



## TRAVANCORE TITANIUM PRODUCTS LIMITED

Kochuveli, Thiruvananthapuram 695 021  
Phone : 0471 2502163 FAX: 0471 2501533

CD/CN/VC-156/Turbine Rotor/18-19

03.10.2018

### Tender Notice

#### **“Reconditioning of old worn out RLHA-19 Turbine Rotor Assembly.”**

Sealed quotations are invited from experienced Contractors in prescribed format for doing the “**Reconditioning of old worn out RLHA-19 turbine rotor assembly.**” The tender shall be enclosed in an envelope, sealed and superscribed with Tender No. Date and Due Date and description as “**Reconditioning of old worn out RLHA-19 turbine rotor assembly**”.

The same shall then be forwarded to “**The Dy.General Manager(Comml), Travancore Titanium Products Limited, Kochuveli P.O, Thiruvananthapuram, Kerala Pin 695 021.**”

The tender form can be obtained from the office of the under signed between 9.00a.m and 4.00 p.m on all working days except Saturdays, after remitting the tender form cost. **Cost of tender form is Rs.1,910/- + GST @ 18% ( Rs.2,254/-)** . Tender document can also be downloaded from our website [www.travancoretitanium.com](http://www.travancoretitanium.com) and shall submit the Tender along with DD against the Tender Form cost & EMD in favour of Travancore Titanium Products Ltd., payable at Thiruvananthapuram.

**EMD: Rs.23,868/- (refundable) /-** (By cash/DD)

Sealed Tenders will be received at our office on all working days and the last date for submitting the same is on **23.10.2018** at 12 noon. Tenders received after the due date & time will not be accepted. Fax/email offers also will not be accepted.

The bids will be opened on 2 pm on **23.10.2018** in the presence of the tenderers present at that time.

for TRAVANCORE TITANIUM PRODUCTS LIMITED

  
**Dy. General Manager(Comml)**

Encl: proforma

Signature of the bidder:

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#### “Reconditioning of old worn out RLHA-19 Turbine Rotor Assembly.”

##### 1.) Scope of Work:-

Repair of turbine rotor of RLHA -19 turbine in which shaft and 1st row blades are in damaged condition.

The Expected scope of work is as follows:

- . Pre-inspection of Rotor
- . Required repair activity report submission
- . Replacement of the rotor shaft area
- . Re-blading of 1<sup>st</sup> row blades and reconditioning of 2<sup>nd</sup> row blade
- . Dynamic balancing of rotor as per API standard

##### Machine details

Description : Drive Turbine Rotor  
Make : Dresser-Rand, USA. (Coppus)  
Model : RLHA 19  
Machine S/N : 94H9140  
Power rating : 645 HP  
Speed : 4339 rpm

#### **SCOPE OF WORK FOR TURBINE ROTOR INSPECTION**

1. Receipt, unloading and unpacking: Record any findings and inform to T.T.P.L
2. Cleaning ,degreasing
3. Rotor shall be cleaned, de-greased with petroleum solvent and dried with compressed air.
4. Grit blasting:
5. Grit blasting shall be carried out using glass beads at blading area after protecting with sensitive areas
6. Visual inspection:
7. Rotor shall be visually inspected and recorded for findings. · Check all 2 stages of rotor blades for mechanical damage and erosion, undercutting at base of the blades, torn blades, dents, rubbing, erosion, scored bearing journals / bearing area, worn seal.

Signature of the bidder:

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8. Dimensional Check:
9. Checking of all critical dimensions of rotor and recording.
10. Checking of run out of rotor and recording.
11. NDT inspection as below:
  - Wet Fluorescent Magnetic particle examination of the following areas
    - a. Accessible areas of all blades.
    - b. Blade disc.
12. Report Preparation. Prepare the inspection report with repair assessment and forwarding to T.T.P.L.

### **WORK SCOPE FOR ROTOR REPAIR & DYNAMIC BALANCING:**

#### **13. Replacement of shaft**

- Disassembly of blade disc from old damaged shaft.
  - Develop the drawing for the new shaft.
  - Procurement of shaft raw material as per OEM specifications.
  - Machining of new shaft as per developed drawing.
  - Apply hard chrome plating at seal areas as per drawing.
  - NDT inspection of new shaft.
  - Dimensional and run out inspection of new shaft.
  - Balancing check of rotor shaft.
14. Removal of old blades from 1st & 2nd rows of disc .Cleaning and inspection of disc grooves.NDT of disc groove .Reblading of full set of 1<sup>st</sup> row blades. Inspection of 2<sup>nd</sup> row blades and reconditioning of blades. Replacement of blades /Reblading of 2<sup>nd</sup> row only if reconditioning is not feasible.Assembly of blades
  15. Installation of blade disc on new rotor shaft as per developed drawing
  16. Machining of shrouds as per D-R drawings
  17. Axial dimensional inspection of disc
  18. Straightening and polishing of dented blades and shrouds, as required
  19. Polishing of disc face, as required.Setting rotor assembly for final dimension and run out check.
  20. Low speed balancing of rotor as per API 687 standards.
  21. Check the final dimensions of rotor and record.
  22. Perform final mechanical run out of the rotor.
  23. Perform final NDT.
  24. Demagnetize the rotor, insure the rotor is less than 2 Gauss of residual magnetism
  25. Perform final visual inspection of rotor.
  26. Providing repair report. Preserving and Packing the rotor for dispatch. The reconditioned rotor assembly shall be properly packed, to be free from transit defect.

