
Tender Enquiry

Sub: Supply, testing, fabrication, assembly and qualification of components for gear train assembly of SFSB Underwater cutting saw, Dhruva.

Sir,

Sealed quotations are invited, for and on behalf of the President of India, for Supply, testing, fabrication, assembly and qualification of components for gear train assembly of SFSB Underwater cutting saw, Dhruva, as per the description and scope of work given below.

Sealed quotation, subscribing the tender notice no. with name of work over the envelope, shall be sent to Administrative Officer - III, Reactor Group Office, Dhruva, BARC, Trombay, Mumbai - 400085 so as to reach on or before 27 October, 2020.

The quotation shall be sent through registered post/speed post through Indian postal services only. Quotation delivered by person or through courier will not be accepted and not considered for bidding process.

The quotation shall be in the format of attached schedule-B and shall show the basic cost and GST separately, if applicable and shall include PAN and GSTIN of the firm.

All the probable contractor/vendors, who wish to quote their offers, are requested to understand the nature of work before quote and submit their offers.

The description, scope of the work and the terms and conditions are given below.

1.0 Description:

The SFSB Underwater cutting saw gear box is a fabricated SS reduction gear box. A canned motor, 1500 rpm, is mounted vertically on the gearbox as drive for underwater operation. The entire gearbox is mounted underwater and water only acts as lubricant for the gears. The speed reduction is achieved through 4-stage gear trains of Spur gears & pinions.

2.0 Scope of work:

2.1 Fabrication and supply of components of gear train assembly of the SFSB Underwater cutting saw gear box consisting of one pinion to be mounted on motor shaft, stage I spur gear & shaft with pinion, stage II spur gears mounted on common shaft, stage III spur gear & shaft with
pinion, stage IV spur gear, one pinion to be mounted on output cutter shaft and other items like keys, bushes, spacers and grub screws etc. to make the gear box fully functional. (Refer BARC approved Drawing No. 1,2&3 for specification details)

2.2 Fabrication and supply of manual drive assembly consisting of mounting plate, bearing housing, bush bearings, shaft and crank lever as per drawing.

2.3 Assembly of the supplied gear box along with the above components and testing at vendor’s works satisfactorily.

2.4 Fabrication and supply of shafts with keys, bushes, spacers of above gear train.

2.5 Supply of grub screws and nuts for assembling the gearbox.

3.0 Technical specification:

3.1 Motor HP: 7.5
3.2 Motor shaft RPM: 1500
3.3 Out-put shaft RPM: 355.
3.4 The key way, bush, spacers and grub screws details are available in the enclosed drawings.
3.5 Gear and shaft material shall be of SS ASTM-A-304 and 17-4 PH as specified in the drawing.
4 17-4 PH gear material shall be heat treated along with sample pieces so as to achieve final surface hardness of the bar between 33 to 38RC throughout the depth of raw material.
5 Heat treatment shall be as per ASTM A564. The detailed procedure of the heat treatment (solution annealing and precipitation hardening) shall be submitted by vendor for scrutiny and approval of BARC after placement of work order and prior to heat treatment.

5.5 All Spur gears should satisfy AGMA quality number 6.
5.6 The Supplier shall guarantee that the items conform strictly to the requirements of this specification and will be guaranteed against material and workmanship. The Supplier shall also guarantee that during guarantee period he will replace/repair all the defective stores at no extra cost.

4.0 Testing and Inspection:

4.1 A sample from each variety of raw material bars to be used for fabrication shall be collected in the presence of BARC representative and tested at Govt. approved lab for chemical analysis and physical properties to confirm the specified grade of material as per relevant ASTM code. BARC representative will stamp the balance material for identification.
4.2 NDT (Ultrasonic Testing) shall be done on raw material after proof machining to detect any sub surface defects in presence of BARC representative. Defective items shall be replaced.
4.3 Liquid penetrant test (LPT) shall be performed on all the machined surface of all the components in presence of BARC representative.
4.4 Supplier shall intimate the Purchaser at least a week in advance to enable the Purchaser to carryout the quality surveillance in time.
4.5 The vendor shall submit the heat treatment procedure for scrutiny by BARC.
4.6 Vender shall submit all the original test certificates (physical chemical, impact, heat treatment, DPT and dimensional etc.) to BARC prior to dispatch of the material.
4.7 The finished gears and pinions shall be checked by BARC for contour, physical and dimensional accuracy.
4.8 The specified surface hardness shall be checked by the vendor in the presence of BARC representative.
4.9 The vendor shall demonstrate performance test of the geared drive assembly in presence of BARC representative as per AGMA standards.
4.10 The test sample and testing charges shall be borne by the vendor & arrangements required for the above testing shall be the responsibility of the vendor.

4.11 Supplier shall also submit the following documents for approval.
  • QA plan.
  • Fabrication/ Testing procedure.
• Ultrasonic testing procedure.
• Heat treatment procedure for 17-4 PH material.

4.12 BARC shall carry out audit in all phases of the work i.e. engineering, procurement, manufacturing, inspection, examination and testing, prefabrication and testing.

5.0 **Commercial Terms & Conditions**

5.1 Contractor will arrange transportation for collecting the gear box housing from BARC and return back the same after successful completion of the job. All the charges including the transportation, mobilization etc., if any shall be indicated/included in the quotation.

5.2 The vendor shall quote clearly with item wise break-up of enclosed format as Schedule-B. Any taxes, duties, levies etc. is to be quoted separately.

5.3 The prices quoted by the vendor shall be valid for at least three months from the date of opening of the tender.

5.4 GST registration number and PAN number shall be indicated in the quotation. Quotations without these numbers shall be rejected.

5.5 As per notification issued by the Ministry of Finance, Department of Revenue of Government of India, the goods (other than services) specified herein are exempted from GST to certain extent to including Department of Atomic Energy. Interstate transaction for R&D will attract IGST @ 5% only as per notification No. 47/17-Integrated Tax (Rate) dated 14.11.2017. Transaction within the state will attract Central Goods and Service Tax (CGST) @ 2.5% and State Goods Service Tax (SGST) @2.5% as per notification no. 45/2017- dt. 14.11.2017. This limits the total GST component to 5%. A GST exemption certificate approved by Competent Authority will be issued to the firm before dispatch of the items. Hence this limit may be considered while submitting the quotation.

5.6 Transportation and safe delivery of the items to BARC shall be done by the vendor at his own expense.

6.0 **Payment Terms and conditions:**

6.1 No advance or part payment is admissible. The full and final payment will be made within 60 days after completion of the job in all respects.

6.2 Income tax @ 2% will be deducted from your bill.

6.3 BARC is the final consumer of the goods/services procured and does not intend to make any outward supply. BARC will not avail the benefits of Input Tax Credit and hence, the goods can be supplied without quoting the GSTIN of BARC, Mumbai on the invoice. The invoices taxed under GST, as per rates applicable under the GST Schedule of Rates, shall be admitted for payment.

6.4 For payment the following shall be provided

1. Original Bill in duplicate
2. Taxes need to be shown separately in the bill.
3. Advance stamped receipt.
4. GST number, PAN number to be indicated in the stamped invoice.
5. Attached GST undertaking shall be submitted.

6.5 Payment will be made only through ECS/Core Banking System. Hence, please furnish the bank details such as Bank’s name & address, A/c No. and IFSC code in the invoice.

7.0 **Completion schedule:**

7.1 The job shall be completed within 120 days from the receipt of the work order.

7.2 Time is the essence of the contract. If you fail to comply with this condition you shall be liable to pay compensation.

7.3 Penalty clause: Any delay in the completion of the job which is attributable to the vendor, is liable for a penalty @ ½ % of the work-order value per week (max. 5%).

7.4 In case extension in the job completion period is required, the vendor has to write to BARC & it should be approved.
8.0 Confidentiality Clauses -

8.1 Confidentiality: No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as “Proprietary” in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party.

This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by a party with equal force.

8.2 “Restricted information” categories under section 18 of the atomic energy act, 1962 and “Official Secrets” under section 5 of the official secrets act, 1923:

Any contravention of the above mentioned provisions by any contractor, sub-contractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation.

8.3 Prohibition against use of BARC’s name without permission for publicity purposes:

The contractor or sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC’s name for any publicity purpose through any public media like Press, Radio, T.V. or Internet without the prior written approval of BARC.

Security Instructions

Please indicate whether any of your relatives are employed in BARC or you or any of your employees were employed in BARC or any other units of DAE.

9.0 Vendor Qualification:

9.1 Vendor should have workshop preferably having ISO certification.

9.2 Vendor should have workshop with gear cutting section equipped with sophisticated machine tools like CNC and conventional Gear Hobbing, Gear Shaper, Gear Shaving machines.

9.3 Vendor should have Gear testing lab and quality control department to check the various facets of Gear Geometry such as lead, involute profile, run out, tooth to tooth spacing and contact pattern.

10.0 General information to vendor:

10.1 All the probable contractor/vendors, who wish to quote their offers, are requested to visit the site to understand the nature of work; site constraints etc. before quote and submit their offers.

10.2 The desirous bidders can contact with Shri S. K. Banerjee (Tel.: 022-25594643/6226) for any clarifications.

10.3 The quotation shall be inclusive of all the charges including the transportation, mobilization, testing etc.

Encl: i) Drawings
   ii) Schedule-B

(Manoj Tilara)
MS(M).
For & On behalf of President of India
Schedule-B for Quantity and Cost of job

**Name of work:** Supply, testing, fabrication, assembly and qualification of components for gear train assembly of SFSB Underwater cutting saw, Dhruva..

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of items</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate.</th>
<th>Total cost</th>
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<tbody>
<tr>
<td>1.0</td>
<td>Supply &amp; testing of Stainless steel spur gears of following types &amp; sizes:</td>
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<tr>
<td>1.7</td>
<td><strong>TP-3</strong> integrated shaft with pinion conforming to 17-4 PH: Pitch Dia: 51, OD: 57, No. of teeth: 17, module: 3.0, Pressure angle: 20°. Width: 30. <em>(Shaft L: 140 X OD: 33).</em> (Part No: 9c)</td>
<td>4</td>
<td>Nos.</td>
<td></td>
<td></td>
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<tr>
<td>2.0</td>
<td>SS shaft of following types &amp; sizes:</td>
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<td>2.1</td>
<td>SS shaft conforming to ASTM A 304 of L: 140 X OD: 30. <em>(between Sr. No: 1.4 &amp; 1.5).</em> (Part No: 9b)</td>
<td>4</td>
<td>No.</td>
<td></td>
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<tr>
<td>2.2</td>
<td>SS shaft conforming to ASTM A 304 of L: 140 X OD: 30. <em>(between Sr. No: 1.8).</em> (Part No: 9d)</td>
<td>4</td>
<td>Nos.</td>
<td></td>
<td></td>
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<tr>
<td>2.3</td>
<td>SS shaft for cutter conforming to 17-4 PH of L: 280 X OD: 90. (Part No: 9e)</td>
<td>4</td>
<td>Nos.</td>
<td></td>
<td></td>
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<td>3.0</td>
<td>Phosphor bronze bush of following types &amp; sizes:</td>
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<tr>
<td>3.1</td>
<td>Type-1: Collar OD: 55 X T 5.0; OD: 28, ID: 20, L; 23(for Sr. No: 1.2, 1.3, 1.4 &amp;1.5). (Part No: 10a)</td>
<td>40</td>
<td>Nos.</td>
<td></td>
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<td>3.2</td>
<td>Type-2: Collar OD: 60 X T 5.0; OD: 33, ID: 25, L; 23(for Sr. No: 1.6, 1.7, 1.8 both side &amp; cutter shaft). (Part No:10b)</td>
<td>50</td>
<td>Nos.</td>
<td></td>
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<tr>
<td>3.3</td>
<td>Type-3: Collar OD: 65 X T 5.0; OD: 38, ID: 30, L; 23(for cutter shaft). (Part No: 10c)</td>
<td>10</td>
<td>Nos.</td>
<td></td>
<td></td>
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</table>
3.4 Type-4: Collar OD: 52 X T 5.0; OD: 33, ID: 25, L: 28(for cutter shaft). (Part No: 10d) | 10 | Nos. |
---|---|---|
4.0 **Phosphor bronze spacers of following types & sizes:** |
4.1 Type-1: Spacer; OD: 42, ID: 30, L: 31.5 (for Sr. No: 1.4 & 1.5 Top). (Part No: 14a) | 4 | Nos. |
4.2 Type-2: Spacer; OD: 42, ID: 30, L: 18.0 (for Sr. No: 1.6 & 1.7 Middle). (Part No: 14b) | 4 | Nos. |
4.3 Type-3: Spacer; OD: 42.5, ID: 30, L: 56.5 (for Sr. No: 1.8 & cutter shaft). (Part No: 14c) | 8 | Nos. |
4.4 Type-4: Spacer; OD: 42, ID: 30, L: 5.0 (for cutter shaft). (Part No: 14d) | 4 | Nos. |
5.0 Nuts SS-304, OD: 74, T: 25 for M16 x 1.5 pitch bolts for cutter | 4 | Nos. |
6.0 SS 304 Keys of suitable sizes for assembly (4 Nos. each : 6 types). | 24 | Nos. |
7.0 M-3X 12 (0.5 pitch CSK screw), Grub screw: M-6 x L: 20, M-10 x L: 25, M-12 x L: 20 SS Bolt: 6 Nos. each. | 24 | Nos. |
8.0 Fabrication and supply of manual drive assembly as per drawing and tender specifications | 1 | No. |

| Sub Total | |
| Applicable GST | |
| **Grand Total:** | |

In words:

**Contractor’s signature with stamp:**
MANUAL DRIVE ASSEMBLY

Bill of material
1. Bush- 2 no.-Bronze
2. Housing with flange-1 no.-SS 304L
3. Shaft-1 no.-SS 304
4. Handle-1 no.-SS 304 pipe