

SPECIFICATION

Nomenclature		A/U	Qty
Vertical Honing Machine with all standard and additional accessories as per specificaiton below:		No	01
Ser	BOF Requirements		
1.	Name of the Local Agent with complete address (Address, Telephone, Fax, Email & Website): To be mentioned		
2.	Name of the Manufacturer with complete address (Address, Telephone, Fax, Email & Website): To be mentioned		
3.	Name of Principal with complete address (Address, Telephone, Fax, Email & Website): To be mentioned		
4.	Name of Machine: Vertical Honing Machine		
5.	Qty: 1 (One) Nos.		
6.	Make and Model: To be mentioned		
7.	Purpose: The machine must be capable of honing for improving internal cylindrical surfaces by removing material to achieve a superior surface finish and precise dimension.		
8.	Country of Origin. Group B		
9.	Country of Manufacture and Assembly: Group B		
10.	Port of Shipment. Group B		
11.	Technical Parameters.		
	a. Machine type: Vertical Type.		
	b. Name of OEM: (i) Shanghai Ningyuan Precision Machinery Corp. (ii) Fanhua Machinery Technology (iii) Shanghai Sunnen Mechanical Co. Ltd. (iv) Suzhou Xinneng Precise Machinery Co. Ltd.		
	c. Brand Name: (i) HTT, Honmaster, VHM Series (ii) Fanhua LHE Series (iii) Sunnen SV Series (iv) MB Series.		
	d. Honing diameter: Min 20 mm, Max 135 mm.		
	e. Honing length (Max): Min 200 mm, Max 1650 mm (Max machine capacity to be mentioned).		
	f. Head stroke (Max): 1800 mm or above.		
	g. Max. tube (Work Piece) length: 1650 mm.		
	h. Distance from column to spindle: Min 350 mm.		
	j. Rotation spindle speed (RPM) range: Min 40 rpm or lower and Max 120 rpm or higher.		
	k. Head stroke speed (m/min) range: Min 5m/min or lower and Max 20m/min or higher.		
	l. Rotation spindle motor capacity (KW): Min 5.5 kW or above.		
	m. Vertical movement head motor capacity (KW): Min 7.5 kW (must be servo motor).		
	n. Coolant pump motor capacity (KW): To be mentioned.		
	p. Hydraulic locking motor (KW): Min 1.5 kW or above.		
	q. Machine height with head (mm): To be mentioned (must be suitable for job length).		
	r. Control system:		
	(1) PLC with Touch Screen.		
	(2) Position adjustment: Honing start and end position, honing head current position can be controlled from the panel and current honing diameter must be displayed in the monitor (To be mentioned with diagram).		
	(3) Machine must have automatic measurement system.		
	s. Honing tool expansion: Hydraulic.		
	t. Accuracy/ Roughness: 0.01 mm or better.		
	u. Job clamping process: Hydraulically Operated Chuck.		
	v. Honing oil Tank capacity: To be mentioned.		
	w. Honing oil Specification: To be mentioned.		
	x. Honing oil quantity (supplied along with the machine): 1000 ltr.		
	y. Power Supply: 3 phase, 380~420V, 50 Hz.		
	z. Required air pressure: To be mentioned (If required).		
	aa. Table movement and expansion of honing head shall be hydraulic or pneumatic.		

12. Conditions.

- a. All standard accessories and attachments must be supplied with the machine (price to be mentioned separately with details list).
- b. Magnetic Chip Conveyer, Chiller for honing oil, Air Filtration System with Cartridge must be included with each of the machine as standard accessories.
- c. Software password/key with lifelong validity should be provided with the machine. If software version is changed, supplier must provide new version software when required at free of cost.
- d. Fast moving Spare parts for 5 years must be supplied with the machine (price to be mentioned separately with details list).
- e. Couplers, Valves, Bearings, Bush, Regulators, Sensors, Hydraulic oil, Honing oil (1000 ltr), Pipes and fittings or any others that is required to make the machine functional must be supplied by the manufacturer/supplier.
- f. 2 x Maintenance / repair manuals with mechanical spare parts list along with Circuit Diagram and troubleshooting in English must be supplied with the machine (both hard and softcopy).
- g. 1x Operation / programming manual (Hard and Soft copy) in English must be supplied with the machine.
- h. Following spares must be supplied **additionally** along with each machine in specific quantity and price should be mentioned separately in the financial offer (if applicable):

Ser	Description/Nomenclature	Qty	Rmk
1.	Honing Head (Finish) for automated measurement of final finish on 40, 55, 60, and 82 mm diameters.	2 sets for each dia	
2.	Honing Bar for 40 mm, 55 mm, 60 mm and 82 mm Honing Head.	2 sets for each dia	
3.	Honing Stone (CBN/ Diamond/ recommended materials for mentioned steel and compatible with automatic honing head).	150 sets for each dia	
4.	A-B bonding compounds (Adhesive).	10 pcs	
5.	Measurement gauge	1 set for each dia	

j. Description of operation:

- (1) Material Chrome Vanadium Steel (D6A), hardness HRC 45~50:
 - Initially tube ID before honing is 60.60 mm and after honing it will be 60.75 mm.
 - After Chrome plating (hardness HRC 60~64), tube ID will be 60.66 mm which will be hone to 60.7 mm when tube length is 551 or 560 mm.
- (2) Material Chrome Vanadium Steel (D6A), hardness HRC 45~50:
 - Initially tube ID before honing is 81.90 mm and after honing it will be 82.05 mm,
 - After Chrome plating (hardness HRC 60~64), tube ID will be 81.96 mm which will be hone to 82 mm when tube length is 1410 or 1600 mm.
- (3) Material Chrome Vanadium Steel (D6A), hardness HRC 45~50:
 - Initially tube ID before honing is 40.05 mm and after honing it will be 40.20 mm.
 - After Chrome plating (hardness HRC 60~64), tube ID will be 40.11 mm which will be hone to 40.15 mm when tube length is 530 mm.
- (4) Material Chrome Vanadium Steel (D6A), hardness HRC 45~50:
 - Initially tube ID before honing is 55.05 mm and after honing it will be 55.20 mm.
 - After Chrome plating (hardness HRC 60~64), tube ID will be 50.11 mm which will be hone to 50.15 mm when tube length is 355 or 360 mm.

k. **Quality Assurance Certificate (QAC):** The supplier must provide the original signed Quality Assurance Certificate (QAC), issued by the appropriate authority of the manufacturer's Quality Control Department. This document must accompany the shipping documents and will serve as the Pre-shipment Inspection (PSI) Report.

l. **Installation Requirement at BOF.**

(1) It is the responsibility of supplier to fully integrate and commission the machine at BOF's identified site/ room. Machine installation and commissioning is to be provided by the certified engineers of machine manufacturer from same country or at least from same group of countries at BOF site. Machine installation and commissioning is to be provided by the Supplier at BOF site **(within 60 days)** after receiving machine by BOF.

(2) BOF shall only provide utility service up to near proximity. All other related equipment, connections and fittings or any related items (hydraulic oil) required for successful installation and running of the machine will be provided by the supplier.

(3) After installation and commissioning of the machine, trial run and trial test followed by operational and maintenance training of BOF personnel by the certified engineers of machine manufacturer from same country or at least from same group of countries at BOF site to be provided. The training should cover complete operation, application, software usage (if required) and basic and preventive maintenance, troubleshooting etc. Following information must be given by the supplier along with the offer:

Ser	Items	Responsibility (Supplier/BOF)	Duration	Cost
1.	Site Preparation	BOF and Supplier	To be mentioned	-
2.	Installation and Commissioning	Supplier	To be mentioned	To be mentioned separately
3.	Trial Run	Supplier	To be mentioned	
4.	Training	Functional Training	Supplier and Foreign Trainer	
		Repair and Maintenance Training		To be mentioned
5.	Trial Test	BOF and Supplier	Minimum 15 working days	-

m. **Software and License.** If any software update, license key is required for the machine, supplier must provide this for machine's lifetime at free of cost. Remote or system locking of the machine using software and password is not allowed. If done so, BOF will have the authority to reject the machine and take disciplinary action against local supplier and principal. For default reason if password is used, manufacturer must give updated password to BOF for machines lifetime. PLC backup with software must be supplied with machine.

n. **Payment Terms.** The payment will be made as under:

- (1) **60% of total CFR value will be paid on receipt of shipping documents (Bill of Lading, Commercial Invoice, Packing List, Certificate of Country of Origin, Warranty Certificate, QAC Report, Shipping Clearance Letter etc.).**
- (2) **Next 20% will be paid after successful installation and commissioning of the machine.**
- (3) **Remain 20% will be paid after successful training, trial run and trial test (min 15 working days for trial test).**
- (4) **10% PG will remain in vogue.**

p. The service support with list of spares for 10 years has to be provided by the manufacturer after warranty period is over and the cost will be borne by BOF.

q. BOF provides necessary Water supply, Compressed Air and Electrical (mains) Power supply to near proximity to run the machine. Pipe and fittings to connect the machine with main line, Hydraulic Oil (if required) and any other requirements to run the machine must be provided by local supplier.

r. Machine/Equipment must be manufactured in the year of contract.

s. Warranty for 01 (one) year after acceptance should be provided by the manufacturer.

t. Bidder will submit original Leaflet/ Brochure along with the offer.

Terms and Conditions

Supplier must mention their compliance on the following mentioned points:

1. **The quoted price must be excluding CD and VAT.**
2. A principal/manufacturer can submit **only one offer through one local agent** for any individual item. Offers through multiple local agents by same principle/manufacturer will be **treated as rejected**.
3. To ensure unhindered LC handling the principal must provide a certificate to confirm that their LC operating bank has RMA (Relationship Management Agreement) with the local Banks of Bangladesh.
4. Supplier must **clearly mention (in the technical offer)** that as principal/manufacturer they poses necessary **export permit** from the concern ministry or any other authority of their country. They must also submit a certificate in this regards as per the attached specimen format at **Annex F**.
5. Before signing the contract, Performance Guarantee (PG) @ 10% of total LC value is to be submitted by the Principal in favour of Commandant, Bangladesh Ordnance Factories, Gazipur Cantonment, Gazipur through any scheduled Bank located in Bangladesh (**As per the format at Annex D**).
6. A separate certificate should be provided by the principal originally signed (Computerized or digitally edited signature will not be accepted) stating that they are aware of the requirement of the PG and if the contract is awarded they will be bound to provide the PG as per the format at **Annex E**, otherwise administrative action will be taken against the principal and local agent.
7. The stores should be supplied to BOF at supplier's cost.
8. If the supplier fails to deliver the stores as per the specification and terms of the contract within the stipulated period, the followings will be applicable:
 - a. Cancellation of the contract and/or,
 - b. Decision at the discretion of BOF.
9. BOF is the authority in all matters pertaining to Inspection. Any verdict by the inspection team regarding rejection, acceptance, and /or deviation of machine involving price reduction will be treated as final and will not be subject to arbitration.
10. The Supplier must submit the following attested documents with the schedule:
 - a. Trade License.
 - b. Tin Certificate.
 - c. Up to date VAT Registration certificate.