

दूरभाष :
TELEPHONE :
तार : बार्क-मुंबई, चेम्बूर.
TELEGRAMS : BARC-MUMBAI, CHEMBUR.
फेक्स संख्या : ९१-२२-२५५० ५१५१
FAX NUMBER : 91-22-2550 5151



दुर्गे,
मुंबई-४०० ०८५.
TROMBAY,
MUMBAI-400 085.

भारत सरकार
GOVERNMENT OF INDIA
भाभा परमाणु अनुसंधान केन्द्र
BHABHA ATOMIC RESEARCH CENTRE

Enquiry No. – BARC/ RTD/RK/MF/ OPA/ 96014 /2018/

Due date – 11/06/2018

SUB: Procurement of raw material, fabrication, inspection and delivery of bronze bushes-2Nos & used working EDM Die -1Set to BARC, Trombay, Mumbai, Maharashtra as per our technical specification No. : RTD/S&CS/PBB/01.

Dear Sirs,

Sealed Quotations are invited on behalf of President of India by Head, RTD in sealed envelope for “Procurement of raw material, fabrication, inspection and delivery of bronze bushes-2Nos & used working EDM Die -1Set to BARC, Trombay, Mumbai, Maharashtra as per our technical specification No. : RTD/S&CS/PBB/01.”

1. **Scope of Work : As per attached specification** ((Technical Specification. No.: RTD/S&CS/PBB/01).
2. **Work completion and Validity period:** Within 2 (two) months after confirmation of order. Price should be firm throughout period of contract. The rates quoted shall remain valid for 60 days.
3. **Price:**

Bidder should quote for the entire job in lump sum (including all taxes and duties) as per our technical specification No.: RTD/S&CS/PBB/01, which involves Procurement of raw material, fabrication, inspection and delivery of bronze bushes-2Nos & used working EDM Die -1Set to BARC, Trombay, Mumbai, Maharashtra. The lumpsum cost will be used for cost comparison, however the quotation should also clearly mention the basic cost for fabricated bronze bushes and EDM DIE costs separately.

4. **Payment:**

- a) Payment will be made as per rules, after the completion of the work to purchaser’s satisfaction against submission of original bill in triplicate and advance stamped receipt. Advance/Part payment cannot be made.
- b) 100% payment shall be made by cheque / ECS (Please furnish details) after completion of job subjected to the satisfaction of purchaser.

- c) **Deduction of Taxes: Income tax @2% and Educational cess as applicable will be deducted from the bill**
- d) A penalty @ 0.5% per week (max. 5%) shall be levied for delay in completion of work.
- e) Payment shall be made only on satisfactory completion of work and on production of bill & advance stamped receipt.

5. Guarantee/Warranty :

The entire job shall be guaranteed for 12 months from the date of completion.

6. Delivery :

All the work shall be completed and delivered to BARC, Trombay, Mumbai, Maharashtra within 2 (two) months after confirmation of Work Order.

7. Confidentiality clause :

a) Confidentially:

Party shall not disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as "Property" in nature by disclosing party shall be kept strictly confidential by receiving party and shall not be disclosed to any third party without the prior consent of the original disclosing party.

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

b) Restricted information:

Categories under section 18 of the Atomic Energy Act, 1962 and "Official Secrets" under section 5 of the official Secret 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.

c) Prohibition against use of BARC'S name without permission for publicity purpose:

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.

8. General:

- a) Proof of ability: A brief list of similar jobs executed, if any, and name of the organization to be furnished.
- b) The bidder shall comply with each and every condition specified in the tender document. The bidder's attention is drawn to the fact that no tender will be considered unless the bidder shall satisfy the purchaser about his technical capability.
- c) The purchaser reserves the right to accept the tender in whole or in part or reject any or all the tenders without assigning any reason. The lowest or any tender shall not necessarily be accepted. Tender not supported by the information

requested in the tender document or not complying with the tender document will not be accepted.

- d) The price quoted must be firm for the entire period of contract and shall not be subjected to any change.
- e) Work extension, if any required, the request letter for the extension shall be forwarded before expiry of contract period to the Engineer-in-charge indicating the current progress and reasons for extension.
- f) Supplier should have GST registration. He should clearly write GST No. and PAN No. in his quotation, otherwise the quotation will not be considered.
- g) Sealed envelope containing quotation must reach on or **before 15.00 hrs., 11/06/2018 To: Head, RTD Engg. Hall No. 7, BARC, Trombay, Mumbai – 400 085.**
- h) The envelope **must be sent by “speed post” only** to reach within above mentioned period. Any other mode of delivery is not acceptable.
- i) Following information shall be clearly written on the envelope containing the quotation **Attention: Shri. Ramakrishna.P, SO/G, RTD Ref. no. BARC/RTD/RK/MF/ OPA/96014 /2018/ , Due date: 11/06/2018 till 15:00 hrs.**
- j) The Bids will be opened on 12/06/2018 at 14.00 hrs.
- k) For any clarification regarding the job bidder shall contact Shri Ramakrishna.P **Ph.022-25593980.**

Thanking you,

Yours Sincerely,

(S.Raghunathan)
Head, Refuelling Technology Division

Technical Specification No.: RTD/S&CS/PBB/01

Technical specification for Procurement of raw material, fabrication, inspection and delivery of bronze bushes-2Nos & used working EDM Die -1Set to BARC, Trombay, Mumbai, Maharashtra.

1.0 Introduction :

Two numbers of phosphorus bronze bushes are required to be fabricated.

2.0 Scope of work :

- Procurement of raw material as per C52100 GRADE C / ASTM B139-07
- Submission of detailed fabrication drawings for approval.
- Fabrication by die sinking EDM process
- Inspection
- Delivery of bronze bushes-2Nos, O-rings-12Nos & used working EDM Die -1Set to BARC, Trombay, Mumbai, Maharashtra.

Technical requirements:

- 2.1 Procurement of phosphorus bronze material as per C52100 GRADE C / ASTM B139-07 for two nos of bronze bushes. The material shall be as per this specification.
- 2.2 The ultrasonic testing of material will be carried out as per ASTM-A-388 and the report submitted to purchaser for approval. Back Wall Echo technique shall be used for carrying out the Ultrasonic examination. A 4 MHz 10mm diameter probe should be used for diameter /thickness below 50 mm. Acceptance Criteria: Any individual indication equal to or exceeding 20% of FSH and/or reduction in back wall echo to 50% of FSH or below, over an area twice the diameter of probe. Supplier shall be responsible for any variation or defect found in material of manufactured component.
- 2.3 The raw materials shall be tested for chemical properties from approved material test laboratories. The test results shall be submitted to the purchaser for approval. If supplier provides traceability of original material with copy of original test certificate, then test can be omitted.
- 2.4 Detailed fabrication procedure of component including achievable geometric tolerances, all fabrication steps involved in fabrication of each component shall be prepared by the supplier and shall be submitted to the purchaser for their approval.
- 2.5 The manufacturing of the components as per Fig1 shall be carried only after approval of raw materials and their final approved fabrication procedure from the purchaser. No design concession shall be allowed.
- 2.6 Precision grinding should be carried out to achieve the specified geometric tolerances on Outer cylindricity, circularity of bore & perpendicularity of sides of bearing bushes. Utmost care should be excised while machining these features to maintain the geometric tolerance as indicated in the drawing. Geometric tolerance supersedes the dimensional tolerance.

- 2.7 The four rectangular slots (1mm deep) with central rectangular island should be manufactured by die sinking EDM process. The central rectangular island has a circular groove and a through hole at center connecting outer annular groove. The EDM Die used for machining bearing bushes should be delivered in working condition along with the bronze bushes.
- 2.8 12nos of Parker O-rings 2-032 should be supplied along with bushes.
- 2.9 Unless otherwise stated on applicable drawings/sketches tolerances on the linear dimensions shall be as per IS-2102.

3.0 Applicable standards & Drawings :

IS-2102	: Tolerances on linear dimensions
ASTM-A-388	: Ultrasonic testing
ASTM B139-07	: Phosphorus Bronze

S.No.	Drg. No.	Title
1.	Fig No.1	Bronze bushes

4.0 Workmanship :

Workmanship shall be in accordance with high grade practice. All the components shall be adequately cleaned to the satisfaction of the purchaser before carrying out Inspection.

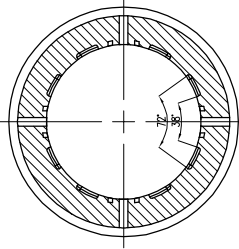
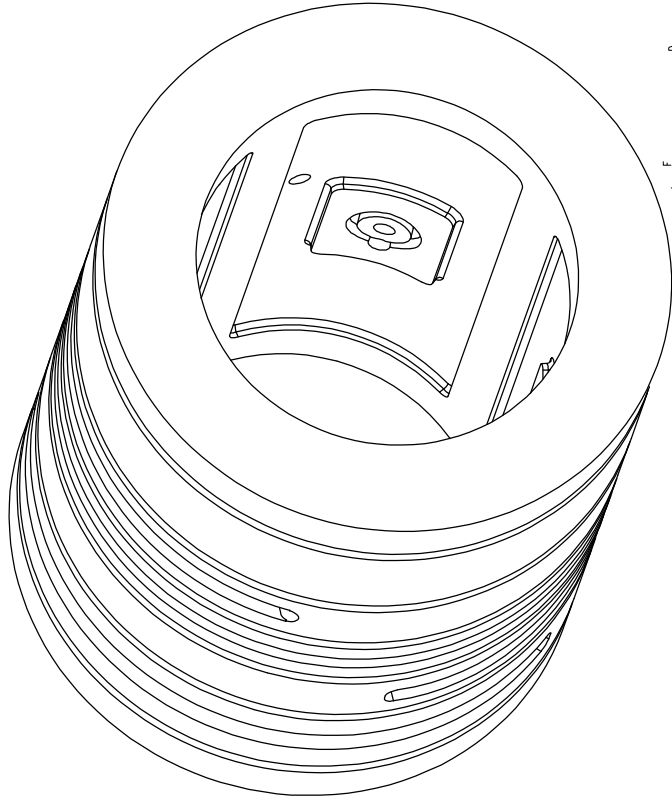
5.0 Inspection requirements:

The contractor shall provide all the services & facilities for all the inspection & test required under this specification. Third party inspection of dimensions and geometric tolerances (strictly using CMM) of all components as mentioned in drawings has to be carried out at 25Deg C and submitted as inspection report. The testing shall be conducted in a manner satisfactory to, and shall be subject to the approval of Purchaser's engineer. The Purchaser's engineer shall have right to specify additional inspection/testing if considered necessary to ensure that the quality of the job is consistent with this specification.

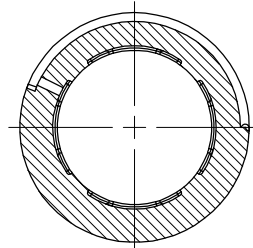
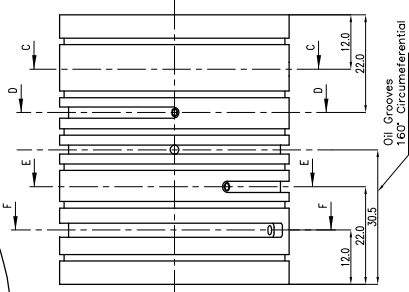
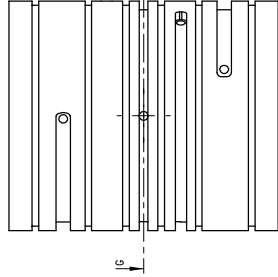
- a) Dimensions and geometrical tolerances for all components shall be checked and submitted as inspection report to the purchaser before the visit for inspection.
- b) All inspection tools, apparatus, gauges and equipments shall be provided by supplier and shall be carried by supplier. Some of the random selected components and their dimensions shall be inspected by the purchaser representative. No deviation shall be allowed between supplier's report data and actual data obtained/observed in presence of purchaser's representative. Any such deviation will cause for rejection of inspection report and component.

7.0 Acceptance Criteria :

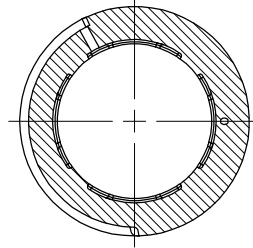
Dimensional inspection report of the component should meet dimensions indicated in our design drawings.



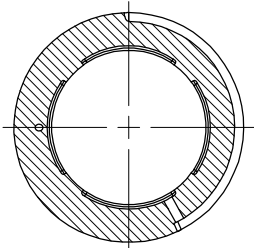
SECTION G-G



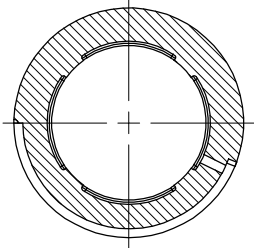
SECTION C-C



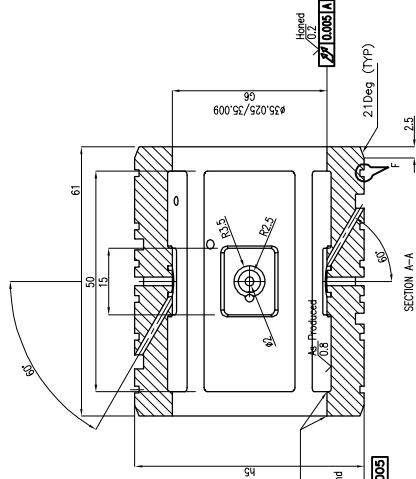
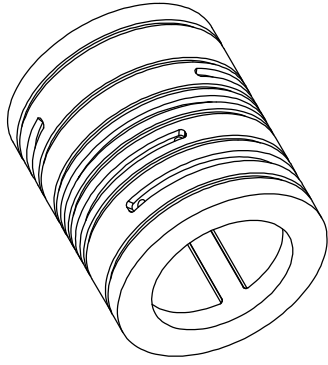
SECTION D-D



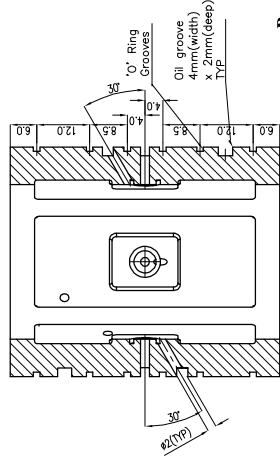
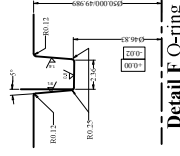
SECTION E-E



SECTION F-F



SECTION A-A



SECTION B-B

Fig(1) Bronze bush
Mati: ASTM B139-07
Qty. : 2 Nos.

Parker O-ring 2-032
Qty. : 12 Nos.