Mohali Hitech Metal Cluster Pvt. Ltd.

D-191, Phase 8B, Indl. Area, SAS Nagar (Mohali), 160071, Punjab.

TENDER DOCUMENT
No. MHMC/004/17-18

(PAGES 1 – 34)

LAST DATE AND TIME FOR RECEIPT OF TENDER	:	**02.08.2017 UPTO 11.00 AM**
DATE AND TIME OF OPENING		
Technical Bid	:	**02.08.2017 at 11.30 AM**
Financial Bid	:	**02.08.2017 (After Evaluation of Technical Bids.)**
PLACE OF OPENING OF TENDER	:	CONFRENCE ROOM
	:	D-192, Industrial Area, Phase 8-B, SAS Nagar (Mohali) - 160071

CONTENTS

CHECK LIST DULY FILLED IN TO BE ATTACHED WITH THE TENDER

FOR TECHNICAL BID

1.	Whether Technical specifications / Technical broucher of the Machinery/equipment attached?	Yes/No
3.	Whether tender document duly signed by authorized signatory attached ?	Yes/No
4.	Whether affidavit duly attested by Notary/ Executive Magistrate regarding non-black listing of firm attached?	Yes/No
5.	Whether a list of institutions/organizations where your firm has supplied this item/equipment / instrument recently, is attached?	Yes/No
6.	In case you are manufacturer, have you enclosed the certificate?	Yes/No
7.	Whether 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
8.	Whether the item / machinery / equipment to be supplied is covered under guarantee /warrantee valid for one (1) year from the date of installation as asked for in the tender document ?	Yes/No

Signature of authorized signatory
With seal of the firm

Mohali Hitech Metal Cluster Pvt. Ltd.

D-191, Phase 8B, Indl. Area, SAS Nagar (Mohali), 160071, Punjab.

TENDER FOR PURCHASE OF MACHINERY/EQUIPMENT/MATERIAL
No. MHMC/002/16-17

IMPORTANT NOTE AND DATES

1. All the instructions contained in the Tender Form are important and required to be complied with.

2. Please ensure that Technical Bid and Financial Bid are submitted in two separate envelopes and these should be put in an outer envelope, superscripting, **" Tender for Machinery/Equipment for Common Facility Centre of Mohali Hitech Metal Cluster Pvt. Ltd. Due on 02.08.2017 UPTO 11.00 AM ".**

LAST DATE AND TIME FOR RECEIPT OF TENDER	: **02.08.2017 UPTO 11.00 AM**
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Technical Bid	: **02.08.2017 at 11-30 AM**
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PLACE OF OPENING OF TENDER	
	: **CONFRENCE ROOM** : **D-192, Industrial Area, Phase 8-B,** : **SAS Nagar (Mohali) - 160071**

Mohali Hitech Metal Cluster Pvt. Ltd.

D-191, Phase 8B, Indl. Area, SAS Nagar (Mohali)**,** 160071, Punjab.

ANNEXURE-1

TENDER NOTICE

Sealed tenders on the prescribed format are invited for purchase of Machinery / Equipment/Material for the Common Facility Centre of Mohali Hitech Metal Cluster, so as to reach in the office of undersigned up to 11.00 AM on or before 02.08.2017. The tender documents containing details of machinery/equipment/material, terms & condition can be down loaded from the company's website i.e. www.mohalicluster.com.

Chairman,
Purchase Committee for Machinery and Equipment,
Mohali Hitech Metal Cluster Pvt. Ltd.,
D-191, Industrial Area, Phase 8-B, SAS Nagar (Mohali)-160071

INSTRUCTIONS/GUIDELINES TO THE TENDERER / BIDDER

The tenderer is required to go through the instructions before submission of tender document.

1. A copy of Tender Notice is enclosed as Annexure –1.

2. Tenders duly sealed in envelope and clearly superscripted as "**TENDER FOR PURCHASE OF MACHINERY/EQUIPMENT/MATERIAL for Mohali Hitech Metal Cluster Pvt. Ltd. D-191, Phase 8B, Indl. Area, SAS Nagar (Mohali) – 160071, due on 02.08.2017 UPTO 11.00 AM"** should be submitted in two separate sealed envelopes duly superscripted as under and both the sealed covers are to be put in bigger cover which should also be sealed as superscripted as above.

   i) Technical Bid along with Tender documents, Affidavit and Brochures etc. (IN ENVELOPE NO 1)
   ii) Financial Bid (IN ENVELOPE NO 2).

3. Attach an affidavit duly attested by an Executive Magistrate or a Notary Public as per Performa given at Annexure II, check list and technical brochure of the equipments with TECHNICAL BID.

4. Attach a signed copy of tender documents with the TECHNICAL BID.

5. Unsealed tender (s) will be rejected.

6. Offer should be preferably typed or written in neat/legible hand.

7. The tenderer (s) will be responsible to ensure that the tender is received on or before the due date and time at Mohali Hitech Metal Cluster Pvt. Ltd. D-191, Phase 8B, Indl. Area, SAS Nagar (Mohali) 160071.

   Each page of tender document should be signed by the tenderer (s) with stamp of the firm duly affixed on each page.

8. The tenderer, preferably, should fill the rates and amount in the price schedule as per Annexure –III himself and submit the bid to avoid any kind of mistake..

9. The tenderer should indicate specifically the sales tax/VAT, Central Excise/ Customs duties and levies chargeable against each item.

10. The tenderer should clearly indicate the availability of service and maintenance facilities at Chandigarh/ Mohali/ any other place in India for the item quoted.
11. The tenderer must indicate the list of eminent institutions/ organizations in India and particularly in and around Mohali/Chandigarh, where the same equipment has been supplied during the last three years.
12. The Tender must be submitted along with the copy of Manufacturer's license/ registration or authority from the manufacturer.

TERMS AND CONDITIONS OF THE TENDER

1. The last date and time for receipt of tenders is **02.08.2017 UPTO 11.00 AM**. Tender (s) received after the due date and time shall not be considered.
2. The Board of Directors of Mohali Hitech Metal Cluster Pvt. Ltd. Mohali reserves all rights to accept or reject any tender without assigning any reason.
3. The tender Technical Bid shall be opened at **02.08.2017 11:30 AM**. Financial bids of only those tenderer will be opened on **02.08.2017,** after Evaluation of Technical Bids, whose Technical Bids are found to be acceptable as per tender specifications.
4. In the event of date of receipt or opening of tender being declared a holiday in Mohali Hitech Metal Cluster Pvt. Ltd., tenders will be opened on next working day at the same time.
5. The tender (s) shall be opened in the presence of intending tenderer (s) or their authorized representative (s) present at that time of opening.
6. Conditional offer shall be rejected.
7. Any attempt direct or indirect, to cast influence, negotiation on the part of the tenderer with the officials/authority to whom he/she will submit the tender or the tender accepting official/authority before the finalization of tenders will render the tenderer liable for exclusion from consideration.
8. All damaged or unapproved goods shall be returned at the risk and cost of the tenderer and the incidental expenditure thereupon shall be borne by the concerned party.
9. The quoted prices must be mentioned showing Excise Duty/ Customs Duty, VAT/ Sales Tax and any other levies/ duties , packing , forwarding, freight , clearing charges etc. separately.(Annexure-III).
10. Rates should be quoted F.O.R at site i.e **Mohali Hitech Metal Cluster Pvt. Ltd.** D-191, Phase 8B, Indl. Area, SAS Nagar (**Mohali) –** 160071, including packing, forwarding postage and freight etc.
11. Purchase Committee for Machinery and Equipment of Mohali Hitech Metal Cluster Pvt. Ltd. reserves all rights to reject the goods if the same are not found in accordance with the required description / specifications.
12. Training to operate the Machine/ equipment, shall be provided by the supplier, free of cost to the operators of the CFC.
13. The defective machinery /equipment/ material from the Store of Mohali Hitech Metal Cluster Pvt. Ltd. will be lifted at the entire cost & risk of the supplier. Mohali Hitech Metal Cluster Pvt. Ltd. will not bear any expenses on this account and the material will be lying in the Mohali Hitech Metal Cluster Pvt. Ltd. premises at tenderer's risk and cost.
14. The Equipment/ Machinery/ Material will be maintained free of charges during the warranty period.
15. Performance security @ 10% of the value of supply order covering the warranty period +

60 days shall be furnished by the supplier in the shape of Demand Draft or Bank Guarantee duly pledged in favor of **Mohali Hitech Metal Cluster Pvt. Ltd.** along with the supply of Equipment/Machine/Material. Performance Gurantee not required for Working Table and Thickness Gauge.

16. Period for which the offer will remain open

    The tendering firms should keep their offers valid for acceptance up to 02.11.2017. 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 they must realize that such a provision may result in the rejection of their offers, provided, that in the event that the day upto which the offer is to remain open is declared holiday for the Mohali Hitech Metal Cluster Pvt. Ltd**.** the offer shall remain open for the following day.

17. Any conditional tender or any deviation from the terms and conditions of the tender document shall render the tender liable to rejection.

18. Any kind of discount/s given by the tenderer, must be specifically indicated in the price bid.

19. The delivery period of the equipment / machine must be mentioned in the quote. The delivery period can be extended at the sole discretion of the Board of Directors of Mohali Hitech Metal Cluster Pvt. Ltd. in special circumstances on written request from the qualified firm. Otherwise penalty @ 0.5% per week subject to a maximum of 10% of delayed period after the due date of supply machinery/Equipment/Material will be charged for actual period of delay.

20. Installation and demonstration will be done by the supplier to the satisfaction of Officer Incharge of the machine.

21. Warranty period, where applicable, should be clearly specified not less than one year in any case.

22. Any fault or deficiency in the Machinery /equipments/ Material should be rectified by the supplier within one week after intimation.

23. Instructional materials and manuals will be supplied by the supplier free of cost.

24. The technical broucher for the machinery/ equipments shall be supplied along with Technical Bid

25. The supplier will have to impart training to the staff of the CFC for smooth operating of Machinery/ equipment.

26. The tenderer will also quote the Annual Maintenance Contract cost in the tender after expiring of warranty period.

27. JURISDICTION

    The courts of Mohali 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 SAS Nagar (Mohali) Court shall have jurisdiction in the matter.

LIST OF ITEMS FOR THE PURCHASE OF MACHINERY AND EQUIPMENT
for Common Facility Centre of Mohali Hitech Metal Cluster Pvt. Ltd.

Sr. NO.	Name of the item with specification	Qty. Reqd.
1.	**Optical Emission Spectrometer** The optical spectrometer - Spectrometer shall be fully automated, PC controlled, multifunctional, direct reading optical emission spectrometer based on advanced CCD (Charged-coupled device) based technology for instant and direct metallurgical analysis of metal and alloy samples of ferrous & non-ferrous base **Technical Specifications:** 1. Computer controlled floor standing optical emission spectrometer with CCD (Charge Coupled Device) detectors. 2. Fully controlled through external PC for ease of operation and ease of changing/upgrading the PC and its software. 3. Open spark stand for high sample throughput and various kinds of sample geometrics. 4. Automatic temperature controlled optical chamber. 5. Setting up samples should be included as per the analytical program. 6. With Adapters for Wire Analysis down to 0.4 mm diameter will be preferred. 7. Ability to analyse Thin Sheets down to 0.05 mm thickness will be preferred. 8. Short sample burn time & uses inert gas purging system for optics (Argon gas). 9. The floor standing pedestal with provisions to place CPU, Keyboard, Mouse, Printer, Exhaust bottles, separate drawers to keep sample, standards, tools etc. with moving wheels for easy mobility. 10. Along with Spectrometer sample surface preparation machine. 11. Along with 2-stage Metal Diaphragm Regulated Argon Regulator and Aragon Cylinder 12. Along with Branded PC with Monitor, Printer, Wireless Keyboard and Mouse. 13. Along with Sample Preparation Machine for Ferrous and Non Ferrous bases. **Optics:** 1. High efficiency Holographic Diffraction Grating 2. Wavelength range Min : 130 – 670 nm 3. Temperature Stabilized Super-Compact System 4. Focal length Min: 350mm **Spark Source:**	**One**

1. Spark source – fully current-controlled spark source
2. Universal power input of 90-270VAC
3. Multi-frequency Range
4. Fully Computer Controlled
5. Unipolar Discharge

Spark Stand:

1. Long-life Tungsten Electrode
2. Pneumatic Sample Clamp
3. Open Spark Stand for Small & Large Samples
4. Sample Plate easily exchangeable

Software:

1. Software supplied along with the spectrometer should perform automatic argon purging when the software is opened for the first time in a day.
2. Separate Argon saver module for the spark chamber and the optical chamber is a must in the software for minimum argon consumption.
3. Software must have a feature to perform standardization for individual alloys as well as for global alloys.
4. Key board shortcuts should be provided for taking burns quickly.
5. Certified elemental analysis of analysed metals should be weight percentages.
6. Analysis of Ferrous & Non-ferrous metals.
7. Multi-base capability.
8. Auto Selection of Base, Matrix with Analysis of Chemical Composition.
9. Automatic Grade Identification.
10. Check-burn Facility, Deletion of Poor Burns.
11. Global Standardization.
12. Carbon Equivalent (CE).
13. Merge spectrum for easy use in Re-standardization.
14. Auto-Diagnostics for Faults.

Standard Samples

Cost of Standard Samples for Fe, Low Alloy Steel,
Zinc Base Alloys, Copper Alloy and Stainless Steel : Included

Analytical Programs for above as per following charts will be preferred :-

Elements	AL 01		AL 10		AL 20		AL 30	
	Al Orientation		Al Low Alloy		Al- Si		Al - Si - Cu	
	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)
Ag	0.005	0.3	-	-	-	-	-	-
B	0.0001	0.05	0.0001	0.05	-	-	-	-
Be	0.0001	0.05	-	-	0.001	0.2	-	-
Bi	0.0005	0.6	0.0005	0.6	0.0005	0.6	-	-
Ca	0.0001	0.05	-	-	0.001	0.002	-	-
Co	0.0005	0.5	0.0005	0.5	0.0005	0.5	-	-
Cr	0.001	0.6	0.001	0.1	0.005	0.2	0.005	0.5
Cu	0.001	15	0.001	0.2	0.001	0.3	0.01	5
Fe	0.001	2.5	0.001	1	0.05	1	0.05	1.3
Ga	0.001	0.15	0.0005	0.05	0.001	0.15	-	-
Li	0.0001	0.1	0.0001	0.1	-	-	-	-
Mg	0.0001	15	0.001	1	0.02	2	0.02	1.8
Mn	0.001	1.5	0.001	0.9	0.01	0.8	0.02	0.8
Na	0.0005	0.1	0.0005	0.1	0.0005	0.1	-	-
Ni	0.001	3	0.005	0.08	0.005	1	0.01	2
P	0.005	0.01	0.005	0.01	0.005	0.01	-	-
Pb	0.001	1.5	0.002	0.1	0.005	0.1	0.005	0.25
Sb	0.005	0.5	0.005	0.04	0.005	0.5	0.005	0.3
Si	0.001	25	0.001	0.8	1	20	1	15
Sn	0.002	0.5	0.005	0.1	0.005	0.1	0.005	0.25
Sr	0.0001	0.15	-	-	0.0005	0.2	-	-
Ti	0.001	0.55	0.001	0.1	0.01	0.3	0.01	0.55

V	0.001	0.2	0.001	0.1	0.001	0.05	-	-
Zn	0.005	15	0.005	0.5	0.005	0.5	0.01	3
Zr	0.005	0.25	-	-	-	-	-	-
Al	**REFERENCE**							

Elements	**AL 40**		**AL 50**		**AL 60**		**AL 70**	
	Al - Cu		**Al - Mg**		**Al - Zn**		**Al - Mn**	
	Min(%)	**Max (%)**	**Min(%)**	**Max (%)**	**Min(%)**	**Max (%)**	**Min(%)**	**Max (%)**
Ag	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-
Be	-	-	-	-	-	-	-	-
Bi			-	-	-	-	-	-
Ca	-	-	-	-	-	-	-	-
Co	0.005	0.4	-	-	-	-	-	-
Cr	0.004	0.12	0.005	0.3	0.001	0.6	0.001	0.1
Cu	1	12	0.001	0.2	0.005	0.5	0.001	0.2
Fe	0.04	1.2	0.01	0.8	0.002	1	0.001	1
Ga	0.001	0.15	-	-	-	-	-	-
Li	-	-	0.0005	0.005	-	-	-	-
Mg	0.01	2.5	1	10.6	0.01	3	0.001	1
Mn	0.02	1	0.01	1.3	0.005	0.6	0.001	2.7
Na	-	-	0.0005	0.003	-	-	-	-
Ni	0.01	2.5	0.005	0.1	0.005	0.2	0.005	0.1
P	-	-	-	-	-	-	-	-
Pb	0.005	1	-	-	0.002	0.2	0.002	0.1
Sb	-	-	-	-	-	-	0.005	0.04
Si	0.03	3	0.01	1	0.03	0.6	0.001	0.8
Sn	0.005	0.5	0.005	0.08	0.005	0.2	0.005	0.1
Sr	-	-	-	-	-	-	-	-
Ti	0.004	0.2	0.005	0.2	0.001	0.2	0.001	0.1
V	-	-	-	-	-	-	0.001	0.1
Zn	0.005	3	0.005	0.3	0.9	8	0.005	0.5
Zr	0.005	0.2	0.01	0.15	0.01	0.2	-	-
Al	**REFERENCE**							

Elements	CU 01		CU 11		CU 20		CU 21	
	Cu Orientation		Pb Bronze		Brass		High Alloyed Brass	
	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)
Al	0.001	12	0.01	0.2	0.005	1	0.005	8
As	0.003	0.4	-	-	-	-	-	-
Be	0.0005	3	-	-	-	-	-	-
Bi	0.005	0.2	-	-	-	-	-	-
B	0.001	0.01	-	-	-	-	-	-
Cd	0.001	0.5	-	-	-	-	-	-
Co	0.0005	3.5	-	-	-	-	-	-
Cr	0.001	1.5	-	-	0.001	0.05	0.001	0.05
Fe	0.0005	7	0.01	0.5	0.01	1	0.01	4
Mg	0.0005	0.2	-	-	-	-	-	-
Mn	0.0005	5	0.01	0.4	0.01	1	0.01	5
Ni	0.0005	40	0.005	4	0.01	1	0.01	3
P	0.002	1.5	0.005	1.5	0.005	0.2	0.005	0.2
Pb	0.001	35	0.01	35	0.01	2	0.01	2
S	0.002	0.3	0.005	0.3	0.005	0.1	0.005	0.1
Sb	0.005	1.5	0.01	1.5	0.01	0.1	0.01	0.1
Si	0.005	6	0.01	0.2	0.01	1	0.01	6
Sn	0.002	15	0.1	15	0.01	2	0.01	4
Te	0.005	0.1	-	-	-	-	-	-
Zn	0.005	54	0.005	2	1	40	1	4
Zr	0.005	0.2	-	-	-	-	-	-
Cu	REFERENCE							

Element	ZN 01		ZN 02		ZN 10		ZN 20		ZN 30		ZN 40		ZN 50	
	Zinc Orientation		Pure Zn		Zamak 200/210		Zamak 400/410		Zamak 430		Zn/Al (4-15)		Zn/Al(>15	
	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Ma (%
Al	0.0005	50	0.0005	0.08	0.0005	3.1	0.0005	6	0.0005	4.5	0.01	13.5	0.1	5
Cd	0.0005	0.03	0.0005	0.03	0.0005	0.011	0.0005	0.025	0.0005	0.01	0.0005	0.02	0.0005	0.0
Cu	0.001	3.2	0.001	0.02	0.001	1.3	0.001	1.8	0.001	3.1	0.001	3.2	0.001	3.
Fe	0.001	0.08	0.001	0.08	0.001	0.04	0.001	0.11	0.001	0.01	0.001	0.18	0.001	0.1
Mg	0.0005	0.15	0.0005	0.015	0.0005	0.1	0.0005	0.1	0.0005	0.1	0.0005	0.06	0.0005	0.0
Mn	0.0005	0.035	0.0005	0.01	0.0005	0.035	0.0005	0.12	0.0005	0.01	0.0005	0.025	0.0005	0.0
Ni	0.0005	0.05	0.0005	0.05	0.0005	0.02	0.0005	0.05	0.0005	0.01	0.0005	0.01	0.0005	0.0
Pb	0.001	0.2	0.001	0.05	0.001	0.012	0.001	0.15	0.001	0.01	0.001	0.09	0.001	0.0
Sn	0.001	0.1	0.001	0.015	0.001	0.025	0.001	0.025	0.001	0.01	0.001	0.025	0.001	0.0
Ti	0.0005	0.004	0.0005	0.004	0.0005	0.005	0.0005	0.004	0.0005	0	0.0005	0.004	0.0005	0.0
Zn	REFERENCE													

Element	FE 01		FE 10		FE 20		FE 40	
	FE Orientation		Cast Iron		MS/CS/LAS		Stainless Steel	
	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)	Min(%)	Max (%)
Al	0.001	1.8	0.002	0.1	0.001	1.8	0.005	0.1
As	0.005	0.1	0.005	0.1	0.003	0.1	-	-
B	0.0005	0.1	0.0005	0.05	0.0005	0.05	0.001	0.1
Bi	0.001	0.2	-	-	0.001	0.1	-	-
C	0.001	4.5	2	4.1	0.004	1.3	0.005	1
Ca	0.001	0.01	0.0005	0.008	0.0005	0.01	-	-
Ce	0.002	0.1	0.002	0.1	-	-	-	-
Co	0.002	18	0.002	0.2	0.002	1	0.005	0.5

Cr	0.002	40	0.002	3	0.002	5	5	35
Cu	0.001	6	0.002	1.5	0.002	1	0.01	6
La	0.005	0.03	0.005	0.03	-	-	-	-
Mg	0.0005	0.1	0.001	0.1	-	-	-	-
Mn	0.002	20	0.02	2.2	0.002	2	0.05	2
Mo	0.002	10	0.002	1.2	0.002	2	0.002	2.5
Nb	0.002	1.5	0.002	0.06	0.002	1	0.004	0.5
Ni	0.002	45	0.002	2.6	0.002	5	4	35
P	0.0015	1.5	0.002	0.5	0.0015	0.1	0.002	0.1
Pb	0.002	0.25	0.002	0.05	0.002	0.05	-	-
S	0.001	0.5	0.001	0.2	0.001	0.1	0.002	0.1
Sb	0.005	0.5	0.005	0.2	0.005	0.5	-	-
Si	0.001	6	0.3	3.5	0.002	1.7	0.05	1
Sn	0.001	0.2	0.001	0.15	0.001	0.1	-	-
Te	0.001	0.1	0.001	0.08	0.001	0.1	-	-
Ti	0.001	1.5	0.001	0.2	0.001	0.4	0.005	0.3
V	0.001	3.5	0.001	0.4	0.001	1	0.01	0.8
W	0.005	25	0.1	0.1	0.005	0.4	0.01	4
Zn	0.001	0.05	-	-	0.001	0.02	-	-
Zr	0.001	0.5	0.01	0.08	0.001	0.1	-	-
Fe	REFERENCE							

Electrical: Manufacturer to specify

Environmental: Manufacturer to specify

Approx. Dimensions & Weight : Manufacturers to specify
After Sales Service/ Spares arrangement :Manufacturers to specify
Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify
Other Additional Information : Manufacturers to specify
Spare Parts/ consumables for 1 year Included : Manufacturers to specify quantities
Cost of Packaging :Included
Commissioning and Training Cost : Included
Lodging and Travel cost of Technicians / Trainer : Included
Training Duration : To be quoted by Supplier

2.	**Universal Milling Machine**	**One**

Parameters	Specifications (mm)
Working Surface (Min)	1300*280
Swivel	±45°
T-Slots No./Size - Min	3 no./ 16
Distance B/w T-Slots (Min)	60
X-Longitudinal Travel -Min	700
Y-Cross Travel- Min	200
Z-Vertical Travel - Min	400
Spindle Speeds - Min	8
Speed Range - Min	30-1100
Spindle Nose	ISO 40
Arbour Diameter -Min	25
No. of Feeds	18
Range of Longitudinal Feed/min	18-400
Range of Cross Feed/min	18-400
Range of Vertical Feed/min	3.5-90
Rapid Feeds	2
Longitudinal Rapid Feed/min	900, 1500
Cross Rapid Feed/min	900, 1500
Vertical Rapid Feed/min	225, 365
Main Motor - Min	3 H.P.
Feed Motor	2 H.P.
Coolant Motor	0.1 H.P.
Electricals , Control Panel, Arbour with Hardened Bushes, Duplex Attachment, Slotting Attachment, Universal Dividing Head, Rotary Table with Indexing Plate, Milling Vice, Lamp, Coolant System & Forced Lubrication, ISO 40 Adopter and Collets.	Included

Approx. Dimensions & Weight : Manufacturers to specify

<table>
<tr><td></td><td>After Sales Service/ Spares arrangement :Manufacturers to specify
Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify
Other Additional Information : Manufacturers to specify
Spare Parts/ consumables Included : Manufacturers to specify quantities
Cost of Packaging :Included
Commissioning and Training Cost : Included
Lodging and Travel cost of Technicians / Trainer : Included
Training Duration : To be quoted by Supplier</td><td></td></tr>
<tr><td>3.</td><td>Surface Grinder
<table>
<tr><th>Parameters</th><th>Specifications (mm)</th></tr>
<tr><td>Magnetic Table Size - Approx.</td><td>750*400</td></tr>
<tr><td>Grinding Table Travel - upto</td><td>750*400</td></tr>
<tr><td>Height of spindle centre above table - upto</td><td>500</td></tr>
<tr><td>Table Load Capacity (Incl. Magnetic Chuck) - approx.</td><td>400</td></tr>
<tr><td>Table Speed</td><td>5 -20 m/min</td></tr>
<tr><td>Automatic Cross Feed Increment</td><td>0.5-10 mm/stroke</td></tr>
<tr><td>Rapid Power Cross Feed Approx.</td><td>900 mm/min</td></tr>
<tr><td>Rapid Power Verrtical Feed Approx.</td><td>500 mm/min</td></tr>
<tr><td>Grinding Wheel Speed</td><td>1400 rpm / 2800 rpm</td></tr>
<tr><td>Grinding Wheel Dimensions</td><td>Manufacturer to specify</td></tr>
<tr><td>Spindle Motor (Min)</td><td>3.7 kW Branded</td></tr>
<tr><td>Hydraulic Pump Motor (Min)</td><td>2 HP Branded</td></tr>
<tr><td>Automatic Cross Feed Motor (Min)</td><td>0.5 HP Branded</td></tr>
<tr><td>• Diamond Dresser with Holder</td><td rowspan="12">Included</td></tr>
<tr><td>• Spanner for Wheel Changing</td></tr>
<tr><td>• Wheel Adopter Puller</td></tr>
<tr><td>• Grinding Wheel</td></tr>
<tr><td>• Tool Kit</td></tr>
<tr><td>• Turcite B- line for Longitudinal and Cross Slide</td></tr>
<tr><td>• Automatic Lubrication System</td></tr>
<tr><td>• Table Mounted Diamond Dresser</td></tr>
<tr><td>• Machine Levelling Pads</td></tr>
<tr><td>• Balancing Arbour</td></tr>
<tr><td>• Work Light</td></tr>
</table></td><td>One</td></tr>
</table>

	• DRO for Vertical		
	• Permanent Magnetic Chuck		
	• Wheel Balancing Stand		
	• Radius Dressing Attachment		
	• Coolant Pump With Tank and Splash Guard		
	• Spindle Mounting Dressing Attachment		
	• Tool Maker Vice		
	• Auto Magnetic Filtration System		
	• Dust Collector		

Approx. Dimensions & Weight : Manufacturers to specify
After Sales Service/ Spares arrangement :Manufacturers to specify
Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify
Other Additional Information : Manufacturers to specify
Spare Parts/ consumables Included : Manufacturers to specify quantities
Cost of Packaging :Included
Commissioning and Training Cost : Included
Lodging and Travel cost of Technicians / Trainer : Included
Training Duration : To be quoted by Supplier

4. **Core Baking Oven** — **One**

Working Chamber Size (Min) - 450 mm *450 mm*350 mm height

Temperature Range – Room Temperature to 600 deg C Approx.

Power Rating - 6 kW-3 Phase

Main Oven: The main oven should be made out of powder coated 2 mm thick outer casing & the insulation will be 115 mm combination of ceramic blanket & and board

Doors: Manually operated three sides doors should be provided.

Heating Elements: suitably designed tubular heater should be provided at top and bottom of the oven chamber.

Thermocouples- one number of thermocouple should be provided for controlling chamber tempeture accurately

Control Panel - Powder coated control panel should be provided, consisting of ammeters, voltmeters, VSS, on/Off Switch, energy efficient SSR controller PID controller. Main switch, pilot lamps etc.

Approx. Dimensions & Weight : Manufacturers to specify
After Sales Service/ Spares arrangement :Manufacturers to specify
Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify

	Other Additional Information : Manufacturers to specify Spare Parts/ consumables Included : Manufacturers to specify quantities Cost of Packaging :Included Commissioning and Training Cost : Included Lodging and Travel cost of Technicians / Trainer : Included Training Duration : To be quoted by Supplier	
5	**Moulding Dies with Core Boxes** • One Set of Die and Core Box of Wall Mixer (Heavy) • One Set of Die and Core Box of Basin Mixer • One Set of Die and Core Box of Bib Cock Long Body • One Set of Die and Core Box of Angle Valve • One Set of Die and Core Box of Bib Cock • Dies should be suitable for IMR Make Low Pressure Die Casting Machine • Core Boxes should be suitable for making Shell Cores as well as Hot Box Process Cores • Dies and Core Boxes should be made on VMC/ CNC Machines. • Dies and Core Boxes should be as per our drawings. • Drawings can be obtained from our office. After Sales Service/ Spares arrangement :Manufacturers to specify Other Additional Information : Manufacturers to specify Cost of Packaging :Included	**5 Nos.**
6.	**Moulding Dies with Core Boxes** • One Set of Die and Core Box of Wall Mixer • One Set of Die and Core Box of Basin Mixer • One Set of Die and Core Box of Bib Cock Long Body • One Set of Die and Core Box of Flush Valve Body • One Set of Die and Core Box of Bib Cock • Dies should be suitable for IMR Make Low Pressure Die Casting Machine • Core Boxes should be suitable for making Shell Cores as well as Hot Box Process Cores • Dies and Core Boxes should be made on VMC/ CNC Machines. • Dies and Core Boxes should be as per our drawings. • Drawings can be obtained from our office. After Sales Service/ Spares arrangement :Manufacturers to specify Other Additional Information : Manufacturers to specify Cost of Packaging :Included	**5 Nos.**

7.	**CNC Engraving Machine**	**One**

PARAMETERS	SPECIFICATIONS
Table Size (mm)- Min	500 x 400 mm
T – slots - Min	4 Nos.
Safe Load on Table (kg)	100 kg
Distance from table to spindle face (mm) - Min	150 mm
Axis Travel	
1. X – axis (Min)	400 mm
2. Y – axis (Min)	350 mm
3. Z – axis (Min)	100 mm
Axis Motion	Through pre-loaded ball screws & hardened and ground LMGs
Axis Drives	Servo Drives
Cutting Feed Rate	7500 mm/min
Rapid Traverse	10,000 mm/min
Positional Accuracy	< 0.02 mm
Repeatability	< 0.01 mm
Spindle Type	High Frequency
Spindle Motor Power (Min)	2 KW
Spindle Speed	1 to 24,000 rpm
Spindle Nose Taper	ER 20/ ER 25
Tool Size - Upto	16 mm
Softwares required to Operate	Included & Manufacturer to Specify
3D Digitiser	Included
Coolant Equipment and Voltage Stabilizer & Machine Lamp	Included

Approx. Dimensions & Weight of Machine : Manufacturers to specify
After Sales Service/ Spares arrangement :Manufacturers to specify
Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify
Other Additional Information : Manufacturers to specify
Spare Parts/ consumables Included : Manufacturers to specify quantities
Cost of Packaging :Included
Commissioning and Training Cost : Included
Lodging and Travel cost of Technicians / Trainer : Included
Training Duration : To be quoted by Supplier

8. **Rockwell Hardness Tester** — **One**

Parameters	Specifications
Initial Testing Force	10 kgf.
Testing Force	60,100,150 kgf. for Rockwell, 187.5kg for Brinell
Depth of Throat (Min)	130 mm
Depth of Elevating (Upto)	295 mm
Exchange Scales	Superficial Rockwell, Brinell, Vickers
Indication of Hardness Value	Digital Display with LED/ LCD Screen
Data Output	Provision of Port to Connect External Printer
Duration Time	1 to 99 seconds selectable
Height of Specimen Min upto	250 mm
Power supply	220 V, Single Phase, 50Hz AC
Quality Standards	1. For Rockwell test: IS 1586-2000, BSEN-ISO-6508-2, ASTM-E-18 2. For Brinell test: IS 2281-1983, BS 240, ASTM-E-10 3. For Rockwell superficial test: IS 1586-2000, ASTM-E 18
Functions	1. Selection of Rockwell hardness scales, 2. Choice of plastics Rockwell scales 3. Exchange hardness values among hardness scales, 4. Provision of Port and softwares to Connect the External Printer the Output/ the results of hardness measurement.
Usage Range	Metals and alloys of all kinds, hard or soft, whether flat or round etc. or of irregular shape.
Standard Accessories	• Testing table-flat (50 mm dia.) • Testing table with 'V' (40 mm dia.) • Diamond Indenter • Ball Indenter (1/16") • Ball Indenter 2.5mm

		• Ball Indenter 5 mm • Set of test block (2 Nos. Per set) • Test block HB 2.5mm/187.5kgf • Test Block HB 5/250 kgf. • Test Block Rockwell 'C' • Test Block Rockwell 'B' • Clamping device • Allen keys • Rubber bellow for elevating screw 20. • Instruction manual • Cover for machine • Brinell Microscope (25x Magnification) • Dash Pot Oil • Power Cable etc.	
	Approx. Dimensions & Weight of Machine : Manufacturers to specify After Sales Service/ Spares arrangement :Manufacturers to specify Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify Other Additional Information : Manufacturers to specify Spare Parts/ consumables Included : Manufacturers to specify quantities Cost of Packaging :Included Commissioning and Training Cost : Included Lodging and Travel cost of Technicians / Trainer : Included Training Duration : To be quoted by Supplier		
9.	**Working Table** • Table Top Size (Min) : 2100 mm X 1050 mm • Table Height (Min) : 760 mm • Legs and Frame made of MS Angle 50 mm*5 mm Thick • Table Top made of 25 mm Thick Ply Board covered with 1 mm thick Stainless Steel Sheet • Fitted with One Storage Shelf, same as table top, at 150mm Height		**One**
10.	**Pillar Type Drill Machine** Drilling Capacity in Steel Min 25 mm Spindle Travel Min 150 mm Spindle Taper MT – 3 Min no. of Speeds 8 Column Diameter Min 90 mm		**One**

	Diameter of RAM Min 70 mm Auto feed Range Fine No. of feeds Min Three Distance between Spindle Centre to Column face 200mm Approx Max. distance between Spindle nose to Working Table : 550 mm approx Size of Square Table : Min 260 X 260 mm Distance from Spindle Nose to Base : Min 900 mm Size of Base Plate : Min 500 X 300 mm Electric Motor : Min 1 HP Energy Efficient, 3 Phase, 1440 RPM, Crompton/ ABB/ Siemens Make or Equivalent On Off/ Rev Electrical Switch of Standard Make : Included Drill Chuck of Standard Make : Included Drill Vice of Standard Make : Included V – Belt of Standard Make : Included Set of Spanners : Included Cost of Packaging : Included Commissioning and Training Cost : Included Dimensions & Weight of Machine Manufacturers to specify After Sales Service/ Spares arrangement Manufacturers to specify Machine / Process Related Knowledge Sharing(if any) Manufacturers to specify Other Additional Information Manufacturers to specify Exclusions Supplier to Specify	
11	**Nickel Chrome Thickness Testing Measuring Machine** **General Specifications** • Energy dispersive X-ray fluorescence measuring instrument to determine thin coatings , for measurements on mass-produced parts and pc-boards as well as for the solution analysis. • Element range (Min) Chlorine (17) to Uranium (92), Multiple elements simultaneously • Design : Bench-top unit **X-ray source** • X-ray source Tungsten tube with beryllium window • High voltage Adjustable 30 kV, 40 kV, 50 kV • Aperture (collimator) Ø 0.3 mm (Min) • Measurement spot Depending on the measuring distance and on the aperture, the actual measurement spot size is shown in the video image. • Smallest measurement spot: approx. Ø 0.2 mm • Measuring distance 0 … 80 mm (Min), **X-ray detection** • X-ray detector : Proportional counter / SDD / Gas Ionised **Sample orientation** • Video microscope High-resolution CCD color camera for optical monitoring of the measurement location along the primary beam axis, manual focusing and auto-focus, crosshairs	**One**

	with a calibrated scale (ruler) and spot-indicator, adjustable LED illumination of the measurement location • Zoom factor 20x ... 180x **Sample support stage** • Design : Manual X/Y-stage • Maximum travel X/Y - - Manufacturer to specify • Usable sample placement area (Min) : 400 x 400 mm • Z-axis : Electrically adjustable • Travel Z-axis (Min) - 130 mm • Max. sample mass : Manufacturer to Specify) • Sample height upto : 130 mm **Others ;** • All required Compatible Softwares • Calibration foil of Cr coated Ni-foil. • Cu-foil approx. 20.0 µm with frame • One special analyzer cell with external Mo standard for analysis of galvanic baths according to the X-Ray fluorescence method. Suited for measurement direction from top to bottom as well as from bottom to top. • A roll of covering foil length 15 m. Foil for all X-Ray analyzer • Calibrated applications for plastic and metal samples. - (3x plastic, 3x metal). Approx. Dimensions & Weight of Machine : Manufacturers to specify After Sales Service/ Spares arrangement :Manufacturers to specify Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify Other Additional Information : Manufacturers to specify Spare Parts/ consumables Included : Manufacturers to specify quantities Cost of Packaging :Included Commissioning and Training Cost : Included Lodging and Travel cost of Technicians / Trainer : Included Training Duration : To be quoted by Supplier	
12	**Salt Spray Testing Machine** Parameters / Specifications Internal Dimensions (W X D X H) (mm)m-Min : 800 x 500 x 600 Working Volume (Min) : 250 Ltrs Chamber Temperature Range : Adjustable from Ambient to 60 °C Saturator Temperature Range : Adjustable from Ambient to 65 °C	**One**

Salt Spray fall-out Rate	Adjustable from 0.5 to 2.5 ml per 80 cm2 per hr.
High Humidity/Wetting Mode	Temperature : Adjustable from Ambient to + 70°C (158 °F) Humidity: Fixed at 95% - 100% RH.
Drying Cycle	Temperature : Adjustable from Ambient to + 70°C (158 °F) Humidity: Uncontrolled.
Standards of Compliance 1. Atomiser 2. Peristaltic Pump 3. Angle Rack & Hanging Rods 4. Humidity & Conditioning Unit 5. 6. Safety Alarm – • Solution level. • Saturator water level. • Humidity tank water level. • Wick water level. • Air pressure. • Chamber temperature. • Saturator temperature. • Humidity tank temperature. • Conditioning unit temperature.	ASTM, DIN, GM, JIS, SAE, BIS etc., Included

Other Features :

- High corrosive resistant non-metallic glass-fibre reinforced structure
- Single-block design with maintenance free construction
- Independent solution reservoir capacity ranging from 120 ltrs to 200 ltrs
- Easy user access operating and control panel desks
- Pneumatic guided salt-spray lid opening with auto-airpurge interlock
- Controller - 5.7” TFT with PLC. Ethernet and USB interface

Approx. Dimensions & Weight of Machine : Manufacturers to specify
After Sales Service/ Spares arrangement : Manufacturers to specify
Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify
Other Additional Information : Manufacturers to specify
Spare Parts/ consumables Included : Manufacturers to specify quantities
Cost of Packaging :Included
Commissioning and Training Cost : Included
Lodging and Travel cost of Technicians / Trainer : Included
Training Duration : To be quoted by Supplier

13	**Digital Rubber Hardness Tester** **Features Required :** • Accuracy: ≤ ±1 HA/HD • Resolution: 0.1HA/HD • Calibration Certificate Included • Conforms to ASTM D-2240-05, GB/T-531.1-2008/ISO7619-1:2004 • Easy-to-read LCD display with backlight • AC Adapter/Charger and Batteries Included • Measurable material: Natural rubber, Chloroprene (Diane) rubber, Polyester, PVC, Leather, Nitrile rubber, Paraffin, Vinyl, Cellulose acetate products, Polystyrene glass Etc. • Suitable for the A and D Shore hardness standards. • LCD monitor to ensure that the operator misreading. • Measurement results can be printed wirelessly. • Measurement mode: Averaging mode, Max Mode,Maximum average mode. • Control tolerances can be set to alarm beyond the control tolerances. • The work piece Number can be set. • Backlight lit time adjustable. • To save power, the key sound and alarm sound can be shut down. • Measurement data can be stored, browsing, batch printing. **Specifications :**	**One**

Accuracy	≤ ± 1 HA
Resolution	0.1 HA
Display	128*64 dot matrix LCD with LED Backlight
Memory	500 data
Battery Indicator	Battery icon flashes when battery is low
Power	3.6VDC 800mAH Ni-MH rechargeable batteries
Life time	Approximately 30 hours
Charger / Adaptor	Input:110~240VAC, output: 5V 1A
Print	Thermal Printer(Optional accessories) wireless printing
Operating temperature	-10 to 40°C
Operating humidity	20 to 80%
Storage temperature	-20 to +50°C
Storage humidity	5 to 95%

Approx. Dimensions & Weight of Machine : Manufacturers to specify
After Sales Service/ Spares arrangement : Manufacturers to specify

<table>
<tr><td></td><td>Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify
Other Additional Information : Manufacturers to specify
Cost of Packaging :Included
Commissioning and Training Cost : Included
Lodging and Travel cost of Technicians / Trainer : Included
Training Duration : To be quoted by Supplier</td><td></td></tr>
<tr><td>14</td><td>Tensile Testing Machine<table>
<tr><td>Parameters</td><td>Specifications</td></tr>
<tr><td>Capacity</td><td>10 - 10000 Kgf</td></tr>
<tr><td>Test Width (mm) approx.</td><td>25 - 700 mm</td></tr>
<tr><td>Elongation Crosshead Travel (mm) approx</td><td>800mm without Grips.</td></tr>
<tr><td>Load Sensor</td><td>2 Nos. Universal 'S' Type / Pancake Type; high sensitivity with linearity feature and long term repeatability.</td></tr>
<tr><td>Over Load / Travel Safety : Auto stop</td><td>through software : 10% above load cell capacity. / Built in</td></tr>
<tr><td>Load Sensor Accuracy</td><td>: +0.5% of the Load Cell capacity.</td></tr>
<tr><td>Motor Crosshead Speed (mm/min)</td><td>50mm – 500mm / min (1-5 HP, RPM – 1440, with 3 phase Branded Motor)</td></tr>
<tr><td>Tensile Load Measurement Accuracy</td><td>+/- 1%</td></tr>
</table></td><td>One</td></tr>
</table>

	Features	• Machine should be suitable to test Rubber as well as Metal Components . Advanced load sensor sensing through advanced electronics. • Speed Control through Variable Frequency drive automation by Graphic user interface PC. • Highly sensitive load sensor with linearity feature and repeatability • Twin column rugged structure • Safety limit switches for over travel safety • Hardened lead screws/ball screws for frictionless movement • Load cell calibrated by NABL approved proving ring/dynamometers • Advanced Navigation System • High accurate micro-controller based system controls with integrated software • User Friendly software with intuitive icons and robust architecture • Inbuilt hardware/software CD • Easy Data Management. User programmable product identification, lot no., shape of specimen, company name, and operator details etc. • USB compatible for high speed data transfer • Export Test report in excel format, Option to email test reports • Print preview of test reports with Zoom Feature available, online test run status can be viewed graphically or in raw data form • Secured working with key protection feature • Ease of use features: Graph setup, test control wizard, formulae/result calculations, reports, live test panel. • Graph setup: user defined graph scale/range with Graph Title • Test Control Wizard to set test parameters like tension, compression, changeable units in Kgs/N/lbs or cm/mm/inch. Emergency Stop control via switch, computer or mechanical limit switches. • Graphical display of specimen test curves during test • Automatic end test/return to home position through software interface after completion of test. • Immediate analysis of results after test with complete accuracy & precision.	
	Quality Standards	ASTM D412-06a, ASTM D429-73, ASTM D624, ASTM D638-01, ASTM D76, IS 13360-5-7 (1996), IS 3400 (PART 1-1987)	
	Accessories Included	• Self Tighting grip • Wedge Type grip • Vice Type grip • Compression Plate • Flexural Roller Type Grip	
	Approx. Dimensions & Weight of Machine : Manufacturers to specify After Sales Service/ Spares arrangement : Manufacturers to specify Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify Other Additional Information : Manufacturers to specify Cost of Packaging :Included		

	Commissioning and Training Cost : Included Lodging and Travel cost of Technicians / Trainer : Included Training Duration : To be quoted by Supplier	
15	**Rheometer for Rubber Compound Testing** **Parameters** / **Specifications** Oscillation Frequency: 100 Cycles/Minute (1.66 Hz) Oscillation Amplitude: Plus and Minus 1°, 3°, 5° (Half Cycle) Sample Volume: Manufacturer to Specify Temperature: 1. Microprocessor controlled 2. Calibrated range 50- 200°C 3. Independent Upper and Lower Platen Control 4. Accuracy control temperature to within ± 0.5°C Torque Transducer: Cantilever Based Transducer/ Directly shaft mounted in line with Oscillating disc.Four arm Temperature Compensated Semi-Conductor strain gauge bridge. Recording and Display: 1. Directly on-line display on Monitor 2. Memory storage of data 3. Automatic computation of Results 4. Display of Multiple graphs 5. Statistical Analysis 6. Statistical Quality Control Printed data: Inkjet Printer Electric Power Supply: A.C. 175-275 V.50 HZ. Printer & PC: Manufacturer to Specify the details Compressed Air Supply: Manufacturer to Specify the required Pressure Features: 1. User Friendly Software Window based. 2. Online display of Torque vs Time graph. 3. Output data Reports-MI, ML, MH, Ts2,Ts5,Tc50,Tc90, Tp, Optimum cur, Cure Rate, End Temp, Trend, Reversion Time, Cp, Cpk, Values (Bar Graph) 4.Flexible Testing timings 5.Rheograph should appear on monitor screen and after completing the graphs & Data should appear. 6.Temperature Graph should also appear along with Rheograph. Approx. Dimensions & Weight of Machine : Manufacturers to specify	

<table>
<tr><td></td><td>After Sales Service/ Spares arrangement : Manufacturers to specify
Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify
Other Additional Information : Manufacturers to specify
Cost of Packaging :Included
Commissioning and Training Cost : Included
Lodging and Travel cost of Technicians / Trainer : Included
Training Duration : To be quoted by Supplier</td><td></td></tr>
<tr><td>16.</td><td>ETS Bursting Strength Tester<table>
<tr><th>Parameters</th><th>Specifications</th></tr>
<tr><td>Capacity</td><td>40 kg/cm²</td></tr>
<tr><td>Display</td><td>Digital LED / LCD Screen</td></tr>
<tr><td>Specimen Clamping</td><td>Pneumatic 2- 5 Bar pressure</td></tr>
<tr><td>Test Range</td><td>1Kg / cm to 38 Kg / cm</td></tr>
<tr><td>Accuracy</td><td>1% of Full Capacity</td></tr>
<tr><td>Least Count/Resolution</td><td>0.1Kg/cm2</td></tr>
<tr><td>Power</td><td>220 Volts Single Phase</td></tr>
<tr><td>Test fluid</td><td>Glycerin purified (lab grade)</td></tr>
<tr><td>Motor (Min)</td><td>1/4 HP, Single Phase, 1440 rpm</td></tr>
<tr><td>Communication port</td><td>Port Facility to Connect to External Printer/ PC</td></tr>
<tr><td>Accessories :</td><td>• 100 Ml Glycerin bottle
• Rubber Diaphragm pack of 2 nos.
• Calibrated Aluminium foil pack of 4 nos.
• Screw Driver
• Glycerin bowl opening wrench
• Communication cable
• Software CD</td></tr>
</table></td><td>One</td></tr>
</table>

	Quality Standards	IS 1060 (Part I) – 1996 1397 – 1967 (Kraft Paper) 13228 – 1991 (Corrugated Board) 1966 – 1975 (Fabric) 2771 (Part I) – 1977 (Corrugated Box) FCBM 3:90 (Corrugated Fibreboard) ASTM D 774 / D774M-96a – Paper FEFCO TM 4 1997 TAPPI T 403 om-91 (Paper) T 810 om-92 (Corrugated & Solid Fibreboard) T 807 (Paperboard and Linerboard) ASTM D 3786-01, ASTM D 3786 – 80A, ISO 1060 PART-1 1987.	
	General Features	• Single Push Button Operation • Auto Sample locking under selectable pressure range • Peak Hold facility for keeping maximum value of test result in memory • Strong Gripping clamps, Grooved structure of Test Specimen Holder to avoid slippage and intact holding of specimen • Graph test report is Pressure Vs Time • Data can be tabulated in excel format • Calibration lock & key feature. • Incorporates Micro Processor-based Control Panel. • Port Facility to Connect External Printer/ PC • Results of the tests are stored for viewing or for taking printouts as required. • Port facility, with necessary software, to transfer data to computer • Pneumatic Clamping Pressure for ensuring uniform application of pre-determined clamping pressure,to eliminate variations in the readings due to variations in clamping pressure – when done manually. • Readings are displayed digitally with least count of 0.1 kg/cm2.	
	Approx. Dimensions & Weight of Machine : Manufacturers to specify After Sales Service/ Spares arrangement : Manufacturers to specify Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify Other Additional Information : Manufacturers to specify Cost of Packaging :Included Commissioning and Training Cost : Included		

<table>
<tr><td></td><td>Lodging and Travel cost of Technicians / Trainer : Included
Training Duration : To be quoted by Supplier</td><td></td></tr>
<tr><td>17</td><td>Portable Digital Thickness Gauge

<table><tr><th>Parameters</th><th>Specifications</th></tr><tr><td>Range of measurement</td><td>0 - 10 mm</td></tr><tr><td>Least count of dial gauge</td><td>0.001 mm</td></tr><tr><td>Diameter of anvil (Min)</td><td>60 mm</td></tr><tr><td>Diameter of pressure foot</td><td>2.5 mm for film in micron, 10 mm & 25 mm</td></tr><tr><td>Throat depth (Min)</td><td>20 mm</td></tr><tr><td>Standards</td><td>ISO 3616/5084/9073 ASTM D 1777</td></tr></table>
Other Features :

• Determines the thickness of yarns, fabrics, paper, etc.
• Consists of a dial micrometer with a flat pressure foot and a flat anvil.
• Thickness is accurately measured in millimeter through digital gauge.
• Standard load on the pressure foot to ensure accuracy.
• Supplied with calibration & inspection certificates.
Approx. Dimensions & Weight of Machine : Manufacturers to specify
After Sales Service/ Spares arrangement : Manufacturers to specify
Machine / Process Related Knowledge Sharing (if any) : Manufacturers to specify
Other Additional Information : Manufacturers to specify
Spare Parts/ consumables Included : Manufacturers to specify quantities
Cost of Packaging :Included
Commissioning and Training Cost : Included
Lodging and Travel cost of Technicians / Trainer : Included
Training Duration : To be quoted by Supplier</td><td>One</td></tr>
</table>

AFFIDAVIT

I/We (Name) _____ S/o_____ resident of ___

_____ Director / partner / sole proprietor (Strike out

word which is not applicable) of M/s (Name of Firm/ Company along with address)

_____do hereby declare and

solemnly affirm to the fact that my/our above said firm/ company is not black-listed by the

Union or State Government or any autonomous body.

DEPONENT

Address_____

_____

I/We do hereby solemnly declare and affirm 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.

DEPONENT

Dated :

Note : (To be furnished on non judicial stamp paper duly attested by executive Magistrate or Notary Public)

ANNEXURE –III

PRICE SCHEDULE (FINANCIAL BID)

PROFORMA FOR FINANCIAL BID (TO BE UTILIZED BY THE BIDDER FOR QUOTING THEIR RATES)

Sr.No	Item	Qty	Basic Unit price	Discount % age & Amt.	Net Amount after Discount	GST %age & Amt.	Any other Tax / Duties %age & Amt.	Packaging/ Carriage/ Freight etc.	Installation Charges/ Training Charges/ Expenses , if any	Gross Unit Price (In figures and words)

Signature with seal of the firm