



COMSATS University Islamabad, Lahore Campus
Defence Road, Off Raiwind Road, Lahore

Tender No. CUI-LHR-TN-20-1437

Case # 3199

Single Stage Two Envelop Procedure

Title of Tender: **Lab Equipment on C&F Basis for Establishment of Centre for Advanced Technologies in Biomedical Materials (CATBM PC-1)**

TERMS AND CONDITIONS

1. All pages of bidding documents are mandatory to be signed / stamped, meaning thereby bidder agrees to our terms & conditions mentioned herein, failing which the bid may be rejected.
2. Any addition, deletion or modification of any clause of the procurement terms & conditions/ BoQs of CUI Lahore Campus by any vendor will not be acceptable and may lead to rejection of the bid.
3. Only registered Suppliers, who are on Active Taxpayers List (ATL) of FBR, are eligible to participate in tender.
4. The contract will be executed and handed over in satisfactory conditions up to the entire satisfaction of COMSATS University Islamabad, Lahore Campus.
5. Documents along with Pay Order / Demand Draft amounting to **Rs. 1,000/-** as a tender document fee (Non-Refundable) shall be submitted in favor of COMSATS University Islamabad, Lahore Campus to the address given below. No bid will be accepted without tender documents' fee.
6. Part / Advance payments is not allowed.
7. The exact completion/delivery time for is **120 Days (starting from the date of LC Opening)**. The handing over / completion time for this contract is of critical importance.
8. The bid proposal must be quoted inclusive of all freight and packing charges in C&F and to be delivered at Lahore Airport. CUI Lahore Campus shall open the direct LC in favor of Original Manufacturer / Principal and shall also clear the shipment from Custom Authorities.
9. After opening of bids, CUI-Lahore Campus will examine the bids for completeness as per tender document.
10. In case more than one bidder have quoted same rates for an item; the bidder securing more items (in terms of cost) will be awarded the specific item.
11. Purchase order (s) will be awarded to the evaluated lowest or technically recommended bidder (s) on the basis of item wise / subtotal wise / grand total wise according to the nature of BoQs.
12. The bid should be submitted in a sealed envelope up to **December 28, 2020** on or before **1100hrs** and will be opened on the same date **at 1130hrs** in the presence of available bidders.
13. COMSATS University Islamabad, Lahore Campus, will follow the PPRA rule of **single stage two envelope procedure**:
 - i. The bid shall comprise a single package containing **two separate envelopes**. Each envelope shall contain separately the **financial proposal** and the **technical proposal**;

Signature & Stamp of Bidder

- ii. The envelopes shall be marked as “**FINANCIAL PROPOSAL**” and “**TECHNICAL PROPOSAL**” in bold and legible letters to avoid confusion;
 - iii. Initially, only the envelope marked “**TECHNICAL PROPOSAL**” shall be opened;
 - iv. The envelope marked as “**FINANCIAL PROPOSAL**” shall be retained in the custody of the procuring agency without being opened;
 - v. The procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements;
 - vi. During the technical evaluation no **amendments** in the technical proposal shall be permitted;
 - vii. The financial proposals of bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
 - viii. After the evaluation and approval of the technical proposal the procuring agency, shall at a time within the bid validity period, publicly open the financial proposals of the technically accepted bids only. The financial proposal of bids found technically nonresponsive shall be returned un-opened to the respective bidders;
 - ix. and
 - x. The bid found to be the lowest evaluated bid shall be accepted.
14. The envelope should be marked as under;

Secretary, Purchase Committee
COMSATS University Islamabad, Lahore Campus
Defence Road, Off Raiwind Road, Lahore.
Tel: 042-111-001-007, Ext: 875

15. The envelope shall also bear the word “**CONFIDENTIAL**” and following identification quotation of “**Lab Equipment on C&F Basis for Establishment of Centre for Advanced Technologies in Biomedical Materials (CATBM PC-1)**”.
16. The bid form (BoQs) must be duly filled in, stamped and signed by the authorized representative of the bidder.
- 17. If the vendor fails to deliver the goods / services to COMSATS University Islamabad (CUI), Lahore Campus within the given deadline, any of the following can be opted by CUI Lahore campus on the recommendation of the end user and approval of the authority;**
- a. An extension in the delivery period may be granted in case a valid reason/justification with necessary documentary evidence is provided by the vendor supporting the reason for delay.
 - b. A penalty upto 10% of the invoice value may be charged.
 - c. Purchase order may be cancelled along with confiscation of earnest money if the vendor fails to deliver the goods / services after the initial or extended delivery time, as the case may be.
18. If the delivered goods / services are not according to the required quality standards / specifications, the same shall be liable to be rejected after inspection. The vendor would be required to supply as per requirements mentioned in our BoQs, otherwise the purchase / work order will be cancelled after due date with confiscation of earnest money.

19. Deduction of Income Tax and any other tax will be deducted at source according to Government prevailing rules.
20. Payment will be made on submission of Invoice in the name of “COMSATS University Islamabad (CUI), Lahore Campus” with a copy of delivery challan (s) after the complete order has been supplied, inspected and accepted which includes delivery / installation, and COMSATS acceptance / inspection thereof.
21. All prices should be valid for at least **120 days**. Withdrawal or any modification of the original offer within the validity period shall entitle CUI-Lahore Campus to forfeit the earnest money in favor of the CUI-Lahore Campus and / or put a ban on such vendor participation in tenders / works.
22. It is the sole responsibility of the agent / supplier / manufacturer to comply with the applicable laws, be national or international.
23. In case of any dispute or grievance, the matter shall be addressed as per PPRA rules.
24. The CUI-Lahore Campus reserves the right to modify the quantities of goods / services at any time before the award of purchase / work order.
25. Warranty as mentioned in BoQs shall be provided from the date of installation or standard warranty whichever is higher.
26. The Successful/lowest bidder is required to submit the **05% of the total value of Purchase Order as a retention money in form of Call Deposit Receipt/ Local Bank Guarantee with the validity of Warranty Time Period (As mentioned in BoQs)** in favor of COMSATS University Islamabad (CUI), Lahore Campus and it will be released after the completion of warranty period.
27. **The bidder is required to furnish in form of Bank deposit/ CDR / Pay order equivalent to 2% of the total Bid price as Earnest Money crossed in favor of “COMSATS University Islamabad, Lahore Campus”.**
28. **CUI Lahore Campus reserves the rights to reject the bid if;**
 - i. Received without earnest money
 - ii. Received later than the date and time fixed for tender submission
 - iii. The tender is unsigned/ unstamped
 - iv. The offer is ambiguous
 - v. The offer is conditional
 - vi. The offer is from a firm, which is black listed by any Govt. Office.
 - vii. The offer is received by telephone/telex/fax/telegram.
 - viii. Any unsigned / ambiguous erasing, cutting / overwriting etc. is made.
29. The bidder should furnish a certificate as worded below in token of acceptance of all the terms and conditions of the tender otherwise the tender will not be considered under any circumstances.
30. The undersigned affirm that the terms and conditions as contained in this document have been read and accepted and that in the event of selection of my/our rate the agreement in the prescribed form will be entered into:

- **Company / Vendor Name:**.....
- **Postal Address:**.....
- **Tel. / Mobile:**.....**Email:**.....
- **NTN#:**.....**GST#:**.....

Signature & Stamp of Bidder

- **Signature:**
- Please also attach the Certificate supporting being Active Taxpayer as per requirement of FBR.

BoQs of Lab Equipment on C&F Basis for Establishment of Centre for Advanced Technologies in Biomedical Materials (CATBM PC-1)

Technical Portion (Please mention the quoted model/ brand in technical portion with no mention of price otherwise the bid will be rejected)

No change in the BoQs (Specs & Qty.) of CUI-Lahore Campus, as detailed below, is allowed. Any additional information may be mentioned in the blank columns (i.e. model / brand or Price). Any modification in CUI-Lahore Campus BoQ may lead to rejection of bid (fully or partially).				Qty	Please mention the quoted Model / Brand with meeting the all specifications mentioned in BoQs
Sr. #	Equipment Name	Required Specifications			
1	3-D Rapid Proto typing Tool	Purpose	For additive manufacturing of cell loaded small size biomaterials		
		Construct size (mm)	130 x 90 x 70 or larger		
		Resolution (µm)	X, X, Z –axis = 2 or lower		
		Modular heads	2 or more (Interchangeable)		
			• Moveable XYZ direction and able to print in mutiwell plate (6, 24 and 96 well)		
			• thermoplastic print head for heating to temperature 250 °C or higher	1	
			• Heated syringe module with temperature range ≤ 4°C	1	
			• UV curing module	1	
		Stage	• IR curing module	1	
			• Heated and Cooled bed (6 °C or lower to 60 °C or higher)		
		Syringes	• Compatible metal/glass syringes	2	
			• Coaxial needles/system for mixing	1	
			• Two component syringe for mixing	1	
			• Compatible Plastic syringes	20	
			• Plastic tips	50	
Softwares	System supporting softwares with lifetime license, should support STL files	-			
Computer	As per specifications recommended by OEM with original windows	1			
Power back up	as recommended by OEM for optimum operations	1			

		Warranty, Training and Others	<ul style="list-style-type: none"> Warranty - minimum 12 Months from the date of installation (parts and service) Dedicated online minimum 2-day training by OEM engineer in addition to installation site training by local vendor 	-	
2	3-D printer (SLS)	Purpose	<ul style="list-style-type: none"> A selective laser sintering system Should be suitable for additive manufacturing of small size objects from titanium, Co-Cr Alloy and 316 Stainless steel powders. Should be complete with all accessories for necessary operation 		
		Main System	Laser Power: 100 W or higher		
			Build Volume (x, y) mm: 90 x 90 or larger		
			Focus Diameter $\leq 60 \mu\text{m}$		
			Layer Thickness $\leq 50 \mu\text{m}$		
		Handling station	Glove box for safe handling and gas tight docking		
		Blasting cabinet	Portable Blasting unit with Blasting Pistol unit enclosed in a glove box. The blasting unit should have blasting pressure adjustment system along with dust collection and blasting media drying capability. Blasting media should be included with offered system.		
		Wet separator	for extraction of air filled dust and transport it to a receiver tank filled with fluid.	1	
		Nitrogen Generator	<ul style="list-style-type: none"> to provide continuous stream of nitrogen purity $\geq 99.8\%$. With integral oil free compressor 	1	
		Materials (Powders)	Biomedical Grade Co-Cr Alloy	2 kg	
			Biomedical Grade 316 Stainless steel	4 kg	
Biomedical Grade Titanium alloy	4 kg				
Others	Steel blade for recoating	4			
	Rubber and plastic blades	2 each			

			Setup Tool Kit	1	
			Starter kit	1	
			Hepa filters for purifying air inside	6	
			Protective suit	1	
			Protective gloves	50	
			Heat protective glove	1	
			full face respirator	5	
			Particle filter for full face piece respirator	10	
			Powder sieves	2	
			Electrostatic discharge cable with a bracelet	1	
		Computer	provided by OEM with genuine windows	1	
		Software	Complete software to run all requisite functions with license		
		Power backup	As recommended by OEM		
Warranty, training and others	Warranty: 12 Months or more from the date of installation (parts and service)				
	Enabled with Remote Access feature for troubleshooting and identification of the routine problems				
	<ul style="list-style-type: none"> Dedicated minimum 3-days training of 01 person by OEM engineer at OEM site installation site training by local vendor 				
3	Swiss Turn CNC Double Head machining center	Purpose	<ul style="list-style-type: none"> Capable of machining sophisticated parts including dental implants and bone screws. Capable of machining 316L and Ti-6Al-4V materials With double head, tools and cooling unit including all accessories for dental implant manufacturing 		
		Swiss Turn CNC	Turning Diameter Main Spindle (mm)	20 or better	
			Sub spindle turning diameter (mm)	20 or better	
			Turning Length rotation (mm)	190/250 or better	

			Turning Length non bush in mm	45 or better		
			Turning Length Fixed bush (mm)	250/200 or better		
			Main Spindle Drilling/tapping capacity (mm)	Φ10/M8 or better		
			Sub Spindle Drilling/tapping capacity (mm)	Φ8/M8 or better		
			Cross Drilling/tapping (mm)	Φ8/M6 or better		
		Tooling	Number of outer dia. Tool Holder (pcs) ~ 12mm	6 or better		
			Number of internal dia. tool holder (pcs) ~ Φ22mm	4 or better		
			Spindle-1 Cross Live Tool Holder – Er-16 (pcs)	5 or better		
			Sub Spindle Face Live Tool Holder (pcs)	8 or better		
			Control Axis (with c-axis) pcs	8 or better		
			Main/sub spindle bore dia (mm)	26 or better		
		Movements and Rotation	Main/sub spindle speed (rpm)	10000/8000 or better		
			X1/Z1/Y1/X2/Z2/Y2 Rapid Traverse (m/min)	24 or better		
			Spindle-1 cross drilling maximum speed (rpm)	6000 or better		
			Spindle-2 face drilling maximum speed (rpm)	6000 or better		
			Controller	FANUC 32i or equivalent or better		
		Software and Programmer	<ul style="list-style-type: none"> • Post processor for CAD to NC conversion and Machine definitions • LCD display with USB port and PC/MICA Card 			

			Cooling Tank Capacity in liter	200 (or higher)	
			High pressure coolant system 70 bar with sub coolant tank and cutting oil cooler	01 set	
			External Tool holder (6 tools)	01 set	
			Internal tool holder (4 tools)	01 set	
			Side drilling tool holder (5 tools)	01 set	
			Complete Whirling Threading Unit with inserts and insert holders	01 set	
			Parts catcher	1	
			Parts conveyer	1	
			Tools and toolbox	1 set	
			Lighting Device	1	
			Rotary guide bushing holder 190 mm stroke or better	1	
		Accessories	Spindle servo motor	1	
			Main spindle c-axis	1	
			Cutting coolant and inspection	1	
			Cut-off inspection	1	
			Sub spindle and sub spindle c-axis	1	
			Sub spindle tool holder for 8 position milling & drilling	1	
			Stationary tool holder (sub spindle)	1	
			Power tool holder ER16	1	
			Chuck Gripper	1	
			Hexagonal Punching tool holder	1	
			Guide bush and safety lock	1	
			Non guide bush holder	1	
			Spindle Collet	1	
			ER 16 M2 inner tools holders	1	
			ER 16 collet set	1	

			3 position OD tool holder sub spindle	1	
			Deep Hole drilling device	1	
			Y2-axis	1	
			Chip conveyer & cart	1	
			Operational & maintenance manual in English	1 Set	
			Voltage Stabilizer As recommended by OEM	01	
		Machine installation and dental implants trial production and others	<ul style="list-style-type: none"> Machine should be tooled up along with tooling and program to manufacture 3 components of dental implants as per attached drawing Vendor should provide installation, commissioning, training which includes manufacturing of dental implant (as per drawing) at installation site in CUI, Lahore. Local company should have established setup and good reputation along with CNC operation, repair, installation/commissioning staff trained by OEM (certificate required). Two end user certificates from satisfied customers in Pakistan must be provided Warranty: 12 months or more including service and parts 		
04	Automatic 4 axis CNC Lathe Machine	Purpose	<ul style="list-style-type: none"> Capable of machining sophisticated parts including biomedical metallic implants. Capable of machining 316L and Ti-6Al-4V materials. Capable of producing round heads with precise curvature e.g. femoral heads and including suitable attachments and accessories Machine should have 3-axis including an 	01	

			additional y-axis for milling operation	
		Swing over bed (mm)	450 or better	
		Turning diameter (mm)	100 or better	
		Bar capacity (mm)	30 (or higher)	
		Turning length (mm)	100 or better	
		Stroke X/Z (mm)	140 or better	
		X/Z axis traverse (mm)	15 or better	
		Position Accuracy	0.008 mm or better	
		Main spindle speed (rpm)	6000 or better	
		Turret tools	8 (or more)	
		OD tool size (mm)	16	
		boring tool size (mm)	Φ20 (or larger)	
		Inner cutting sleeve (mm)	Φ8, 10mm & 12mm	
		c-axis	Yes	
		3 position servo face live tool or better	Should be included	
		4 position servo cross live tool +Y axis	Should be included	
		Accessories		
		4" Jaw Chuck	01	
		Collet Chuck	01	
		Part Conveyer and part catcher	1 set	
		Heat exchanger	1	
		Coolant device with splash guard	01	
		Tools with tool box	01 set	

	Controller	FANUC Oi or equivalent or better	
	Software and Programmer	<ul style="list-style-type: none"> • Post processor for CAD to NC conversion and Machine definitions • LCD display with USB port and PCMICA Card 	
	Voltage stabilizer	As Recommended by OEM	
	Machine installation & training	<ul style="list-style-type: none"> • Local company should have established setup and good reputation along with CNC operation, repair, installation/commissioning staff trained by OEM (certificate required) • 2 end user certificates from satisfied customers in Pakistan must be provided • Complete installation and On-site training by OEM trained engineer 	
	Warranty	Warranty: 12 months or more including service and parts	

Bid Evaluation Criteria

All bids shall be evaluated in accordance with the following evaluation criteria and other terms & conditions set forth in this bidding document.

- a. The bids shall be evaluated to strictly ensure that the quoted brand/ model meet all the BoQ/ specification requirements given in the tender document for each item.**
- b. In addition to the BoQ requirements, vendors must meet the vendor qualification criteria /company profile requirements (if any), as set forth in this tender document.**
- c. Supporting literature of the quoted model must be attached for verification & technical evaluation of the required specification by the technical committee. In case of any clash is found between the quoted model and the supported literature may lead to rejection of bid.**
- d. The vendor must have an authorized dealer certificate of the quoted Product/Item (Certificate with current year's validity) of Original Manufacturer for all Equipment which shall be also verifiable from the Principal / Manufacture Website or through email. It must be attached with bid otherwise such item/bid may be rejected.**

Financial Portion (Price and Brand/Model to be mention only in Financial Proposal in a separate sealed envelope) Strictly on our BoOs Form.

Vendors are required to provide both unit and total price of each item and calculations must be made carefully to avoid mistakes. However, in case, total price does not match with the unit price and quantity due to calculation error or typo error, any of the following can be opted							
1. The bid may be rejected on the reason of ambiguity (OR) 2. Unit price will be considered as final and total price of the respective item will be calculated by multiplying it with the quantity required. Sub-totals and grand total will also be corrected accordingly.							
No change in the BoQs (Specs & Qty.) of CUI-Lahore Campus, as detailed below, is allowed. Any additional information may be mentioned in the blank columns (i.e. model / brand or Price). Any modification in CUI-Lahore Campus BoQ may lead to rejection of bid (fully or partially).					Prices to be quoted in C&F with all freight & packing charges at Lahore Airport		
Sr. #	Equipment Name	Required Specifications		Qty	Quoted Model / Brand	Unit Price (C&F Lahore Airport) with mentioning of Quoted Currency	Total Price (C&F Lahore Airport) with mentioning of Quoted Currency
1	3-D Rapid Proto typing Tool	Purpose	For additive manufacturing of cell loaded small size biomaterials				
		Construct size (mm)	130 x 90 x 70 or larger				
		Resolution (µm)	X, X, Z –axis = 2 or lower				
		Modular heads	2 or more (Interchangeable)				
			• Moveable XYZ direction and able to print in mutiwell plate (6, 24 and 96 well)				
			• thermoplastic print head for heating to temperature 250 °C or higher	1			
			• Heated syringe module with temperature range ≤ 4°C	1			
			• UV curing module	1			
			• IR curing module	1			
		Stage	• Heated and Cooled bed (6 °C or lower to 60 °C or higher)				
Syringes	• Compatible metal/glass syringes	2					
	• Coaxial needles/system for mixing	1					
	• Two component syringe for mixing	1					

Signature & Stamp of Bidder

			<ul style="list-style-type: none"> • Compatible Plastic syringes 	20			
			<ul style="list-style-type: none"> • Plastic tips 	50			
		Softwares	System supporting softwares with lifetime license, should support STL files	-			
		Computer	As per specifications recommended by OEM with original windows	1			
		Power back up	as recommended by OEM for optimum operations	1			
		Warranty, Training and Others	<ul style="list-style-type: none"> • Warranty - minimum 12 Months from the date of installation (parts and service) • Dedicated online minimum 2-day training by OEM engineer in addition to installation site training by local vendor 	-			
2	3-D printer (SLS)	Purpose	<ul style="list-style-type: none"> • A selective laser sintering system • Should be suitable for additive manufacturing of small size objects from titanium, Co-Cr Alloy and 316 Stainless steel powders. • Should be complete with all accessories for necessary operation 				
		Main System	Laser Power: 100 W or higher				
			Build Volume (x, y) mm: 90 x 90 or larger				
			Focus Diameter $\leq 60 \mu\text{m}$				
			Layer Thickness $\leq 50 \mu\text{m}$				
		Handling station	Glove box for safe handling and gas tight docking				
		Blasting cabinet	Portable Blasting unit with Blasting Pistol unit enclosed in a glove box. The blasting unit should have blasting pressure adjustment system along with dust collection and blasting media drying capability. Blasting media should be included with offered system.				
Wet separator	for extraction of air filled dust and transport it to a	1					

			receiver tank filled with fluid.				
		Nitrogen Generator	<ul style="list-style-type: none"> to provide continuous stream of nitrogen purity $\geq 99.8\%$. With integral oil free compressor 	1			
		Materials (Powders)	Biomedical Grade Co-Cr Alloy	2 kg			
			Biomedical Grade 316 Stainless steel	4 kg			
			Biomedical Grade Titanium alloy	4 kg			
		Others	Steel blade for recoating	4			
			Rubber and plastic blades	2 each			
			Setup Tool Kit	1			
			Starter kit	1			
			Hepa filters for purifying air inside	6			
			Protective suit	1			
			Protective gloves	50			
			Heat protective glove	1			
			full face respirator	5			
			Particle filter for full face piece respirator	10			
			Powder sieves	2			
			Electrostatic discharge cable with a bracelet	1			
		Computer	provided by OEM with genuine windows	1			
		Software	Complete software to run all requisite functions with license				
		Power backup	As recommended by OEM				
		Warranty, training and others	Warranty: 12 Months or more from the date of installation (parts and service)				
			Enabled with Remote Access feature for troubleshooting and				

			identification of the routine problems				
			<ul style="list-style-type: none"> • Dedicated minimum 3-days training of 01 person by OEM engineer at OEM site • installation site training by local vendor 				
3	Swiss Turn CNC Double Head machining center	Purpose	<ul style="list-style-type: none"> • Capable of machining sophisticated parts including dental implants and bone screws. • Capable of machining 316L and Ti-6Al-4V materials • With double head, tools and cooling unit including all accessories for dental implant manufacturing 				
		Swiss Turn CNC	Turning Diameter Main Spindle (mm)	20 or better			
			Sub spindle turning diameter (mm)	20 or better			
			Turning Length rotation (mm)	190/250 or better			
			Turning Length non bush in mm	45 or better			
			Turning Length Fixed bush (mm)	250/200 or better			
			Main Spindle Drilling/tapping capacity (mm)	Φ10/M8 or better			
			Sub Spindle Drilling/tapping capacity (mm)	Φ8/M8 or better			
			Cross Drilling/tapping (mm)	Φ8/M6 or better			
			Tooling	Number of outer dia. Tool Holder (pcs) ~ 12mm	6 or better		
		Number of internal dia. tool holder		4 or better			

			(pcs) ~ Φ22mm					
			Spindle-1 Cross Live Tool Holder – Er-16 (pcs)	5 or better				
			Sub Spindle Face Live Tool Holder (pcs)	8 or better				
			Control Axis (with c-axis) pcs	8 or better				
			Main/sub spindle bore dia (mm)	26 or better				
		Movements and Rotation	Main/sub spindle speed (rpm)	10000/800 0 or better				
			X1/Z1/Y1/X2/ Z2/Y2 Rapid Traverse (m/min)	24 or better				
			Spindle-1 cross drilling maximum speed (rpm)	6000 or better				
			Spindle-2 face drilling maximum speed (rpm)	6000 or better				
			Controller	FANUC 32i or equivalent or better				
		Software and Programme r	<ul style="list-style-type: none"> • Post processor for CAD to NC conversion and Machine definitions • LCD display with USB port and PCMICA Card 					
		Accessories	Cooling Tank Capacity in liter		200 (or high er)			
			High pressure coolant system 70 bar with sub coolant tank and cutting oil cooler			01 set		
			External Tool holder (6 tools)			01 set		
			Internal tool holder (4 tools)			01 set		
			Side drilling tool holder (5 tools)			01 set		

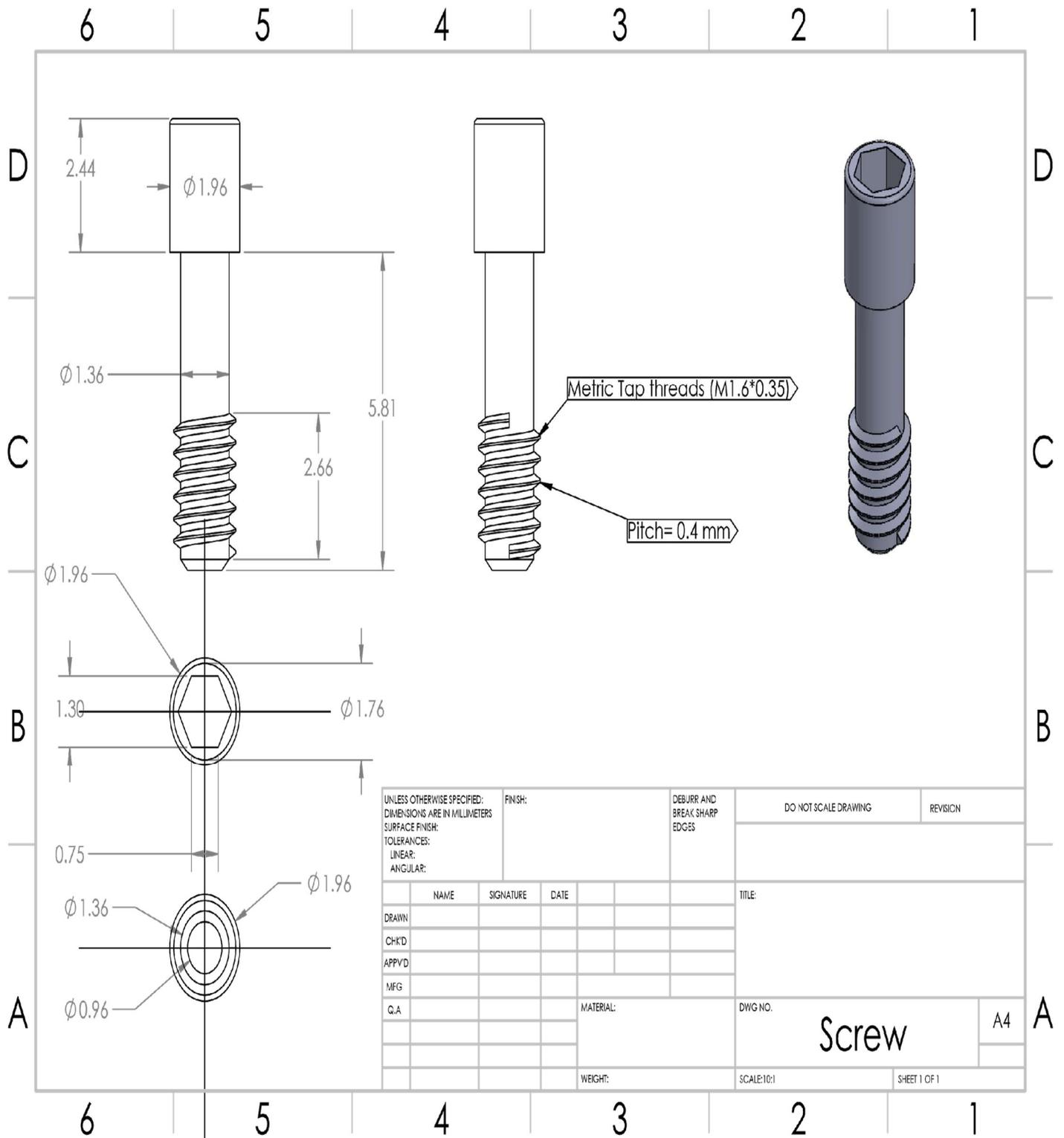
			Complete Whirling Threading Unit with inserts and insert holders	01 set			
			Parts catcher	1			
			Parts conveyer	1			
			Tools and toolbox	1 set			
			Lighting Device	1			
			Rotary guide bushing holder 190 mm stroke or better	1			
			Spindle servo motor	1			
			Main spindle c-axis	1			
			Cutting coolant and inspection	1			
			Cut-off inspection	1			
			Sub spindle and sub spindle c-axis	1			
			Sub spindle tool holder for 8 position milling & drilling	1			
			Stationary tool holder (sub spindle)	1			
			Power tool holder ER16	1			
			Chuck Gripper	1			
			Hexagonal Punching tool holder	1			
			Guide bush and safety lock	1			
			Non guide bush holder	1			
			Spindle Collet	1			
			ER 16 M2 inner tools holders	1			
			ER 16 collet set	1			
			3 position OD tool holder sub spindle	1			
			Deep Hole drilling device	1			
			Y2-axis	1			
			Chip conveyer & cart	1			
			Operational & maintenance manual in English	1 Set			
			Voltage Stabilizer As recommended by OEM	01			

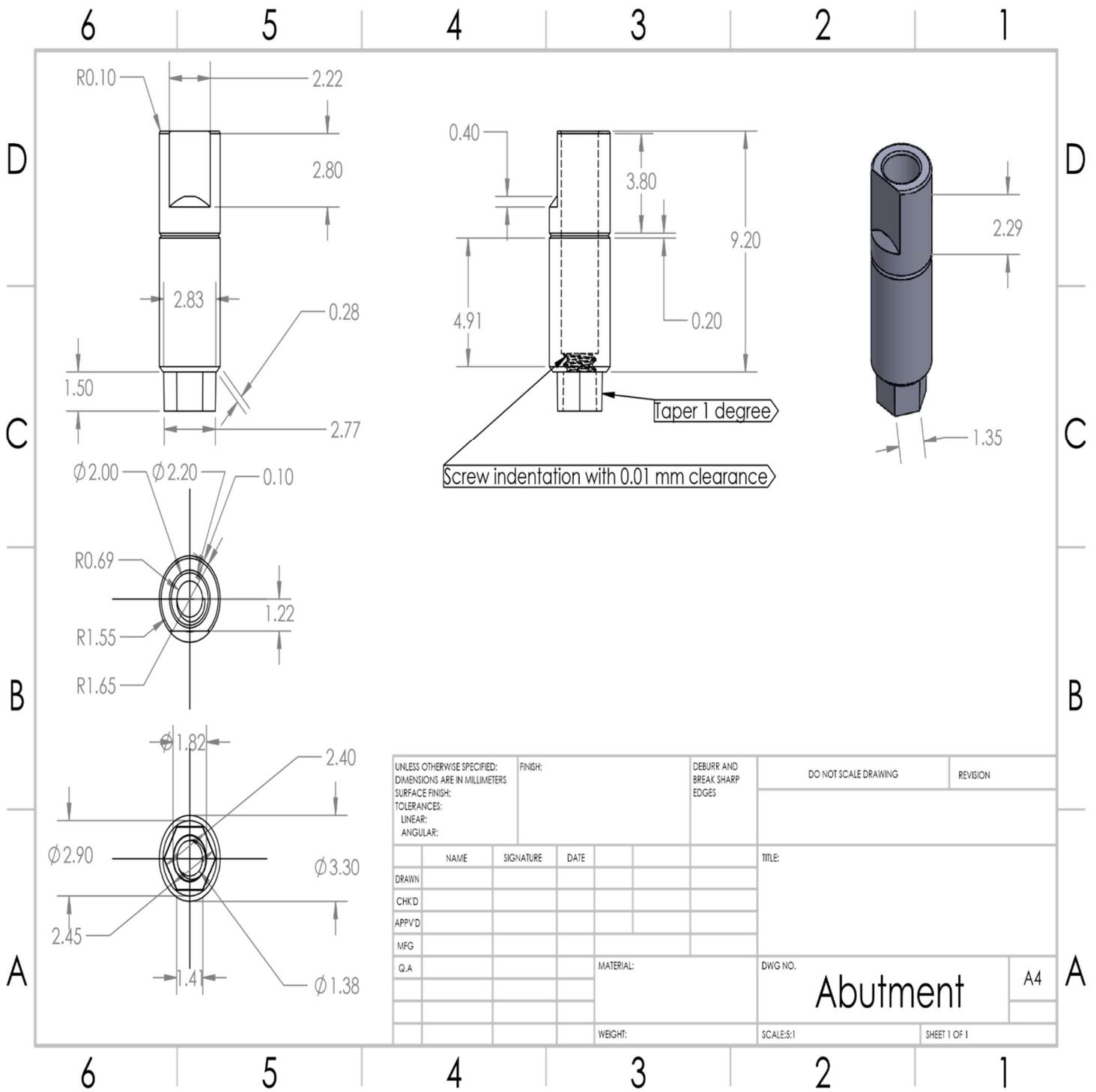
		<p>Machine installation and dental implants trial production and others</p>	<ul style="list-style-type: none"> Machine should be tooled up along with tooling and program to manufacture 3 components of dental implants as per attached drawing Vendor should provide installation, commissioning, training which includes manufacturing of dental implant (as per drawing) at installation site in CUI, Lahore. Local company should have established setup and good reputation along with CNC operation, repair, installation/commissioning staff trained by OEM (certificate required). Two end user certificates from satisfied customers in Pakistan must be provided Warranty: 12 months or more including service and parts 				
04	Automatic 4 axis CNC Lathe Machine	Purpose	<ul style="list-style-type: none"> Capable of machining sophisticated parts including biomedical metallic implants. Capable of machining 316L and Ti-6Al-4V materials. Capable of producing round heads with precise curvature e.g. femoral heads and including suitable attachments and accessories Machine should have 3-axis including an additional y-axis for milling operation 	01			
		Swing over bed (mm)	450 or better				
		Turning diameter (mm)	100 or better				

	Bar capacity (mm)	30 (or higher)			
	Turning length (mm)	100 or better			
	Stroke X/Z (mm)	140 or better			
	X/Z axis traverse (mm)	15 or better			
	Position Accuracy	0.008 mm or better			
	Main spindle speed (rpm)	6000 or better			
	Turret tools	8 (or more)			
	OD tool size (mm)	16			
	boring tool size (mm)	Φ20 (or larger)			
	Inner cutting sleeve (mm)	Φ8, 10mm & 12mm			
	c-axis	Yes			
	3 position servo face live tool or better	Should be included			
	4 position servo cross live tool +Y axis	Should be included			
	Accessories				
	4" Jaw Chuck	01			
	Collet Chuck	01			
	Part Conveyer and part catcher	1 set			
	Heat exchanger	1			
	Coolant device with splash guard	01			
	Tools with tool box	01 set			

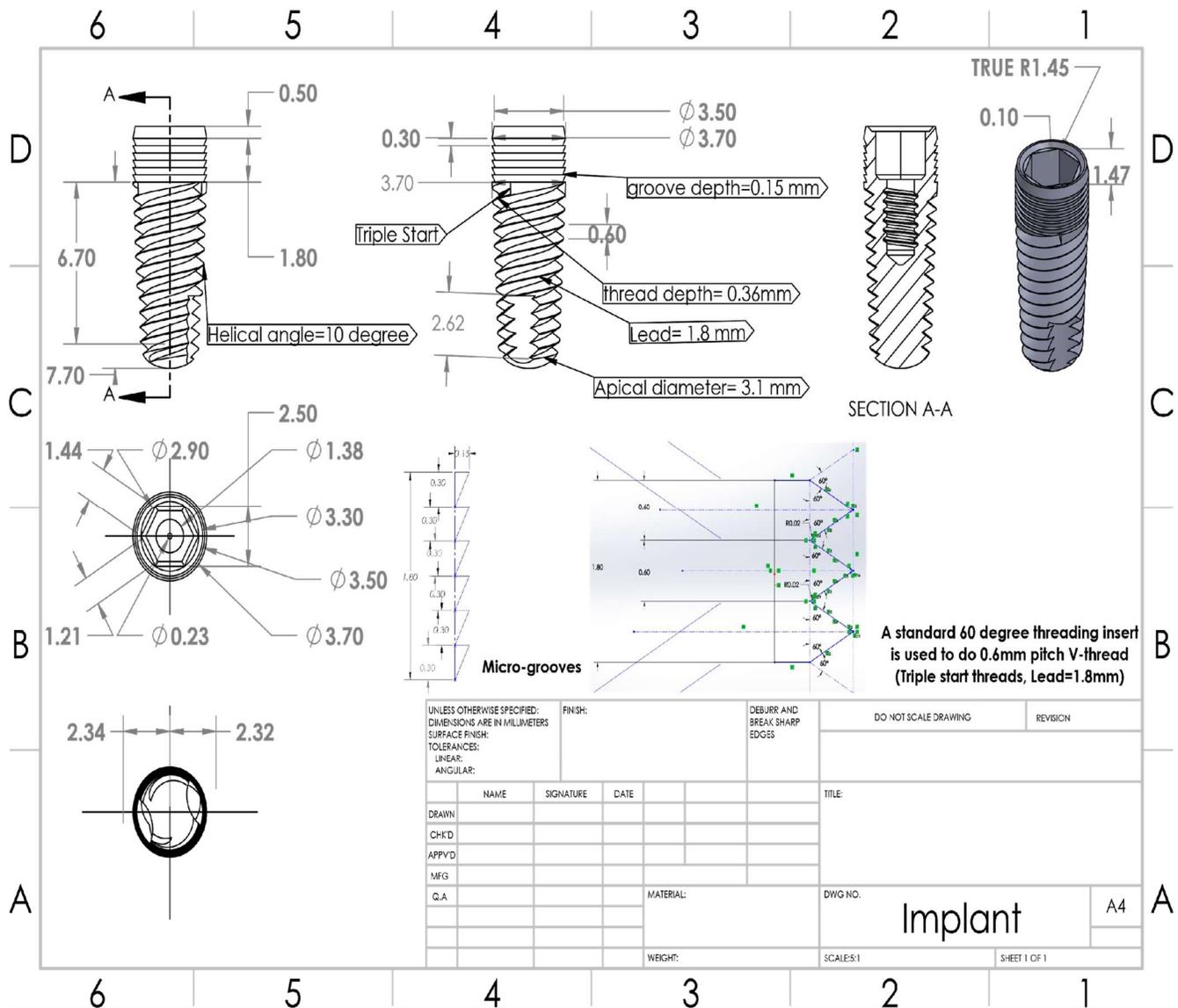
		Controller	FANUC Oi or equivalent or better				
		Software and Programmer	<ul style="list-style-type: none"> • Post processor for CAD to NC conversion and Machine definitions • LCD display with USB port and PCMICA Card 				
		Voltage stabilizer	As Recommended by OEM				
		Machine installation & training	<ul style="list-style-type: none"> • Local company should have established setup and good reputation along with CNC operation, repair, installation/commissioning staff trained by OEM (certificate required) • 2 end user certificates from satisfied customers in Pakistan must be provided • Complete installation and On-site training by OEM trained engineer 				
		Warranty	Warranty: 12 months or more including service and parts				

Reference Diagram for Sr. # 3 i.e. Swiss Turn CNC Double Head machining center





UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:	FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING	REVISION
	NAME	SIGNATURE	DATE		TITLE:	
DRAWN						
CHK'D						
APP'VD						
MFG						
Q.A				MATERIAL:	DWG NO.	
					Abutment	A4
				WEIGHT:	SCALE: 5:1	SHEET 1 OF 1



Special Terms and conditions:

- i. Please submit the technical and financial bid (rates) on our prescribed BoQs Form and clearly mention the quoted model / brands, with complete terms and conditions signed, stamped with both bids, otherwise your bid (s) may be rejected.
- ii. Vendor will be responsible for Onsite Installation, Commissioning & Training of the delivered equipment's.
- iii. Purchase / work order (s) will be awarded on **Item wise Basis.**
- iv. Kindly attach the **Tender fee with Technical Bid and Bid money / CDR with Financial Bid.**
- v. **Multiple rates of an item may also lead to the rejection of bid / item.**