

**HINDUSTAN AERONAUTICS LIMITED
AIRCRAFT DIVISION
BANGALORE COMPLEX**

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POST BAG NO. 1788
VIMANAPURA POST
BANGALORE – 560 017
INDIA

REF NO: - A/BA4/1421-5970/R1

DATE: 03-12-2014

Please upload your quotation along with relevant information for the following item in the E-procurement portal of HAL (eproc.hal-india.com):

SL NO	DESCRIPTION	QTY
01	CNC TURN MILL CENTRE	01

Any queries or correspondences other than quotation should be sent to our email-id sm_pur_ac@hal-india.com.

1) Mode of Tendering:

You are requested to quote in two bid system (Technical Bid & Price Bid).

Technical bid should contain only the compliance matrix to HAL's technical specification (placed at Annexure-B), scanned image/pdf of Demand Draft for Earnest Money Deposit, catalogues/ brochures of the product, point-wise compliance statement against all tender conditions and any relevant product information other than the pricing. Any additional relevant information to be uploaded separately and should be available during Technical Bid opening. **Technical Bid which includes pricing will summarily be rejected.**

Price/Commercial Bid should include the duly filled price schedule format attached at Annexure – A and other commercial terms and conditions. Any additional information which involves pricing like break-up, pricing for spares etc. may be provided in the additional Worksheet attached at Annexure-A1.

Bid must be submitted online through HAL's "e-Procurement system" at <https://eproc.hal-india.com>. Bidder shall submit both "Technical Bid" and "Price Bid" through HAL's e-Procurement Portal only. Bids submitted in any other form, such as courier/ post/ in-person/ fax/ telegram/ telex, shall not be accepted against this Tender.

Bidders are advised, in their own interest, to ensure that their bids are submitted well before the "Due Date & Time of Bid-Submission" of the Tender as HAL's "e-Procurement System" at <https://eproc.hal-india.com> will not allow submission of bids once the closing date and time of the Tender (i.e. Due Date & Time of Bid-Submission) is reached. HAL shall not be responsible if bidder is not able to submit the bid on account of failure in network / internet connection at bidder's end.

2. Tender Schedule:-

SI No.	Activity	Date	Time
1	Tender closing (Last date for submission of bids)	19-Jan-15	23.55 hrs
2	Tender opening dates		
	a) Technical Opening	20-Jan-15	08.00 hrs
	b) Commercial/ Cost bid opening	Will be intimated later to the technically qualified bidders.	

The Commercial Bids of only those firms, whose technical bids are found to be technically acceptable, will be opened.

3. Earnest Money Deposit:

- a) EMD for the value Rs. 300000/- (USD 6000/-) has to be submitted in the form of Demand Draft / Banker's Cheque in favour of Hindustan Aeronautics Limited, payable at Bangalore, enclosed in a cover **with tender reference and due date super scribed, and should reach the following address or the requisite amount to be Wire Transferred before Tender Closing date, by 14.00 hrs.**

**Deputy General Manager [Purchase]
Hindustan Aeronautics Ltd.,
Aircraft Division [Purchase Department]
Bangalore Complex, Bangalore-560017.
PH : 080-22321585**

For Wire transfer, please make use of the following bank details:

**ACCOUNT NAME: HINDUSTAN AERONAUTICS LIMITED, AIRCRAFT DIVISION
ACCOUNT NO: 10918220602
IFSC CODE : SBIN0001114
BANK NAME : STATE BANK OF INDIA, HAL BRANCH
SWIFT CODE : SBININBB147**

- b) Bids shall be rejected in the following instances:
- If the scanned image / PDF of the DD / Banker's Cheque or the wire transfer details for EMD is not available at the e-procurement portal during Technical Bid opening,
 - the original instrument not received before Technical Bid opening,
 - Non-receipt of confirmation from HAL's banker regarding wire-transfer of EMD amount.
 - Offers not accompanied with requisite amount of EMD or EMD not submitted in the specified form.
- c) **EMD amount should be received in full. Any charges applicable should be borne by the bidder.**
- d) EMD will not carry any interest for the period it is retained with HAL.
Forfeiture of EMD: EMD will be forfeited if a bidder withdraws amends, impairs and / or derogates within validity period. EMD of the successful bidder also shall be forfeited, if the successful bidder fails to honour the contract resulting from the tender.
- e) **EXEMPTION:** Bidders exempted from submission of EMD as per Govt. of India directives must submit **certified copy of Govt.** of India authority for such exemption in lieu of EMD. Failure to upload the proof of eligibility for EMD exemption will result in the rejection of bid.
- f) EMD of unsuccessful bidder will be returned after order acceptance by the successful bidder. However, in case of successful bidder, the EMD shall be released after the supply of the equipment or may be appropriated for security deposit or Performance Guarantee (as applicable) for the warranty period.

Terms and Conditions:-

1. **PRICE:** i) Price quoted should be net FOB / FCA, export packed / FAS Vessel with no extra charge whatsoever. The quoted price should include equipment cost, all standard and other accessories in order to meet the tendered specification. If, for special reasons, bidder prices are Ex-Works or F.O.B. plant, bidder must prepay inland transportation's. Port dues and shipment charges up to F.O.B. vessel at port of shipment and claim this amount of actual along with the price of the goods through bank. Bidder's quotation should indicate clearly the extent of such charges.

ii) Price schedule is attached at Annexure-A. Any break-up, prices of optional accessories and further price details to be indicated at format attached at Annexure-A1. Price Bid will be evaluated based on the information provided in the formats Annexure-A and Annexure-A1 only.

iii) In case Bidder has entered into Rate Contract with DGS&D, the Rate Contract, reference to be sent to HAL along with the quotation. Bidder is required to certify that prices quoted are the same as applicable to DGS&D and other Government Departments. DGS&D Rate Contract holders should state whether they are agreeable for supply at DGS&D Rate Contract Rates in the event of placement of order by us on HAL's own order form.

iv) In case an imported item is quoted by bidder, the prices quoted should be in the currency of the country of supply. HAL reserves the right to avail Custom duty exemption on imported item. To avail the exemption, HAL will provide Custom duty exemption certificate (if applicable) to the Bidder. Bidder shall submit the invoice of foreign supplier prior to release of custom duty exemption certificate by HAL. Bidder is advised to quote both the rates (with custom duty exemption and without custom duty exemption). HAL reserves the right to select any of the option for commercial evaluation and ordering.

2. Any order, resulting from the enquiry, shall be governed by the General Terms and Conditions of Contract of HAL and any party quoting against this enquiry shall be deemed to have read and understood these terms and conditions and to have quoted subject to these terms and conditions.

3. When counter terms and conditions of business have been offered by a bidder, HAL shall not be deemed to be governed by such terms and conditions unless specific written acceptance thereof has been given by HAL.

4. No condition and terms, notice of which has not been given in this enquiry by parties submitting quotations, will be considered by HAL, if put forward in subsequent correspondence, after acceptance of the orders etc.

5. **Security Deposit:** Bidders will be required to submit the Security Deposit equivalent to 5% of the total value excluding taxes (If taxes and duties quoted separately otherwise total order value quoted) of the order within 15 days of issuance of purchase order by way of Demand Draft or Bank Guarantee in a prescribed format of HAL from a scheduled Bank in India/Bank of International repute (for foreign vendors) which shall be valid up to 60 days after the completion of contract period / last supply.

Security Deposit will bear no interest. In case the supply order / contract is not executed to the entire satisfaction of HAL the Security Deposit will be forfeited besides initiation of risk purchase action.

In case any claims or any other contract obligations (related to supplies excluding warranty) are outstanding, the bidder shall be required to extend the Security Deposit as required till such time the vendor settles all claims and complete such obligations.

Loading factor of 5% shall be considered while preparing Price Comparative Statement for bidders who have not agreed for submission of Security Deposit.

6. **Taxes:** a) Applicability of the taxes (Sales Tax, Excise Duties, Octroi etc) should be explicitly indicated by the bidder in his response either in percentage or in absolute terms. In the absence of this input the offer would be considered all inclusive.

b) Excise Duty: Excise Duty will be paid only on production of sufficient documentary evidence or a certificate from the Supplier for having paid the Excise Duty at actual. The present rate and tariff details should be indicated.

7. **DELIVERY:** Intimation for Pre-Dispatch Inspection / Acceptance Testing at Supplier's works shall be within 3 – 4 months, from the date of our confirmed P.O. However, we request you to quote earliest possible delivery. Detailed schedule for installation and acceptance at HAL to be indicated.

i) Please confirm whether the item/equipment quoted/ offered is of the shelf or to be manufactured specific-to-type. If the items/equipment is manufactured specific-to-type, bidder to quote firm delivery schedule taking into consideration of the period actually required based on the complexity of the equipment.

In the event of an order, HAL reserve the right to claim towards liquidated damages on the undelivered part of the order. This clause will be strictly followed by HAL. Therefore your delivery schedule should be firm and definite.

ii) In case of Foreign Bidder, please indicate status of export permit based on the present rules/regulations of your country and normal time frame for obtaining such export permission if an order is placed on you in near future and the same should be covered within the delivery schedule indicated.

iii) If installation and commissioning of the equipment is applicable and to be done by supplier at HAL site, bidder to indicate the period required for the above job from the date of intimation of readiness of site at our premises.

iv) Bidder to note that the delivery schedule should be for:

a) Period required for the delivery/dispatch of equipment and

b) Period required for installation and commissioning of the subject equipment after intimation from HAL about readiness of the site.

8. **Pre Dispatch Inspection:**

The capabilities of the machine and various other parameters of the machine will be checked by HAL engineers at the vendors site before the dispatch of the machine. The same has to be proved after the installation and commissioning at HAL's site, for final acceptance of the machine.

Note : HAL reserves the right for waving off the pre-dispatch inspection in the event of unavoidable circumstances.

9. **PAYMENT TERMS:** - 80% of the order value will be released within 30 days from the date of supply of the item at HAL, Aircraft Division, Bangalore. Balance 20% of the order value will be released within 30 days after successful installation and on receipt of Performance Bank Guarantee valid for the warranty period plus one month.

All the payments shall be released through RTGS / CORE / NEFT.

10. All statutory levies as applicable in India at the time of supply will be borne by HAL.

11. **a) Installation, Commissioning and Prove-out :** - Supplier has to install and demonstrate the system at HAL free of cost.

The details of special requirements w.r.t foundation, power, water, environmental conditions, if any, should be furnished along with the quotation.

b) Training: Training to be provided on operation and maintenance of the machine.

12. SAFETY CODE TO WORKMEN DURING INSTALLATION / COMMISSIONING:-

You are requested to ensure all safety precaution of your personnel while installation / commissioning of equipment to prevent any accident. In case of any accident, HAL shall not be responsible for loss caused to your personnel and property. Also the contractor shall at his own expense cover up and protect from any cause for the protection of the work & materials belongs to HAL. Any damage caused must be made good by the contractor at his own expense.

13. HAL is not bound to accept the lowest or any quotations and reserves the right of accepting the whole or any part of the quotation or part of the quantity offered and you must supply the same at the rate quoted.

14. **Liquidated Damages:** In the event of an order, we reserve the right to collect a sum of 0.5% per week of delay or part thereof, subject to a maximum of 10% as our claim towards liquidated damages on the undelivered part of the order.

15. **WARRANTY and Annual Maintenance Contract:** Minimum 12 months warranty should be provided from the date of installation and acceptance. Any defects to be rectified / defective parts are to be replaced, free of cost.

Annual Maintenance Contract : Bidder should quote for Annual Maintenance Contract for a period of 4 years after the warranty Period.

Please Indicate AMC schedule for the machine, which will be operational for 500 hrs per month on 3 Shifts/ day basis.

The Conditions for the annual maintenance contract will be as follows:

- Break Down calls should be attended within 48 hours from the breakdown reporting time.
- Preventive Maintenance shall be carried out every 3 months.
- Repair services shall be subjected to acceptance by maintenance department of HAL.
- Uptime of the machine on monthly basis to be maintained to 95%.

16. **Performance Bank Guarantee:** Performance Bank Guarantee should be given for 10% of the order value from a nationalized / reputed bank and valid for the period of warranty plus 01 month.

In case vendor does not agree for Performance Bank Guarantee / retention of equivalent amount, the offer would be summarily rejected.

17. Tender Evaluation:

- a) The tender will be evaluated on the complete scope of supply as per Technical Specification, item wise.
- b) If the bid is in foreign currency, foreign currency exchange rate as on date of bid opening shall be considered for comparative price statement in Commercial evaluation. Bid with lowest price conforming to the specification will be considered for placement of order.
- c) In addition to price, the most advantageous bid will be ascertained on the basis of :
 - i) terms of Delivery ii) Payment terms iii) compliance to commercial terms and conditions.The evaluation will be based on landed cost at the Division by including freight charges, applicable taxes, and duties to the base price quoted by the vendors.
- d) If two or more bidders quote the same price, HAL reserves the right to seek revised offer from the same bidders and placing order on revised L-1 offer. If same situation prevails then HAL reserve the right to place order on any of them.
- e) Conditional discounts will not be considered in evaluation of tender.
- f) Loading factor of 5% shall be considered while preparing Price Comparative Statement for bidders who have not agreed for submission of Security Deposit.
- g) In case of bidders not agreeing for LD clause, the maximum LD amount / to the extent not agreed LD value, will be loaded in the Comparative Statement, to determine the successful bidder.

18. Please indicate approximate net weight of each of the item and gross weight and dimension of the package to enable HAL to determine the mode of dispatch.

19. Vendor should support for supply of spare parts through out useful life of the machine.

20 Validity of bid: Price quoted should be net and unless otherwise specified should remain valid for our acceptance for a minimum of 180 days from the closing date of enquiry and the material offered should be kept under provisional reservation for this quotation.

21. Please indicate in your tender, whether stores newly manufactured are offered. Where newly manufactured stores are offered and on inspection it is found that reconditioned stores or parts have been used, such stores will be rejected at the contractor's risk and expense.

22. **FALL CLAUSE:** The price quoted should be in no event exceed the lowest price at which you sell the stores or offer to sell stores of identical description to any persons/organization including the purchases by any department of the Govt. of India, the State Govt. or any statutory undertaking of the Govt. of India /State Govt. as the case may be during the period till the completion of the performance of the order placed and during currency of the order.

If at any time during the said period, the contractor reduces the sales price, sells or offers to sell such stores to any person/organization including the purchaser or any department of Central Govt. or any Dept. of State Govt., or any statutory undertaking of the Central or State Govt., as the case may be at a price lower than the price chargeable under the contract, he shall forthwith notify such reduction/sale or offer to sale to the Hindustan Aeronautics Limited and the price payable under the contract for the stores supplied after the date of coming into force of such reduction or sale or offer to sale shall stand correspondingly reduced.

23. **IMMUNITY TO GOVERNMENT OF INDIA:** It is understood and agreed that the government of India is not a party to this agreement and has no liabilities, obligations or rights hereunder. It is expressly understood and agreed that HAL is an independent legal entity with power and authority to enter into contracts solely on its own behalf under the applicable laws of India and General Principles Contract Law. The vendor shall agree, acknowledge and understand that HAL is not an agent, representative or delegate of the government of India. It is further understood and agreed that the government of India is not and shall not be liable for any acts, omissions, commissions breaches or other wrongs arising out of the contract. Accordingly, vendor expressly waives releases and foregoes any and all actions or claims against the Government of India arising out of this contract, not to sue the government of India as to any manner, claim, cause of action or anything whatsoever arising out of or under this agreement.

24. **ARBITRATION:** All disputes or differences whatsoever arising between the parties out of or relating to the construction meaning and operating or effect of this contract or the breach thereof shall be settled by arbitration in accordance with the rules of arbitration of the Indian Council of Arbitration and the award made in pursuance thereof shall be binding on the parties.

25. **JURISDICTION:** The court at Bangalore only shall have jurisdiction to deal with and decide any legal matter whatsoever arising out of the contract in the event of placement of the order.

26. **Agents / Agency Commission:**

The seller confirms and declares to the buyer that the seller is the original manufacturer or authorized distributor / stockiest of original manufacturer or Govt. Sponsored / Designated Export Agencies (applicable in case of countries where domestic laws do not permit direct export by OEMS) of the stores referred to in this offer / contract / Purchase order and has not engaged any individual or firm, whether Indian or Foreign whatsoever, to intercede, facilitate or in any way to recommend to Buyer or any of its functionaries, whether officially or unofficially, to the award of the contract / purchase order to the Seller; nor has any amount been paid, promised or intended to be paid to any such individual or firm in respect of any such intercession, facilitation or recommendation. The Seller agrees that if it is established at any time to the satisfaction of the Buyer that the present declaration is in any way incorrect or if at a later stage it is discovered by the Buyer that the Seller has engaged any such individual / firm, and paid or intended to pay any amount, gift, reward, fees, commission or consideration to such person, party, firm or institution, whether before or after the signing of this contract / purchase order, the Seller will be liable to refund that amount to the Buyer. The Seller will also be debarred from participating in any RFQ / Tender for new projects / program with Buyer for a minimum period of five years. The Buyer will also have a right to consider cancellation of the Contract / Purchase order either wholly or in part, without any entitlement

or compensation to the Seller who shall in such event be liable to refund all payments made by the Buyer in terms of the Contract / Purchase order along with interest at the rate of 2% per annum above LIBOR (London Inter Bank Offer Rate) (for foreign vendors) and Base Rate of SBI (State Bank of India) plus 2% (for Indian vendors). The Buyer will also have the right to recover any such amount from any contracts / Purchase order concluded earlier with Buyer.

27. INFLUENCING THE TENDER: After the bids are opened, Bidder shall not provide any information or send any correspondence, unless asked by HAL in writing. Providing unsolicited information, after the bids are opened, will be construed as disrupting the tender procedure and also may result in rejection of the bid.

Special Notes:

1. The quotation should be comprehensive against specification. Deviations if any, should be clearly highlighted with necessary clarification.
2. Where numerical values are required to be quoted, the comments like “YES, AGREED, WILL BE GIVEN AT THE TIME OF SUPPLY, CONFIRMED, WILL BE CONFIRMED” are not acceptable.
3. Catalogues / Datasheets should be provided for the offered equipment and all the claims in the Technical compliance sheet placed at Annexure-B should be supported by documentary proofs.
4. **Deviations, if any, against the terms and conditions of RFQ to be clearly highlighted else it will be construed as the bidder is complying to all of the RFQ's terms and conditions.**

TECHNICAL SPECIFICATION FOR CNC TURN MILL CENTRE, Qty: 01 No

SL NO.	DESCRIPTION		Essential / Desirable
1	Turn-mill with the rugged base with polymer composite (synthetic granite) reinforcement or casting, added stiffness, superior vibration damping characteristics, resulting in extended tool life. Machine base shall have 45 degree cast iron base. Machine is to be equipped with temperature sensors for spindle, ambient and overall body temperature measurement. The heavy duty integral main spindle motor and sub spindle motor design are to be designed for enhanced thermal stability. Should have BMT turret or VDI turret. Independent Y-Axis for superior part accuracy. High class linear ball guides on X, Y, Z Axes for higher accuracy, faster traverse rates, less wear, and longer life. Necessary Heidenhain (equivalent) closed-loop linear scale system on the X, Y, Z axes are to provide direct measurement to compensate for any ballscrew thermal growth and wear ensuring highest accuracy through the most demanding duty cycles and over the life of the machine. Should possess heavy duty FANUC/SIEMENS motor and drives controls.		Essential
2	Maximum Swing Over Way Covers	Min. 650 mm	Essential
3	Work Capacities		Essential
a	Chuck Size	Min. 250 mm	Essential
b	Maximum Bar Capacity	Min. 65 mm	Essential
c	Maximum Machining Diameter (BMT or VDI)	Min. 300 mm	Essential
4	Main Spindle		
a	Maximum Speed	3000 rpm or above	Essential
b	Maximum Power Rating (Continuous)	25 Kw or above	Essential
c	Maximum Torque (Continuous)	400 Nm or above	Essential
d	Spindle Nose	Min A2-6 or above	Essential
e	Spindle Bore	70-90 mm	Essential
5	Sub Spindle		
a	Speed	Min 3500 rpm or above	Essential
b	Power Rating (Continuous)	Min. 10 kW or above	Essential
c	Torque (Continuous)	Min. 300 Nm or more	Essential
d	Spindle Nose	Min A2-6 or above	Essential
e	Spindle Bore (not bar capacity)	Min 60mm	Essential

f	Travel	Min 625mm or above	Essential
g	Traverse Rate	Min. 30 m/min or higher	Essential
h	Max. Distance from Sub to Main Spindle Face	650mm or above	Essential
i	Min. Distance from Sub to Main Spindle Face	≤ 20 mm	Essential
6	Travels and Feed rates		
a	X-Axis Travel	Min 175 mm	Essential
b	Z-Axis Travel	Min 620 mm	Essential
c	Y-Axis Travel	Min. 80 mm	Essential
d	Continuous Z-Axis Thrust	Min. 10000 Nm	Essential
e	X-Axis Rapid Traverse Rates	Min. 25 m/min	Essential
f	Z-Axis Rapid Traverse Rates	Min. 30 m/min	Essential
g	Y-Axis Rapid Traverse Rates	Min 9 m/min	Essential
7	BMT or VDI Live Tooling Top Plate		
a	BMT or VDI bi-directional	12-station	Essential
b	Shank Dimension (Square or Rectrangular)	25-32mm	Essential
c	Round Shank Tooling	35-40mm	Essential
d	Index Time (rotation/including clamp-unclamp)	≤ 1.5 Seconds	Essential
e	Tool Shank Dia. w/ER 25 Collets	1mm-16mm	Essential
f	Live Tooling Power Rating (30 Min Rating)	Min 7.5 kW	Essential
g	Live Tooling Torque Rating (30 Min Rating)	Min 28 Nm	Essential
h	Live Tooling Max Speed	Min 3000 rpm	Essential
i	TOOL HOLDERS:		
	Turning tool holders--6 Nos(min).		Essential
	Live tool holders --axial--2 Nos(min).		Essential
	Live tool holders--Radial--2 Nos(min).		Essential

	Parting tool holder---1 No(min)		Essential
8	Coolant Facilities		
a	Coolant Capacity	Min 250 litres	Essential
b	Maximum Pressure	Min 12 bar	Essential
c	Coolant Flow Rate (Per-Minute)	Min 20 litres	Essential
d	High Pressure Through Turret	Min 60 bar	Essential
e	Coolant through the Main Spindle & sub spindle		Essential
f	First fill of oil and other lubrication to be supplied along with the machine. Coolant will be provided by HAL.		Essential
9	Accuracy and Surface Finish to be achievable on the machine.		
a	Part Surface Finish Ra	0.0002 mm or better	Essential
b	Overall Axis Repeatability (X, Z)	0.0008 mm or better	Essential
c	Roundness	0.00065mm or better	Essential
d	Total Variation on Diameter	0.003 mm or better	Essential
e	Program Resolution	0.0001mm or better	Essential
f	Turret Indexing Repeatability	0.002mm or better	Essential
g	Positional accuracies of C axis	+/- 3 arc sec or better	Essential
h	Repeatability of C axis	+/- 1 arc sec or better	Essential
10	Other Requirements		
a	Bar Feeder: To be supplied along with the machine.		Essential

	Bar Capacity	65 mm or above	Essential
	Bar Length	2900 mm or above	Essential
	Integration of the Bar Feeder with the machine is the responsibility of the Supplier.		Essential
b	Post processor	To be provided by the supplier	Essential
c	1 set of additional collets for main Spindle to be provided	For Dia as given below. 10 mm ,12 mm,14 mm,15 mm,16 mm,18 mm, 20 mm, 22 mm, 25 mm, 28 mm, 30mm	Essential
	Part Catcher:		
d	i. Main Spindle Part Catcher with conveyer		Essential
	ii. Sub spindle part gripper with conveyer		Essential
e	3 jaw chuck 10 inch capacity for main spindle		Essential
	1 set Hard jaws; 2 sets Soft jaws		Essential
f	3 jaw chuck 8 inch capacity for sub spindle		Essential
g	Chip Conveyor		Essential
11	Control Specifications		
	Latest control in Fanuc or Siemens		Essential
	<u>General</u>		
a	Pendent-mounted Full Control		Essential
b	10" or higher size LCD / LED / TFT Display		Essential
c	Graphic Display		Essential
d	Embedded Ethernet		Essential

e	Program Resolution .0001mm or better	Essential
f	Tool Offset Capability .0001mm or better	Essential
g	Tool Offsets with Geom & Wear (99)	Essential
h	Absolute Encoders pair	Essential
i	Inch/Metric Selection by G-Code	Essential
j	160 Meters (64Kbyte) Part Program Storage	Essential
k	Part Program Storage (128/256/512KB, 2MB or more)	Essential
	<u>Programming Functions</u>	
a	Absolute/Incremental Programming	Essential
b	Additional Custom Macro Variables	Essential
c	Alarm Display	Essential
d	Auto Acceleration/Deceleration	Essential
e	Auto Coordinate System Setting	Essential
f	Background Editing	Essential
g	Canned Cycles (Drilling)	Essential
h	Chamfer/Corner Rounding	Essential
i	Circular Interpolation by R Programming	Essential
j	Constant Surface Speed Programming	Essential
k	Continuous Thread Cutting	Essential
l	Coordinate System Setting (G50)	Essential
m	Custom Macro B	Essential
n	Decimal Point Programming	Essential

o	Diameter/Radius Programming	Essential
p	Direct Drawing Dimension Programming	Essential
q	Display Position, Program, Alarm, History,	Essential
r	Operator Message, Speed, T-Code	Essential
s	Extended Part Program Edit (copy/replace)	Essential
t	External Work piece Number Search	Essential
u	Safe Start Format	Essential
v	Helical Interpolation (for Y-Axis)	Essential
w	Helical Interpolation (for Non - Y-Axis)	Essential
x	Help Screen	Essential
y	Input of Offset Values by (G10)	Essential
z	Interpolation (Linear/Circular)	Essential
aa	MPG Manual Pulse Generator	Essential
ab	Manual Guide i with full color display	Essential
ac	Multiple Repetitive Cycles I (Turning)	Essential
ad	Multiple Repetitive Cycles II (Pocketing)	Essential
ae	Multi Spindle Control	Essential
af	Program Number Search	Essential
ag	Programmable Parameter Input	Essential
ah	Reference Point Return	Essential
ai	Registered Part Program Storage (125)	Essential
aj	Rigid Tapping	Essential

ak	Spindle Orient Main & Sub (Std. on Live Tooling Models)	Essential
al	Spindle Synchronization (Main & Sub)	Essential
am	Sequence Number Search	Essential
an	Single Block Operation	Essential
ao	Skip Function G31	Essential
ap	Stored Stroke Check 2 & 3	Essential
aq	Sub Program Call (10 fold nested)	Essential
ar	Thread Cutting	Essential
as	Tool Life Management (32 Pair)	Essential
at	Tool Nose Radius Compensation (Geom/Wear)	Essential
au	Workpiece Coordinate System (G52-G59)	Essential
	<u>Miscellaneous</u>	
a	Actual Cutting Speed and T-Code Display	Essential
b	Dual Check Safety (Spindle Speed)	Essential
c	English	Essential
d	Flash Card Capability PCMICA (up to 1-GB)	Essential
e	Floating Reference Point Return	Essential
f	Full Keyboard	Essential
g	Ladder Diagram Display	Essential
h	Mechanical Run Meter	Essential
i	One-Degree Spindle Orient	Essential
j	Program Protect	Essential

k	Run Time Parts Count	Essential
l	Self-Diagnostic Function	Essential
m	Y-Axis offset - 99 pair (for Y-Axis)	Essential
n	3D Coordinate System Conversion	Essential
o	Y-axis with angular Tool	Essential
12	Power Requirements	Essential
a	Machine should be able to operate under following power supply conditions: 3 phase, 415 V +/- 10%, 50 Hz +/- 5%, AC supply.	Essential
b	Voltage Stabilizer & Isolation transformer of suitable rating to be provided along with the machine.	Essential
13	Attachment Accessories:	
a	All the standard & special Accessories required for the machine must be offered along with quotation	Essential
b	Air Pressure: Operating air pressure available at HAL site 5-6 bar.	For info
14	Lubrication:	Essential
	Guide ways – To be Lubricated	
15	Working Condition:	
a	The machine and its accessories should be tropicalized to work in Bangalore weather.	Essential
b	All important elements such as Ball Screws, Spindle, and Electrical cabinet must be necessarily cooled, if required.	Essential
16	Safety	
a	Machine should be provided with all safety features as per CE / International norms necessary to protect the machine, control and the operator while in operation from possible damage or injury.	Essential
b	The machine must be provided with all safety features necessary to protect the machine, control system and the operator while in operation from possible damage/ injury.	Essential

c	All machine sections are to be protected from coolant splash and chips.	Essential
d	Automatic machine shutoff with warning in the event of lubrication and coolant failure, spindle off and axis over travel.	Essential
e	During power failure it should be ensured that loaded parts are not damaged	Essential
17	Acceptance test and inspection	
a	The test charts/methods adopted for conforming the geometrical accuracies of the machines are to be furnished by the tenderer along with technical bid.	Essential
b	All the tests required for conforming the geometrical and positional accuracies should be demonstrated to HAL's engineers for acceptance at manufacturer's works as well as at HAL site.	Essential
18	Spares:	
a	A kit of spares for maintenance of the machine & control system for a daily three shift operation basis and for a period of two year after expiry of warranty shall be quoted separately.	Desirable
b	The detailed of spares with quantity should be provided without price details in the technical bids (The commercial bid should include price details of individual items quoted in the spares)	Desirable
c	The supplier should ensure continued supply of spares & service throughout the useful life of the machine (min 10 years)	Desirable
19	Pre-Despatch Inspection: Vendor should offer the machine for inspection by HAL personnel at its works before dispatch of the machine to HAL site. Vendor should indicate the probable duration required for carrying out pre-dispatch inspection. Note: HAL reserves the right for waiving off the pre-dispatch inspection in the event of unavoidable circumstances.	Essential
	Necessary laser calibration should be carried out and the results have to be checked against acceptance norms.	Essential
20	Installation & Commissioning	
a	The installation and commissioning will be done by the Supplier's Engineers at HAL site.	Essential
b	Foundation kit like vibro mounting pads, bolts etc required for foundation to be supplied.	Essential
c	If foundation is required, Drawings of foundation with necessary details to be supplied after receipt of order.	Essential

d	Requirement of power, water and compressed air lines to be specified by the Vendor.	Essential
e	Special requirements like isolation, vibration criteria, air conditioning, dust free atmosphere and flooring if required to be specified.	Essential
f	Data Back up for reinstallation in case of failure should be supplied on CD/suitable media at the end of commissioning.	Essential
g	The data back up should preferably include "NC, MMC, PLC Archive files, Alarm text, Fixed cycles, etc.	Essential
h	USB port to be given at the control panel to take back up from system.	Desirable
21	Prove out:	
a	Vendor has to prove out the component as per the drawing attached at Annexure 1 at HAL site.	Essential
b	HAL will provide the raw material to prove out the component.	For info
c	All Fixtures, Jigs, Tools, Inserts, Tool holders, Pull studs and accessories required for prove out of the above component are to be supplied in one (1) set along with machine.	Essential
22	Training	
	Supplier's engineer should provide training on machine operation and maintenance of the machine at HAL site.	Essential
23	Documentation: Two sets of the following documents in ENGLISH are to be supplied with the machine.	Essential
a	Operator manual	Essential
b	Programming manual	Essential
c	Set of maintenance spares for electrical, mechanical, hydraulic and electronic items for two years. List of the Spares and individual price to be mentioned.	Desirable
d	Maintenance manual	Essential
e	Electrical wiring diagrams	Essential
f	Preventive maintenance check list, trouble shooting charts and guidelines.	Essential
g	Machine test charts	Essential

h	General drawing of machine	Essential
i	Printouts of Ladder Diagram of the machine, machine data, special sub-routines, etc	Desirable
j	Supplier must also supply required special tools for maintenance along with machine if required.	Essential
24	Warranty	
a	Entire machine inclusive of all systems / accessories should be warranted for 12 months (min) from the date of commissioning against all the design, material or manufacturing defects.	Essential
b	Supplier should make two free visits to HAL works as Customer Support program during warranty period.	Essential
c	Supplier to indicate the useful life of the machine on 3 shifts per day basis.	Desirable
25	Experience and track record:	
a	Vendor should give the list of aerospace customers to whom the machines of similar capacity have been supplied in the last two years.	Essential
b	Vendor should provide the performance reports and contact details of two customers - name, designation , Phone number, Email ID, address	Essential
c	HAL reserves the right to verify the information by the vendor. In case the information is found to be false/ incorrect, the offer shall be summarily rejected.	Essential
26	Annual maintenance contract	
a	Supplier should quote for Annual Maintenance Contract for a period of 4 years after the warranty period.	Desirable
b	The conditions for the annual maintenance contract will be as follows:-	
c	AMC schedule for the machine, which will be operational for 500 hours per month on 3-shifts/day basis.	
d	Breakdown calls should be attended within 48 hours from the breakdown time reported.	

e	Preventive maintenance shall be carried out every 3 months or as per the manufacturer's recommendations during warranty period.	
f	Repair services shall be subjected to acceptance by Maintenance Department of HAL.	
g	Uptime of the machine on monthly basis to be maintained to 95%	
27	Model No.- Model No. to be clearly specified. Catalogue of the offered model should be enclosed.	Essential

Instructions for submission of Bids at HAL's e-procurement portal

1. The Tender (bids) should be submitted through e-Procurement Portal of Hindustan Aeronautics Limited (<https://eproc.hal-india.com> or link to e-Procurement portal through www.hal-india.com). Contractors need to get registered with HAL e-Procurement portal to submit their bids online. Bidders should have Class III Digital Signature Certificate (DSC) and should also register with HAL's e-procurement Portal, for submission of Bids.

2. Class III Digital Signature Certificate (DSC) with organization name is a mandatory requirement for suppliers to participate in e-Procurement activities. Class III DSC may be obtained from any of the Certifying Authority(CA's) (Visit- <http://cca.gov.in> for further details):

Suppliers/ Contractors have to obtain Class III DSC from any of the CA's and then register in the HAL e-Procurement portal for participation in e-tender.

For e-Tender related queries & difficulty in document uploading, you may contact at the following e-mail id /Phone Nos.

ephelpdesk@hal-india.com / Ph. Nos. - +91 80 40482133, 22323697/98.

Alternatively, you may also contact: Deputy Manager (Purchase) Tel: +91-80- 22321585.

E-mail: sm_pur_ac@hal-india.com

3. Bidders are also requested to go through instructions/ user manual hosted in HAL e-procurement portal for submission of bids.

4. The bids should be submitted in TWO BID System [Techno-Commercial (Un-priced) bid and Price Bid] as per the instructions given at RFQ document.

(Note: Each document size (attachment size of document) for uploading in e-procurement portal is restricted to 5MB. If the size of the document is more than 5 MB, you are requested to Zip /split the file and submit as applicable.)

5. Offer submitted through e-procurement portal will only be considered.

6. Submission of Tender Document Fee & EMD (Earnest Money Deposit), if applicable: Strictly as per the instructions given in RFQ document.

7. The tender (bids) should be submitted online at website <https://eproc.hal-india.com> only on or before the due date and time specified in the tender. The server date and time as appearing on the HAL e-Procurement portal (<https://eproc.hal-india.com>) will only be considered for the cut-off date and time for receipt of tenders.

8. HAL will not be responsible for the cost incurred in preparation & submission of bids including the cost towards obtaining digital certificate.

9. Bidders shall be required to arrange all resources including Digital Signature Certificate (DSC) and Internet connections at their own cost for participating in online tenders at <https://eproc.hal-india.com>. HAL shall not be responsible for any delays whatsoever in receiving as well submitting offer (online), including connectivity issues.
