3694 (1991)/ISO 7987 (1985) standards for accuracy and quality. Note: <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | 01 | |
| III | 2 | JIG SAW | JIG SAW TECHNICAL SPECIFICATIONS: Throat depth : 600mm approx. Table Size : 290 mm x 290 mm approx. Max. Depth of cut : 30 mm approx. Motor Power : 1 H.P Speed : 600 / 760 RPM Approx. STANDARD ACCESSORIES SUPPLIED WITH THE MACHINE Appropriate Sizes Spanners 1 Set Appropriate Sizes Allen Keys 1 Set Insulated Plier 1 No. Instruction Manual 1 No. The machine should comply with applicable IS standards for accuracy and quality. Note: <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the | 01 | |

| | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|-----------|-----------------------|--|------------|------|-----------------------|-----------|---------------------------|----------|-------------------------|-------|--------------------------------|-----|-------------------|-----|----------------|------|------------------------|------|-----------|--|
| | | | <p>college workshops.</p> <ul style="list-style-type: none"> • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | | | | | | | | | | | | | | | | | |
| III | 3 | Chain Mortiser | <p>Specifications :-</p> <table> <tr> <td></td> <td>Mm</td> </tr> <tr> <td>Table Size</td> <td>550 x 290</td> </tr> <tr> <td>Up/Down movement of table</td> <td>75</td> </tr> <tr> <td>Cross movement of table</td> <td>100</td> </tr> <tr> <td>Longitudinal movement of table</td> <td>305</td> </tr> <tr> <td>Max. depth of cut</td> <td>140</td> </tr> <tr> <td>Electric motor</td> <td>2 hp</td> </tr> <tr> <td>Applicable chain width</td> <td>9 mm</td> </tr> </table> <p>STANDARD ACCESSORIES :</p> <p>1 No. electric motor of 2 HP-1440 RPM (3 phase) 1/2 chain set, R/F switch, Oil bowl, Grinding wheel & V-belt fitted in grinding attachment Toolkit and machine manual.</p> <p>The machine should comply with applicable IS 7286 (1991)/ISO 7950 (1985) standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | Mm | Table Size | 550 x 290 | Up/Down movement of table | 75 | Cross movement of table | 100 | Longitudinal movement of table | 305 | Max. depth of cut | 140 | Electric motor | 2 hp | Applicable chain width | 9 mm | 01 | |
| | Mm | | | | | | | | | | | | | | | | | | | | |
| Table Size | 550 x 290 | | | | | | | | | | | | | | | | | | | | |
| Up/Down movement of table | 75 | | | | | | | | | | | | | | | | | | | | |
| Cross movement of table | 100 | | | | | | | | | | | | | | | | | | | | |
| Longitudinal movement of table | 305 | | | | | | | | | | | | | | | | | | | | |
| Max. depth of cut | 140 | | | | | | | | | | | | | | | | | | | | |
| Electric motor | 2 hp | | | | | | | | | | | | | | | | | | | | |
| Applicable chain width | 9 mm | | | | | | | | | | | | | | | | | | | | |
| III | 4 | DUST COLLECTOR | <p>TECHNICAL SPECIFICATIONS:</p> <table border="1"> <tr> <td>No of bags</td> <td>2pcs</td> </tr> <tr> <td>Diameter of dust hood</td> <td>125mm</td> </tr> <tr> <td>Air Suction</td> <td>1300 CFM</td> </tr> <tr> <td>Motor power</td> <td>1.5hp</td> </tr> <tr> <td colspan="2">With extra set of 2 bags</td> </tr> </table> | No of bags | 2pcs | Diameter of dust hood | 125mm | Air Suction | 1300 CFM | Motor power | 1.5hp | With extra set of 2 bags | | 01 | | | | | | | |
| No of bags | 2pcs | | | | | | | | | | | | | | | | | | | | |
| Diameter of dust hood | 125mm | | | | | | | | | | | | | | | | | | | | |
| Air Suction | 1300 CFM | | | | | | | | | | | | | | | | | | | | |
| Motor power | 1.5hp | | | | | | | | | | | | | | | | | | | | |
| With extra set of 2 bags | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|------------------|---|--|----------|-------|-------------|------------|------------------------|-------|-----------------|-----|------------------------|-------|--------------------|---------|---------------|------------|-----------|---------|-------------|------------|---------------------------|------|----------------|-------|---------------------|------|-------------|--------------|---------------------------|------|------------------|--|--------------------------|-------|-------------|------------------|---------------------------|-------|---------------------|------|----|--|
| | | | <p>The machine should comply with applicable IS standard for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The machine with poor workmanship and low/poor quality parts will be out- rightly rejected. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| III | 5 | <p>Combined Surfacer&Thickneser (Planer, Thickneser, Saw, Moulder, Drilling)</p> | <p>Combined Surfacer & Thickneser (Planer, Thickneser, Saw, Moulder, Drilling)</p> <p><u>Specifications</u></p> <p>SURFACE PLANNER</p> <table> <tr> <td>ArborDia</td> <td>Ø72mm</td> </tr> <tr> <td>Arbor Speed</td> <td>4000 R/Min</td> </tr> <tr> <td>Maximum Planning Width</td> <td>250mm</td> </tr> <tr> <td>Maximum Removal</td> <td>3mm</td> </tr> </table> <p>THICKNESS PLANNER</p> <table> <tr> <td>Maximum Planning Width</td> <td>250mm</td> </tr> <tr> <td>Range of Thickness</td> <td>6~180mm</td> </tr> <tr> <td>Feeding Speed</td> <td>6.5 m /min</td> </tr> </table> <p>SAW</p> <table> <tr> <td>Blade Dia</td> <td>Ø 250mm</td> </tr> <tr> <td>Arbor Speed</td> <td>3500 R/Min</td> </tr> <tr> <td>Maximum cutting thickness</td> <td>70mm</td> </tr> </table> <p>MOULDER</p> <table> <tr> <td>Arbor diameter</td> <td>Ø20mm</td> </tr> <tr> <td>Arbor useful height</td> <td>40mm</td> </tr> <tr> <td>Arbor speed</td> <td>10,000 r/min</td> </tr> <tr> <td>Cutting Rotating Max. Dia</td> <td>72mm</td> </tr> <tr> <td>Use Shaping hood</td> <td></td> </tr> <tr> <td>Cutter rotating Max. Dia</td> <td>Ø50mm</td> </tr> <tr> <td>Motor Power</td> <td>1.5 KW 220V 50Hz</td> </tr> </table> <p>DRILLING</p> <table> <tr> <td>Drilling Dia (fixed form)</td> <td>Ø16mm</td> </tr> <tr> <td>Max. Drilling depth</td> <td>80mm</td> </tr> </table> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself | ArborDia | Ø72mm | Arbor Speed | 4000 R/Min | Maximum Planning Width | 250mm | Maximum Removal | 3mm | Maximum Planning Width | 250mm | Range of Thickness | 6~180mm | Feeding Speed | 6.5 m /min | Blade Dia | Ø 250mm | Arbor Speed | 3500 R/Min | Maximum cutting thickness | 70mm | Arbor diameter | Ø20mm | Arbor useful height | 40mm | Arbor speed | 10,000 r/min | Cutting Rotating Max. Dia | 72mm | Use Shaping hood | | Cutter rotating Max. Dia | Ø50mm | Motor Power | 1.5 KW 220V 50Hz | Drilling Dia (fixed form) | Ø16mm | Max. Drilling depth | 80mm | 01 | |
| ArborDia | Ø72mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arbor Speed | 4000 R/Min | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maximum Planning Width | 250mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maximum Removal | 3mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maximum Planning Width | 250mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Range of Thickness | 6~180mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Feeding Speed | 6.5 m /min | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blade Dia | Ø 250mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arbor Speed | 3500 R/Min | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maximum cutting thickness | 70mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arbor diameter | Ø20mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arbor useful height | 40mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arbor speed | 10,000 r/min | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cutting Rotating Max. Dia | 72mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Use Shaping hood | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cutter rotating Max. Dia | Ø50mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Motor Power | 1.5 KW 220V 50Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drilling Dia (fixed form) | Ø16mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. Drilling depth | 80mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | | | <ul style="list-style-type: none"> The machine should comply with applicable standards (BIS) for accuracy and quality. The supplier will also provide operational and service manual of the machine at the time of supply. Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises. The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | | | | | | | | | | | | | | | | | | | | | | | |
| III | 6 | Band Saw | <p style="text-align: center;"><u>Specifications</u></p> <table border="1"> <tr> <td>Technical specifications</td> <td>Mm</td> </tr> <tr> <td>Diameter of saw wheels</td> <td>305</td> </tr> <tr> <td>Throat depth</td> <td>280</td> </tr> <tr> <td>Max. cutting capacity</td> <td>150</td> </tr> <tr> <td>Work table size</td> <td>380 x 80</td> </tr> <tr> <td>Table tilt</td> <td>45°</td> </tr> <tr> <td>Width of saw wheels</td> <td>38</td> </tr> <tr> <td>Table height from floor</td> <td>490</td> </tr> <tr> <td>Approx. speed of saw wheel (RPM)</td> <td>500/750</td> </tr> <tr> <td>Power required-HP/RPM</td> <td>1.5/1440</td> </tr> <tr> <td>Approx. wt. of machine - kg.</td> <td>160</td> </tr> </table> <p>The machine should comply with applicable IS 3691(1990) /ISO 7007(1983)standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> The machine should have appropriate safety mechanism The machine is to be supplied on turnkey basis in the college workshops. The supplier should be reputed original manufacturer/ authorized supplier of the machines. Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself The machine should comply with applicable standards (BIS) for accuracy and quality. The supplier will also provide operational and service manual of the machine at the time of supply. Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises. The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | Technical specifications | Mm | Diameter of saw wheels | 305 | Throat depth | 280 | Max. cutting capacity | 150 | Work table size | 380 x 80 | Table tilt | 45° | Width of saw wheels | 38 | Table height from floor | 490 | Approx. speed of saw wheel (RPM) | 500/750 | Power required-HP/RPM | 1.5/1440 | Approx. wt. of machine - kg. | 160 | 01 | |
| Technical specifications | Mm | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Diameter of saw wheels | 305 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Throat depth | 280 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. cutting capacity | 150 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Work table size | 380 x 80 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Table tilt | 45° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Width of saw wheels | 38 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Table height from floor | 490 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approx. speed of saw wheel (RPM) | 500/750 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power required-HP/RPM | 1.5/1440 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approx. wt. of machine - kg. | 160 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| III | 7 | Drill Machines | <p style="text-align: center;"><u>Specifications</u></p> <table border="1"> <tr> <td>Drilling capacity in MS</td> <td>25mm</td> </tr> <tr> <td>Drilling Capacity in C.I</td> <td>32mm</td> </tr> <tr> <td>Tapping in M.S</td> <td>15mm</td> </tr> <tr> <td>Drilling Head</td> <td></td> </tr> <tr> <td>Spindle Hole taper</td> <td>MT-3</td> </tr> <tr> <td>Spindle speeds</td> <td>160mm</td> </tr> <tr> <td>Spindle Travel</td> <td>100-2650x8 mm</td> </tr> <tr> <td>Diameter of RAM</td> <td>72mm</td> </tr> <tr> <td>Working Range</td> <td></td> </tr> </table> | Drilling capacity in MS | 25mm | Drilling Capacity in C.I | 32mm | Tapping in M.S | 15mm | Drilling Head | | Spindle Hole taper | MT-3 | Spindle speeds | 160mm | Spindle Travel | 100-2650x8 mm | Diameter of RAM | 72mm | Working Range | | 01 | | | | | |
| Drilling capacity in MS | 25mm | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drilling Capacity in C.I | 32mm | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tapping in M.S | 15mm | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drilling Head | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spindle Hole taper | MT-3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spindle speeds | 160mm | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spindle Travel | 100-2650x8 mm | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Diameter of RAM | 72mm | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Working Range | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | | | Max. Dist. Spindle nose to table | 560mm | | | | |
| | | | Spindle centre to column | 206mm | | | | |
| | | | Table size | 336mm (round) | | | | |
| | | | Machine Measurements | 500x304x1600 | | | | |
| | | | Column diameter | 90mm | | | | |
| | | | Dist. From spindle nose to Base | 950mm | | | | |
| | | | Power | | | | | |
| | | | Motors | 2 HP | | | | |
| | | | V-Belt | B-46 | | | | |
| | | | Standard Accessories per machine Service tools set Drill chuck with key Reduction sleeves MT1, MT2 and MT3 along with drift. Foundation Bolts with levelling plates One V Belt extra Clamping T- bolts for table The machine should comply with applicable IS 2426 (1985)/ISO 2773 -1 (1973) standards for accuracy and quality. Note: <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | | | | |

Scheme-IV

PHYSICAL METALLURGY AND HEAT TREATMENT

| Scheme Code | Item No. | Name of Item | Specifications | Qty. | Amount (in Rs.) |
|-------------|----------|-------------------------------------|---|------|-----------------|
| IV | 1 | Laboratory Muffle Furnace (Digital) | <u>Specifications</u> Technical Specification <ul style="list-style-type: none"> • Max. Temperature: 1200°C • Temperature Accuracy: +/- 1°C • Heating Element: Kanthal wire • Temperature Controller: PID controller. • Display: LED / LCD Display • External Chamber Construction: MS with Powder Coating • Internal Chamber Construction: Ceramic Board & | 01 | |

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| | | | <p>Grooved Refractory Chamber</p> <ul style="list-style-type: none"> • Alarm: Audible & Visual type • Power Supply: 220 / 440 Volts (3 phase) • Digital temperature indicator • Thermostat • Stabilizer: As standard • Size: Approx 9"x4"x4" • Calibration certificate <p>Accessories:</p> <ol style="list-style-type: none"> 1. Safety switch on door. 2. Extra heating element 3. Extra thermocouple 4. Tongs 5. Gloves <p>Complete with manual. The Installation, Commissioning and Training should be included. The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The supplier will also provide operational and service manual of the machine without which the quotation will be rejected at the technical stage • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop • The machine with poor workmanship and poor quality parts will be out-rightly rejected • Machine with low quality parts and poor workmanship will be rejected. | | |
| IV | 2 | Digital Double Disc Polishing Machine | <p style="text-align: center;"><u>Specifications</u></p> <p>Table top polisher with cooling unit, the heat generator from polishing is able to be removed to avoid damaging the specimen.</p> <p>Technical Specification:</p> <ul style="list-style-type: none"> • Two 10" bronze discs • speed from 50-1400 RPM • 1 HP Motor • Electronic speed controller • Digital Speed Indicator • Lapping Wheel dia. 200 MM <p>Complete with manual. The Installation, Commissioning and Training should be included. The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/authorized supplier of the machines. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the | 01 | |

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| | | | <p>pictures and specifications, without which the bid will be rejected at the technical stage itself</p> <ul style="list-style-type: none"> • The supplier will also provide operational and service manual of the machine without which the quotation will be rejected at the technical stage • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop • The machine with poor workmanship and poor quality parts will be out-rightly rejected • Machine with low quality parts and poor workmanship will be rejected. | | |
| IV | 3 | METALLURGICAL MICROSCOPE | <p style="text-align: center;"><u>SPECIFICATION</u></p> <p>Type: Upright type with Infinity Contrast & Color Corrected optical system.</p> <p>Stand: Compact, providing wider work surface. Intensity control, shall be frame mounted. Coaxial coarse and fine focus controls along with one Super fine focus finger touch knob. Both Focus & Intensity control knobs should be positioned on both sides & operated through either both hands and Single hand. Six position Rotatable Reflector turret to hold Prism Mirror cubes for adapting different observation procedures like Bright Field & Dark Field, and reflector cubes should be built in with the turret.</p> <p>Illumination: Vertical Reflected light Illuminator with 12V 100W Quartz Halogen bulb having Cooling Filter & Condensing Cone. Bulb Filament should be aligned through External lever.</p> <p>Observation: Reflected Bright Field, Dark Field Observation. Future Upgradation facility with Rotatable Polarizer – Analyzer & DIC Observation technique.</p> <p>Objectives: Universal, Parfocal plan Fluorite objectives 2.5x, 5x, 10x, 20x, 50x, 100x for Reflected Mat. Bright Field & Dark Field Observation.</p> <p>Observation Tube: Wide field (Field No. 23 mm) Trinocular tube with tube inclination 30 degrees two position light path selector 100:0 / 0:100. Left eyepiece tube ± 5 diopter control. Right eyepiece tube with rotation stop, with interpupillary distance adjustment from 50 to 76 mm.</p> <p>Focus: Focus Knob is Provided With Coarse & Fine Adjustment Lever with a Fine Focus extension lever, which helps to get the Refocusing Facility at the time of replacing the specimen.</p> <p>Focusing System: Shall incorporate Infinity Contrast & Color Corrected optical system.</p> <p>Mechanical Stage: Universal, COAXIAL Right handle stage, 75(X) x 50(Y) mm (Min.) size with lock mechanism in Y axis, having spring loaded Specimen holder. Ceramic Quoted Top surface.</p> <p>Revolving nosepiece: Sextuple revolving nosepiece for attachment of Six Objectives at a time.</p> <p>Aperture & Field Adjustment: Both are Individually adjustable for Reflected illumination separately.</p> <p>Filters: Three position Filter Holder for Reflected Illuminator along with different filters. Light balancing & Cooling filters should be built in & Inserted with Filter Slider.</p> <p>Eyepiece: Wide field Eyepieces 10X (Field No. 23 mm) Focusable and shall accept Eyepiece micrometer.5</p> <p><u>Scientific Digital Camera:</u> Resolution: 5 mp or higher Sensor: CMOS Chip size 1/2.5" or higher Pixel size: 2.2 X 2.2 μm or higher Exposure time: 10 micro second Control: Automatic White Balance Adjustment with Automatic Intelligent Intensity Capacity Frame: 39 frames / seconds Adopter: C – mount adaptor with 0.5 X lense Interface: PC interface through USB to cable</p> <p><u>IMAGE ANALYSIS SOFTWARE:</u></p> | 01 | |

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| | | | <p>Image processing and Analysis Software for quantifying and evaluating the microscope Images. The software must be provided with File handling, Imaging, Image operations, Interactive measurements & Printing Applications: Live image display in PC Monitor along with Auto gain, live histogram and Calibrated Micron bar display. 1 bit (Binary), 8 bit color/monochrome, 16 bit monochrome and 24 bit true colour image handling. Display Zoom setting. Microscope & Camera functions should be operated through Image Analysis Software. Display and analysis of colour and monochrome images. Auto Calibration of Images with Live Calibration Micron Scale Bar in PC Monitor for Individual Objective Magnification. Interactive Measurement : Touch count, Horizontal distance, Vertical distance, Arbitrary distance, Polygon Length, Enclosed angle, Area, Perimeter, circle and pixel value, chord length, Sorting Auto filter, statistics, XY diagram. Area fraction analysis.</p> <p>Reporting: Standard Report format for visualizing Analysis data's. Future Up-gradation facility to convert it to Metallurgical Software for Multiphase, Grain analysis.</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | |
| IV | 4. | Jominy End Quench Harden ability Test Apparatus | <p>Should be useful for determining the harden ability of steels by End Quench Test.</p> <p>Technical Specification:</p> <ul style="list-style-type: none"> • Standard test piece dimensions: dia 25mm ± 0.5 x length, 100 ± 0.5mm. • Height of free water jet (without test piece in position): 65 ± 10mm • Distance from tip of nozzle to the bottom of test piece: 12.5 ± 0.5mm approx. • Power supply: Single phase 230 Volts 50 Hz A.C. • The quenching fixture: As per (ASTM A 255) specification like 45 degrees angle of top plate, quenching distance, jet stopper release just before quenching etc. • Water circulation: Motorized water circulation through water pump with storage and test tank. • Special Tong: Quick transfer of specimen to quenching fixture within specific time with special tong. • Jominy test at a Time: One or better. • Hardening the Sample: Bench top laboratory muffle furnace 900 - 950 degrees, Thyristor controlled with safety features. • Certificate: Calibration Certificate and Test Certificate shall be supplied with the equipment. | 01 | |

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| | | | <p>Complete with manual. The Installation, Commissioning and Training should be included.</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | |
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| IV | 5. | Microscope specimen Set (23 specimen with booklet) | <p>Standard samples of Metallurgical Microstructure of 23 standard samples which covers the entire ranges</p> <p>Sample Title:- 1. Dead Mild Steel 2. Low Carbon Steel 3. Medium Carbon Steel (Annealing) 4. Medium Carbon Steel (Normalizing) 5. Decarburized High Carbon Steel 6. Inclusion in Steel 7. Hardened Steel 8. Tempered Steel 9. Carburized Steel 10. Tool Steel 11. Gray Cast Iron 12. White Case Iron 13. Mottled Cast Iron 14. Ductile Cast Iron 15. Cartrid Brass 16. Munrz Metal 17. Tin Bronze 18. Electroplated Component 19. Anodized Aluminium 20. Fusion Welded Mild Steel 21. Friction Welded Steel 22. Power Metallurgy Component 23. Deformed Mild Steel.</p> <p>Complete information including chemical composition, mechanical treatment, detail of heat treatment, type, of Etchant with description of Microstructure along with their colored photographs.</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The supplier should be reputed original manufacturer/authorized supplier of the machines. • Brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The supplier will also provide operational and service manual. • Supplier shall provide full and complete Warranty/ Guarantee for one year trouble free operation. | 01 | |
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| Scheme-V | | | | | |
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| <u>WELDING SHOP</u> | | | | | |
| Scheme Code | Item No. | Name of Item | Specifications | Qty. | Amount (in Rs.) |
| V | 1 | Inverter MIG machine | <p style="text-align: center;">Inverter MIG machine</p> <p>1. Input Input supply : 415V +/- 10% Phase/ Frequency : 3 / 50Hz Input KVA @ 100% : 10-15 KVA</p> <p>2. Output</p> | 01 | |

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| | | | <p>Output Voltage Range : 15V-55V Current Range : 20-400 Amps Welding Current : 400 A (+/- 10) @ 60% 320 A (+/- 10) @ 100%</p> <p>3. Other Digital Ameter : Provide Digital Volt meter : Provide Class of insulation : H Cooling Mode : Air Torch length : 3 Mtrs</p> <p>4. Wire Feeder Digital servo control motor : Provide Feed mechanism : 2 Roll Range of Feeding Speed : 1 to 18 m/min Wire size (Min-Max) : 0.8-1.6 mm</p> <p>5. Standard Accessories MIG Torch 3mtr : 1 set Spool with MIG wire 1.2mm, MS : 1 spool x 15 Kgs Spool with MIG wire 1.2mm, Aluminium : 1 spool x 15 Kgs CO₂ Heater : 2 Nos CO₂ Regulator : 2 Nos Flowmeter : 2 Nos Necessary Connectors : 2 set CO₂gas cylinder of 30 kg : 2 nos.</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | |
| V | 2 | Resistance Spot Welding Machine (automatic) | <p style="text-align: center;">Resistance Spot Welding Machine</p> <p>1. Input Input Supply : 415 V ± 10 2 Phase/ Frequency : 2 Phase 50HZ KVA Rating @ 50% Duty Cycle : 25-30 KVA</p> <p>2. Capacity Nominal Throat Clearance : 200-250mm Throat Depth : 400-500mm Electrode stroke max : 40-50mm Max. Available Short Circuit Current : 10-12 k Amps</p> <p>3. General Air pressure : 1-3 bar Insulation : H Cooling for arms and electrode : Water</p> <p>4. Standard Accessories Cyclic cooling system : Provide</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/ authorized supplier of the machines. | 01 | |

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| | | | <ul style="list-style-type: none"> Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself The machine should comply with applicable standards (BIS) for accuracy and quality. The supplier will also provide operational and service manual of the machine at the time of supply. Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | |
| V | 3 | Gas Welding Set | <p style="text-align: center;">Gas Welding Set</p> <p>Complete set of gas welding equipments including Oxygen and Acetylene Gas cylinders, welding torch, pipe, regulator and other accessories of ISI standard</p> <p>1. Cylinder for compressed industrial oxygen gas Maximum working pressure at 15°C : 150 Kgf/ cm² Water capacity : 46.7 Lts Gas capacity : 7 Cu-m Outside diameter : 232 mm Length : 1360 mm Colour : Black Fitted with valve.</p> <p>2. Cylinder for dissolved acetylene gas Type : Seamless (IS: 7312 – 1993) Water capacity : 41 Lts Hydrostatic stretch test pressure : 250 Kgf/ cm² Pneumatic leakage test pressure : 150 Kgf/ cm² Max working pressure at 150°C : 16 Kgf/ cm² Gas capacity : 7 kg Outer diameter : 232 mm Inner diameter : 221 mm approx Wall thickness : 5.6 mm Length without valve : 1220 mm approx Colour : Maroon Fitted with valve confirms to IS : 3224</p> <p>3. Oxygen and Acetylene pressure regulator Type: Single stage double metered confirming to IS: 6901 Pressure Gauge: i) 0-300 bar ± 2.5% of F.S.D to indicate cylinder pressure ii) 0-16 bar ± 2.5% of F.S.D to indicate outlet pressure Maximum flow: ≥ 200 Lit/min</p> <p>4. Welding blowpipe (High pressure) Confirms to IS: 7653 Welding capacity: 1.25 mm to 12.50 mm thick MS Gas valves: Stainless steel spindles, taper ended Control knob: Maroon/Red for acetylene and Black/Blue for oxygen Tips: Swaged copper (60°) Size of tips to be provided: 2 (1.25 mm), 3 (1.50 mm), 5 (2.50 mm), 7 (3.15 mm), 10 (4.00 mm), 13 (5.00 mm), 18 (6.30 mm), 25 (8.00 mm), 30 (10 mm) & 35 (12.50 mm) Standard accessories: Nut & Nipple for hose connection- 1 each for Oxygen and Fuel gas.</p> <p>5. Welding blowpipe (Low pressure) Confirms to IS: 7653 Welding capacity: 1.00 mm to 4.00 mm thick MS Gas valves: Stainless steel spindles, taper ended Control knob: Maroon/Red for acetylene and Black/Blue for oxygen Tips: Swaged copper Size of tips to be provided: 1 (1.00 mm), 3 (1.50 mm), 5 (2.50 mm), 7 (3.15 mm) Standard accessories: Nut & Nipple for hose connection- 1 each for Oxygen and Fuel gas</p> <p>6. Hose Type : Single ply confirms to IS: 447 Nominal inner dia : 3/8 inch</p> | 02 | |

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| | | | Working pressure : $\geq 14 \text{ Kg/cm}^2$ Bursting pressure : $\geq 56 \text{ Kg/cm}^2$ Colour code : i) Black/Blue for oxygen : ii) Maroon/Red for acetylene. The machine should comply with applicable IS standards for accuracy and quality. Note: <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | |
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Scheme-VI

FITTING SHOP

| Scheme Code | Item No. | Name of Item | Specifications | Qty. | Amount (in Rs.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|--------------------|-------------------------------|--|-------------------|-----------------|----------------|-------|--------------------------|--------|-----------------------|--------|----------------------|--------|-----------------|---------------|------------------------|-----|-------------|-------|------------|-----------|---------------|---|-----------------------------------|--------------------|----------------------------------|-------------------|----------------|-----|----|--|
| VI | 1 | Bench Drilling Machine | <table border="1"> <tr><td>Drilling Capacity</td><td>12 MM Simple</td></tr> <tr><td>Spindle Travel</td><td>75 mm</td></tr> <tr><td>Spindle Centre To Column</td><td>160 mm</td></tr> <tr><td>Spindle Nose To Table</td><td>380 mm</td></tr> <tr><td>Spindle Nose To Base</td><td>395 mm</td></tr> <tr><td>Column Diameter</td><td>45 mm approx.</td></tr> <tr><td>Morse Taper In Spindle</td><td>MT2</td></tr> <tr><td>Table Shape</td><td>Round</td></tr> <tr><td>Table Size</td><td>400 mmDia</td></tr> <tr><td>No. of Speeds</td><td>4</td></tr> <tr><td>Spindle Speed With 1440 RPM Motor</td><td>725,1175,1880,2950</td></tr> <tr><td>Spindle Speed With 960 RPM Motor</td><td>530,840,1560,2650</td></tr> <tr><td>Motor Required</td><td>1HP</td></tr> </table> <p>Standard Accessories per machine Service tools set Drill chuck with key Reduction sleeves MT1 and MT2 with drift Foundation Bolts with levelling plates One V Belt extra Clamping T- bolts for table Two sets of drill bits.</p> The machine should comply with applicable IS standards for accuracy and quality. Note: <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete | Drilling Capacity | 12 MM Simple | Spindle Travel | 75 mm | Spindle Centre To Column | 160 mm | Spindle Nose To Table | 380 mm | Spindle Nose To Base | 395 mm | Column Diameter | 45 mm approx. | Morse Taper In Spindle | MT2 | Table Shape | Round | Table Size | 400 mmDia | No. of Speeds | 4 | Spindle Speed With 1440 RPM Motor | 725,1175,1880,2950 | Spindle Speed With 960 RPM Motor | 530,840,1560,2650 | Motor Required | 1HP | 02 | |
| Drilling Capacity | 12 MM Simple | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spindle Travel | 75 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spindle Centre To Column | 160 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spindle Nose To Table | 380 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spindle Nose To Base | 395 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Diameter | 45 mm approx. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Morse Taper In Spindle | MT2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Table Shape | Round | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Table Size | 400 mmDia | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of Speeds | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spindle Speed With 1440 RPM Motor | 725,1175,1880,2950 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spindle Speed With 960 RPM Motor | 530,840,1560,2650 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Motor Required | 1HP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | <p>Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop.</p> <ul style="list-style-type: none"> The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | |
|---------------------------------------|-----------------|---------------------|---|-------------|------------------------|
| Scheme-VII | | | | | |
| <u>FORGING AND SMITHY SHOP</u> | | | | | |
| Scheme Code | Item No. | Name of Item | Specifications | Qty. | Amount (in Rs.) |
| VII | 1 | Cast Iron Anvil | <p>Cast iron anvil</p> <p>Description: An anvil block with a hard surface to perform various forging operations.</p> <p>Specifications: M.S fabrication 100 kgs</p> <p>The equipment should comply with applicable IS 510 (1986) standard for accuracy and quality.</p> | 04 | |
| VII | 2 | Cast Iron Anvil | <p>Cast iron anvil</p> <p>Description: An anvil block with a hard surface to perform various forging operations.</p> <p>Specifications: M.S fabrication 50kgs</p> <p>The equipment should comply with applicable IS 510 (1986) standard for accuracy and quality.</p> | 04 | |
| VII | 3 | Swage Block | <p>Swage block</p> <p>Description: A swage block of cast iron with variously-sized holes in its face and forms on the sides. The through-holes of various shapes and sizes are required to hold, support or back up a hot bar of metal for further shaping.</p> <p>Specifications: Cast iron swage block 12"x12"x4"</p> <p>The equipment should comply with applicable IS 842 (1968) standard for accuracy and quality.</p> | 04 | |
| VII | 4 | Swage Block | <p>Swage block</p> <p>Description: A swage block of cast iron with variously-sized holes in its face and forms on the sides. The through-holes of various shapes and sizes are required to hold, support or back up a hot bar of metal for further shaping.</p> <p>Specifications: Cast iron swage block 18"x18"x6"</p> <p>The equipment should comply with applicable IS 842 (1968) standard for accuracy and quality.</p> | 04 | |
| VII | 5 | Open Hearth Furnace | <p>Open hearth forge</p> <p>Description: Open hearth furnaces for melting and refining pig iron, steel and scrap iron.</p> <p>Specifications: Size 600 x 600 mm M.S. Fabricated Complete with Water Tank, Coal Tank, Air Control valve, electrically operated Motorized Blower, Ash Tray, Hopper with smoke Outlet (Hood) for each open-heat and with Motorized Blower.</p> <p>Complete with Fire Bricks Lining With Chimney.</p> <p>The machine/apparatus should comply with applicable IS Standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> The supplier should be reputed original manufacturer/supplier of the machines. The supplier will also provide operational and service manual without which the quotation will be rejected at the technical stage itself. Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself Supplier shall provide full and complete warranty/Guarantee for one year trouble free operation after successful commissioning of the machine in the | 01 | |

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| | | | <p>college workshop on turnkey basis.</p> <ul style="list-style-type: none"> • Test certificate shall be furnished along with the machine. • The machine with poor workmanship and quality will be out-rightly rejected. • Foundation/ installation to be done by manufacturer on turnkey basis | | |
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Scheme-VIII

FOUNDRY SHOP

| Scheme Code | Item No. | Name of Item | Specifications | Qty. | Amount (in Rs.) |
|-------------|----------|---------------------------|---|------|-----------------|
| VIII | 1. | Moulding Box | <p>Description: Moulding box suitable for sand casting process.</p> <p>Specifications: M.S fabrication (cope and drag) Upper and lower (2 pcs set): 12"x12"x 3"x 3/16"</p> | 10 | |
| VIII | 2. | Moulding Box | <p>Description: Moulding box suitable for sand casting process.</p> <p>Specifications: M.S fabrication Upper and lower (2 pcs set): 12"x 8"x 3"x 3/16"</p> | 10 | |
| VIII | 3. | Moulding Box | <p>Description: Moulding box suitable for sand casting process.</p> <p>Specifications: M.S fabrication (single piece)12"x12"x 3"x 3/16"</p> | 20 | |
| VIII | 4. | Core Baking Oven 250°C | <p>Description: To bake sand cores of various shape and size.</p> <p>Specifications: 1. It should be electrically operated with digital display 2. Inner chamber size 18"x18"x18"</p> <p>The machine/apparatus should comply with applicable IS standards for accuracy and quality</p> | 01 | |
| VIII | 5. | Sand Miller-cum-Mixer | <p>Sand Muller cum mixer</p> <p>Description: For mixing casting sand, clay, binders and water required in casting process.</p> <p>Specifications: Capacity 200kg</p> <p>The machine/apparatus should comply with applicable IS standards for accuracy and quality.</p> | 01 | |
| VIII | 6. | Model of Cupola Furnace | <p>Model of cupola furnace</p> <p>Description: Model of cupola furnace for study purpose of 8 feet height The model should showcase different zones of the cupola for study purpose.</p> | 01 | |
| VIII | 7. | Oil Fired Tilting Furnace | <p>Oil fired tilting furnace</p> <p>Description: Oil fired tilting furnace for high-temperature heating, consisting an outer shell, having a refractory lining inside.</p> <p>Specifications: Oil fired tilting furnace of capacity 20 kg .For melting of non ferrous metals (Aluminium, Lead etc. etc.) Complete with suitable oil fired burner, Air Blower, With Electric Motor, Oil Tank 100 Litres Capacity, Air Pipe Line, Oil Pipe Line, fitted with Fire Bricks and with Graphite Crucible.</p> <p>The Oil fired tilting furnace should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine should have appropriate safety mechanism • The machine is to be supplied on turnkey basis in the college workshops. • The supplier should be reputed original manufacturer/authorized supplier of the machines. | 01 | |

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|--|--|--|--|--|--|
| | | | <ul style="list-style-type: none"> • Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage. • Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself • The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected. • The supplier will also provide operational and service manual of the machine at the time of supply. • Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop. • The supplying party will arrange pre-dispatch inspection before supplying the machine at its premises. • The machine with poor workmanship and low/poor quality parts will be out-rightly rejected. | | |
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Total Estimated Value of the Tender : Rs. 49.99 lacs

ANNEXURE-II

I/We (Name)_____

Contractor / partner / sole proprietor (strike out word which is not applicable) or (Firm)/Company

_____ do hereby solemnly affirm and declare that the individual
firm / companies are not black-listed by the Union or State Government or any autonomous body.

DEPONENT

Address _____

I/We do hereby solemnly affirm and declare that the above declaration is true and correct to the best of my knowledge and beliefs. No part of it is false and nothing has been concealed.

Dated:

DEPONENT

**CHECK LIST DULY FILLED IN TO BE ATTACHED WITH PRE-QUALIFYING-CUM-TECHNICAL
BID FOR THE EQUIPMENT FOR MECHANICAL ENGINEERING DEPARTMENT**

- | | | |
|----|--|--------|
| 1. | Whether EMD in the shape of FDR or Deposit at Call or Term Deposit Receipt or Demand Draft valid for three months, for the asked-for amount attached? | Yes/No |
| 2. | Whether tender document duly signed by authorized signatory attached? | Yes/No |
| 3. | Whether affidavit duly attested by Notary / Executive Magistrate regarding non-black listing of firm Attached? | Yes/No |
| 4. | Whether a list of institutions / organizations where your firm has supplied this item / equipment / instrument recently, is attached. | Yes/No |
| 5. | If you are an authorized agent / dealer / distributor of the firm / company / manufacturer and whether authority letter as issued by them in your favour attached? | Yes/No |
| 6. | Whether Technical broucher of the equipments attached? | Yes/No |

Signature of authorized signatory
with seal of the firm

