



Department of Metallurgical and Materials Engineering
Indian Institute of Technology, Madras, Chennai – 600 036

Enquiry No.

MET	2013	002	G.D.J.A
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Date: 06.5.13

Due Date: 27.5.13

Dear Sirs,

1. Quotations are invited in **duplicate** for the various items shown below / overleaf / enclosed list.
2. The Quotations duly sealed and superscribed on the envelope with the reference No. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above.
3. The Quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
4. If the item is under DGS & D Rate contract, Rate Contract Number and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price. If so, please send copy of the R.C. (Please note that we are not Direct Demanding Officers).
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. **Local Firms:** Quotations should be for free delivery to this Institute. If Quotations are for Ex-Godown, delivery charges should be indicated separately.
7. **Firms Outside Chennai :** Quotations should be for F.O.R Chennai. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If Ex-Godown, packing, forwarding and freight charges must be indicated.
8. The rate of Sales / General Taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for Sales / General Taxes will be admitted at any stage and on any ground whatsoever. **The taxes leviable should take into consideration that we are entitled to have Concessional Sales Tax applicable to non-Government Educational Institutions run with no profit motive for which a concession. Sales Tax Certificates will be issued at the time of final settlement of the bill.**
8. Goods should be supplied carriage paid and insured.
9. Goods shall not be supplied without an official supply order.
10. Payment: Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later.

Yours faithfully,

Automatic Polishing Machine - 1 no. (Pl Quote Technical / Price to be Siperately)
Specification Enclosed.
For any clarification Pl Contact Dr. G.D. Jannairam
Phone: 044:22574780
Mobile: 9840597364.
E-mail: Jram@iitm.ac.in.

for The Head of the Department
The Project Co-ordinator
Met. & Materials Engineering
IIT Madras, Chennai – 600 036

*Strike Out whichever is not applicable.

Technical specification

Automatic Polishing Machine

Working conditions

Technical data	Range
Voltage	200-240 V
Power inlet	1- phase or 3-phase
Humidity	40 – 95 % RH
Frequency	48-60 Hz
Allowable noise level	60 dBA

Technical specifications

Technical data	Range
Power	900 - 1200W
Current	10 A
Pressure for tap water	1 - 10 bar
Water inlet	Φ 10 mm – 20 mm
Water Outlet	Φ 40 mm
Air outlet	Φ 6 mm
Air pressure	5 – 10 bar
Weight	< 100 kg

Safety

- Turn on and turn off button for machine operation
- LED lights near the preparation area for easy visibility

Technical data	Specification
Emergency stop	Push button
Transparent Cover	Preparation area to be enclosed. Durable, scratch-free cover. Machine should stop automatically when cover is opened

Polishing Disc

	Technical data	Specification
Polishing Disc	Diameter	min. 250 mm
	Speed	40 - 600 rpm, variable with in steps of 10
	Motor Power cont./ max	750 / 1125 W
	Torque at disc	> 45 Nm
	Rotation direction	Counter clockwise and clock wise direction
	Material	Magnetic, durable design, guarantee life, chemical resistant and chip resistant finish.
	Disc cooling function	To keep the preparation surface temperature low

Software and electronics

	Technical data	Specification
Software and electronics	Control	Touch Pad and turn/push button
	Memory	Flash-ROM/RAM/NV-RAM
	LCD	TFT color, 320 x 240 dots with LCD back light
	Easy starting	For at least 15 different types of materials
	Interfaces	PC / LAN

Specimen holding head

	Technical data	Specification
Specimen Holding head	Speed	50 - 150rpm variable with steps of 10
	Rotation direction	Counter clockwise and clock wise direction
	Force	Specimen holder : 30 – 400 N Individual specimens : 10 – 60 N
	Motor Power cont./ max	120 - 150 W
	Torque	6 – 8 Nm
	Specimen holding	a) Specimen holder: for single sample polishing b) Specimen holding plate: multiple samples polishing c) Hold both mounted and un-mounted samples
	No. of samples to hold	Polish at least 6 individual specimen of Φ 30mm at a time
	Application of force	a) Automatic force (pneumatic) for each sample b) Uniform force even with sample height variation
	Tolerance	At least 10% diameter and height variation from the standard size
	Positioning against polishing disc	Motorized horizontal positioning to have best possible utilization of preparation surface
	Removal and locking of sample holding plate	Easy to remove and automatic locking inside the head

Features

- Automatic dosing of consumables (diamond paste suspension, aluminum oxide suspension, colloidal silica suspension)
- Different dosing modules with 2 pumps (1 pump for dosing suspension and other for fresh tap water)
- Provision for manual sample preparation with automatic dosing module
- Automatic level calculation for all consumable bottles
- Capability to divide the preparation step to sub steps to achieve different speed / force / dosing levels for each step
- Built in cleaning function for all the tubes and provision for sniff function whenever there is a change in dosing suspension
- Soft start and stop function (Force / Speed / dosing levels are increased or decreased gradually during start and stop)
- Material removal measurement on sample should range from (40 - 5500 μ m) to facilitate shortest grinding time
- Bowl linear to collect all debris, and bowl flushing function to clean all the debris
- Spin function for cleaning and drying of the disc or polishing surface
- Possibility to connect to recirculation cooling unit, with a shift valve provision to use both recirculating and fresh tap water
- One touch key to rotate specimen holding plate by 180° for easy insertion and removal of specimens

- Specimen holding plate should start and stop at same position for easy identification of individual samples

Consumables for polishing (to be quoted as optional items)

Product	Quantity
Plane grinding disc (250 mm diameter)	10
Fine grinding disc (250 mm diameter)	10
Polishing cloth (250 mm diameter) (9 μm , 6 μm , 3 μm , 1 μm , 1/4 μm and colloidal silica polishing)	50 each
Diamond suspension polycrystalline (9 μm , 6 μm , 3 μm , 1 μm , 1/4 μm)	5 liters each
Diamond lubricant water based	10 liters
Diamond lubricant alcohol based	10 liters
Colloidal silica suspension	10 liters
Leveling device	1
Bottle Tray	1
Magnetic disc (250 mm diameter)	1
Splash guard	1

Note

Please quote for CIF, Chennai. At least one warranty should be given. Details of any previous supplies (within India) with contact details of the users may be provided. Please separately quote for AMC for three years.