

**TENDER SPECIFICATION OF GUN BARREL INSPECTION WITH VIDEO SCOPE SYSTEM**

1. **Name of the Item.** Gun Barrel Inspection with video scope system.
2. **Purpose.** To inspect and identify the damage of inside surface of gun barrel (like crack of any other sign of damage) with magnification. It identifies the position of defect (crack, pitting, scoring, erosion etc.) and measures defects size (area, angle, depth, width of damage, crack etc.). It also provides documentation of all defects with database system.
3. **Quantity** : 02 Complete set.
4. **Brand/Model** : To be mentioned.
5. **Year of Manufacture** : 2024 or later.
6. **Name of Manufacturer** : Name and full address to be mentioned.
7. **Country of Origin.** Australia, Canada, South Korea, Japan, Singapore, Turkiye, Greece, Norway USA, UK, France, Germany, Spain, Sweden, Netherlands, Italy, Romania and Denmark.
8. **Manufacturing Country.** Australia, Canada, South Korea, Japan, Singapore, Turkiye, Greece, Norway USA, UK, France, Germany, Spain, Sweden, Netherlands, Italy, Romania and Denmark.
9. **Local Agent.** Name and Full address of the local agent to be mentioned.
10. **Qualification of Bidder.**
  - a. Only an original Manufacturer (the Manufacturer) or an authorized dealer on their behalf, can submit quotation through their authorized agent (i.e. the Bidder) in Bangladesh. Offers from multiple manufactures might be allowed from such an authorized agent in Bangladesh.
  - b. **Certificate/ Document of Authentication** The Bidder must provide following original certificate(s)/document(s) with the offer to authenticate genuineness of source and items(s) in order to establish chain of links from the original Manufacturer to the Bidder:
    - (1) One certificate/document by the Manufacturer in favor of the Bidder ( in case of Manufacturer as the Direct Source).
    - (2) Two Certificates/documents, 1<sup>st</sup> one by the Manufacturer to Authorized Agent and 2<sup>nd</sup> one by the Authorized Agent to the Bidder ( in case of Manufacturer's Authorized Agent/ Seller as the Immediate Source)
    - (3) Three Certificates/documents, 1<sup>st</sup> one by the Manufacturer to Authorized Agent and 2<sup>nd</sup> one by the Authorized Agent to Sub- Agent/ Seller and 3<sup>rd</sup> one by the Sub- Agent /Seller to the Bidder ( in case Sub-Agent /Seller as the Immediate Source).
  - c. **Export License** Obtaining 'Export License' for the sale of Gun Barrel Inspection with Video Scope will be the responsibility of the Bidder ( BN will provide 'End User Certificate'). The Bidder must mention this clearly in offer- except which the offer will be deemed incomplete and disqualified.
11. **Features.** The main features of the system are as follows:
  - a. Inspection of different bore sizes from 12.7 mm to 100 mm gun and measurement of internal diameter of bores.
  - b. Measurement of distance, angle and depth of erosions.
  - c. Live image of cameras.
  - d. Full screen view of defects.
  - e. Software for measuring and image processing.
  - f. Interactive measuring and image processing module with multiple overlay functions (scale, text, data etc).
  - g. Switchable grid overlay over live image for quick initial diagnosis.
  - h. Storing and archiving of measuring results.
  - j. Comparison of archiving and live image.
  - k. Magnifying glass, zoom, measuring protocols, variable print management and report generator.
  - l. Online forwarding of results with any device for communication (e.g. USB).

12. **Scope of Supply.** 02 (Two) sets of Gun Barrel Inspection with Video scope System is to be supplied as per specifications with all standard accessories, manuals, video CD etc. It should be completed in all respect for operation, calibration and measurement of distance, angle, depth, width and length of erosions of inside surface of Gun Barrels of caliber 12.7 mm to 100 mm and barrel length up to 20 feet with remote viewing facility through video camera system. It is to be clearly mentioned, if the quoted system is not suitable for any calibre of gun barrel mentioned above.

13. **Composition.** The system consists of:

- a. An Insertion unit in sensors to measure the nominal dia of bore from 12.7 mm to 100 mm gun.
- b. Integrated high resolution cameras.
- c. An Observation and evaluation unit with recorder and printer.
- d. Other necessary unit needed. To be mentioned.

14. **Technical Specification.**

a. **An Insertion Unit with built in Sensors.**

- (1) Bore insertion unit : Motor driven/Manually operated in left or right, up and down direction to identify the position of the defect/ damage/crack.
- (2) Diameter : To be mentioned.
- (3) Length : To be mentioned.
- (4) Weight : To be mentioned.
- (5) Power Supply : 12 V DC / To be mentioned.
- (6) Motor : Type and rotation angle/ To be mentioned.
- (7) Optics : To be mentioned.
- (8) Laser : To be mentioned.
- (9) Distance Measurement : To be mentioned.
- (10) Angle Measurement : To be mentioned. (In respect of 360° angle, left, right, up and down inside a barrel).
- (11) Depth Measurement : To be mentioned.
- (12) Width Measurement : To be mentioned.
- (13) Area/Size of crack or : To be mentioned.
- (14) Illumination : To be mentioned.
- (15) Any other Feature : To be mentioned.

b. **Camera.** The robotic camera should provide images of high resolution with LCD flat screen display feature with optimum performance in a confined space. Detail specification of the offered Camera to be mentioned.

- (1) Tilt/Rotate : To be mentioned.
- (2) Internal Lights : To be mentioned.
- (3) High Regulation : To be mentioned.
- (4) Sensitivity : To be mentioned.
- (5) Diameter Probe : To be mentioned.
- (6) Image Sensor : To be mentioned.
- (7) Pixel Count : To be mentioned.
- (8) Housing : To be mentioned.

c. **Observation and Evaluation Unit.**

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|------|---------------------|---|
| (1)  | Height              | : To be mentioned.  |
| (2)  | Width               | : To be mentioned.  |
| (3)  | Depth               | : To be mentioned.  |
| (4)  | Weight              | : To be mentioned.  |
| (5)  | Power Supply        | : 220 V AC 50 Hz 1 phase/ To be mentioned.  |
| (6)  | Path Measurement    | : To be mentioned.  |
| (7)  | Laptop PC (Notepad) | : 01x per system Latest version with all necessary accessories.   |
| (8)  | Operating System    | : Microsoft Windows 2010/To be mentioned.   |
| (9)  | Software            | : Must be a "User friendly software package" for scientific and industrial visualization, archiving and measuring tasks. It combines control and image management to a particular unit Backup in a CD/ DVD. |
| (10) | Recorder System     | : Should have facilities to record the observations for further soft copy reproduction.   |
| (11) | Printer             | : Should have suitable printer to get print out (hard copy) of the recorded observations of the system.   |
| (12) | Any other Feature   | : To be mentioned.  |

d. **Measurement Head/ Measurement Probe.** The probe is manually inserted into the barrel using extendable rods. The system measures the caliber and groove diameters.

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| (1) | Length                      | : Length of each caliber to be mentioned.   |
| (2) | Weight                      | : ≤ 9 Kg                                    |
| (3) | Diameter                    | : Diameter of each caliber to be mentioned. |
| (4) | Material                    | : Anodized Aluminum or to be mentioned.     |
| (5) | Colour                      | : To be mentioned.                          |
| (6) | Dept Measurement Technology | : Laser Line deflection or to be mentioned. |

e. **Mentor Visual IQ video probe.** Visual inspections can reveals signs that assist an operator in making informed evaluation and decisions during the condition monitoring of cannon barrels. The Mentor Visual IQ Video Probe must be able to detect visual findings such as corrosion, cracking, pits and tearing-off parts of a caliber or chromium.

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| (1) | Weight       | : ≤ 3.0 kg.  |
| (2) | Dimension    | : To be mentioned.                                       |
| (3) | Water Proof  | : 1 bar or to be mentioned.                              |
| (4) | Image Sensor | : 1/6" color superHAD CCD camera or to be mentioned.     |
| (5) | Memory       | : Minimum 32 GB internal memory.                         |
| (6) | Pixel Count  | : SD or HD format.                                       |
| (7) | Housing      | : Titanium or to be mentioned.                           |
| (8) | Power        | : Lithium ion Battery 10.8V with at least 4 hour backup. |
| (9) | Connectivity | : Wi-Fi, Bluetooth & Network drive mapping.              |

f. **Standard.** The Gun Barrel Inspection with Video Scope System must be designed and constructed in accordance with international standards. The system should be suitable for inspecting gun barrels ranging from 12.7 mm to 100 mm in diameter, as used by the Bangladesh Navy (BN). The specific standard to which the Gun Barrel Inspection with Video Scope System complies, whether ISO, ANSI, BSI, DIN, JIS, OSHA, or any other relevant global standard, must be specified in detail.

15. **Video Presentation.** The supplier will provide a complete Video Presentation (Video CD) covering the following aspects:

- a. Measurement of Caliber (Measurement of nominal dia of bore like 20 mm to 115 mm to find out the erosion of Land, Groove, Rifling, Chamber etc).
- b. Finding out the position of defect (distance, angle etc).
- c. Measurement of defect/damage/crack area and depth of defect etc.
- d. Record and print the study of defect/damage/crack.

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16. **Spare Parts.** List of spare parts for at least 05 years is to be quoted separately with the offer.
17. **Standard Accessories.** Standard accessories for each caliber of guns must be included which are essential to operate the gun barrel inspection with video scope system. List of such items/accessories are to be provided for each composition/unit of Gun Barrel Inspection System.
18. **Optional Accessories.** Optional Accessories (if any) are to be quoted separately.
19. **Shelf Life.** At least 10 years. Shelf Life Certificate is to be provided by the manufacturer with the offer.
20. **Test and Trial.**
- The supplier's engineer will provide detail instructions for installation.
  - The purchaser will carry out installation work as per those instructions under the supervision services provided by the supplier engineer.
  - The supplier's engineer will have to be present during every stage of installation who will also ensure satisfactory test, trial and inspection of the Gun Barrel Inspection System.
  - All necessary materials for assembling installation are to be provided by the supplier. List of the necessary materials is to be submitted.
21. **Packing Details.** Item is to be packed in hermetically sealed condition and standard Sea/ Air-worthy packing. Material and size of package are to be mentioned in the offer.
22. **Brochure/Catalogue.** 01 (One) copy of original product brochure/catalogue in English are to be provided with the offer for evaluation of tender.
23. **Manuals.** 02 (Two) sets of the following documents (in English) will be supplied with the items free of cost:
- Technical Manual on Gun Barrel Inspection for operation Inspection.
  - Technical instruction for maintenance & repair.
  - Parts catalogue.
24. **Manufacturer's Guarantee Certificate.** Certificate from the manufacturer is to be provided with the offer that the items are new, unused and produced by them in the year 2024 or later will be supplied. It is also to be certified that the offered items will comply with the technical specification mentioned in para 14 and that the item will be suitable for Gun Barrel inspection mentioned in para 11, 12 & 13.
25. **Warranty.**
- Warranty is to be given for 01 year from the date of acceptance by BN.** If the equipment remains non-operational for a certain period due to defect in any sub-unit/component during the warranty period. The warranty period will be extended for that period.
  - If any defect/discrepancy arises within warranty period, then the item(s) are to be replaced free of cost including freight within 03 (three) months from the date of notification of the same to the supplier. For warranty replacement, the supplier will collect the defective item(s) from NSD Chattogram and re-supply the same to collecting place after the warranty repair
  - Warranty certificate is to be provided with the offer.
26. **Guarantee.** Guarantee is to be given by the manufacturer that the Gun barrel inspection with video scope system will be suitable to inspect inner surface of gun barrel of caliber from 12.7 mm to 100 mm held in BN and identify the measure the sign of damage/ defect with magnification the performance of item will remain effective in all respect. Guarantee certificate is to be provided with the offer.
27. **Quality Assurance.** Defence Quality Assurance certificate is to be provided by the defence Quality Assurance Organization of the manufacturing country.
28. **Undertaking.** If any part or the whole system found unsuitable, the part or item is to be taken back or changed with suitable one for which supplier is to bear all the cost of to and fro shipment to Bangladesh.
29. **Final Acceptance.** Final acceptance of the Video Scope System will be given after satisfactory Joint Inspection/Test/Trial by Bangladesh Navy. Supplier's representative is to be present during Inspection/Test/Trial.

30. **User List.** List of users indicating the year to be mentioned with the offer.
31. **Shipment and Delivery.**
- a. **Place of Delivery.** The supplier will arrange delivery of all the items to the following address:
- THE COMMANDING OFFICER  
NAVAL STORES DEPOT, CHATTOGRAM  
NEW MOORING, CHATTOGRAM  
BANGLADESH
- b. **Delivery Schedule.** Items will have to be delivered within **180 days** from the date of signing of the contract.
- c. **Port of shipment:** Port of shipment will be in manufacturing Country.
32. **Terms of Payment.** Total (100%) payment will be made in local currency (**without import duties**) after satisfactory Test/ Trial and acceptance by BN.
33. **Validity of Offer.** Up to 30 June 2025.
34. **Compliance Statement.** A compliance statement fulfilling all the required information is to be mentioned with the offer for evaluation of tender. Any deviation from the specification is also to be mentioned in the offer. Mere mentioning of Yes/No or comply will not be enough; detail technical data/information of the offered item are to be provided. Incomplete compliance statement may attribute to cancellation of the offer.

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