No.CSB/CSTRI/4(46)/2013-Stores    Date : 11.02.2020

To

Sir,


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With reference to the subject cited above, I am to inform that this Institute invites quotation in two bid system through e-procurement for supply of 1 No. WEB SILK REELING MACHINE

You are therefore requested to submit your Bids as per the specifications given below: -

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<tr>
<th>#</th>
<th>NAME OF THE EQUIPMENT</th>
<th>QTY</th>
<th>DESTINATION</th>
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<tbody>
<tr>
<td>1</td>
<td>WEB SILK Reeling Machine Detailed Specification as enclosed</td>
<td>1 No.</td>
<td>Central Silk Technological Research Institute, Central Silk Board, BTM Layout, Bangalore - 560068</td>
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For further clarification, please contact the Director CSTRI, Bangalore.

E-mail: cstriban.csb@nic.in, Phone: 080 26282167

TERMS & CONDITION:

1. The quotation in two bid (Technical Bid & Financial Bid) system should be uploaded in e-procure website www.eprocure.gov.in. The last date for uploading or submission of bids is 11.03.2020 up to 1 P.M. The Bids will be opened on 12.03.2020 at 2 P.M. in the presence of the representatives who are present.

(i) Technical bid should contain the following information with documentary proof.

a) The Agency is ready to supply the equipment/machinery as per the specifications enclosed
b) The Agency should provide a list of equipments supplied to the parties for the past 3 years.
c) The Agency should submit the details of technical support, after sales service and annual maintenance etc.,
d) The technical bid which does not fulfill the above conditions will be treated technically non-responsive and summarily be rejected.
e) Bid Security at 2% of the total value of the equipment quoted should be submitted. EMD should be paid in the form of Demand Draft drawn in favour of the Director, CSTRI, Bangalore. The EMD does not carry any interest. Please note that cheques will not be accepted. Quotation received without EMD will summarily be rejected.

..2...
(ii) **Financial Bid should contain the following information’s with documentary proof.**

a) Financial Bids should consist of UNIT PRICE, Packing & Forwarding, Insurance, Erection & Commissioning, GST, Transportation Charges etc.,

b) The total price quoted by the Agency should be valid for 180 days from the date of Quotation.

c) Price quoted should be FOR destination.

d) Financial bid which does not fulfill the above conditions will be treated financially non-responsive and summarily be rejected.

2. The successful bidder should supply the ordered equipment to CSTRI, Bangalore within 90 days from the date of issue of supply order

3. No advance will be paid. However, payment will be released within 30 days after receipt of the item in good working condition and confirm to the specifications.

4. GSTIN Registration number issued by the concerned Departments should be indicated.

5. The Supplier shall provide Warranty/Guarantee valid for a minimum period of 24 months from the date of installation of the equipment or 27 months from the date of Invoice. Any defects noticed in the equipment which is unintentional shall be set right by the supplier free of cost for good performance of the equipments.

6. Liquidated damages for delay & non-supply @ 0.5% will be deducted from the bill per week for not supplying the item within the stipulated time subject to a maximum of 10% of the total cost of the equipment.

7. The performance security equivalent to 5% of the total contract value in the form of Bank Guarantee issued by any Nationalized Bank which shall be valid till three months after the expiry of the Warranty period should be furnished to this Institute within 10 days from the date of receipt of purchase order in the prescribed format.

8. The Director, CSTRI, Bangalore reserves the right to accept any quotation or reject all the quotations without assigning any reason thereof. The decision of the Director is final and no correspondence will be entertained from any party in this regard.

9. The Successful bidder, shall bear 50% of the total cost of the machinery so as to share the IPR rights between CSTRI and the successful bidder for developing the first ever commercial model for the production of bulky raw silk (Web silk reeling technology).

10. **The bidders should submit the Bank Details i.e. Bank A/c. No., Bank Name, Branch, IFSC code. Etc. along with quotation**

Yours faithfully,

DIRECTOR
SPECIFICATIONS FOR COMMERCIAL MODEL CSTRI BULKY RAW SILK (WEB SILK) REELING MACHINE
(Two basin unit with 8 reels and 4 rotary mechanisms per Basin)

1. FRAME:
   
a) The machine frame is made of MS tube structure steel of 40 x 40 x 2 mm thickness having 48” width, 18” depth and 63” height (As per the diagram).
   
b) The frame shall be well supported on sides to have rigidity with MS tube structure.
   
c) The sides of the main frame of the machine shall be welded using the support structure and aligned to have more strength.
   
d) Standard company uniform size one or two types of bolts only to be used.

2. REELS AND DRIVE MECHANISM:
   
a) Reel made of Nylon 6 material shall be of 100 mm in breadth, 670 mm to 680 mm in circumference with 10 to 12 ribs weighing 500 – 600 grams. 8 reels on basin, 8 reels as spare, (16 reels for each basin).
   
b) Reel stand with 5/8” M.S. Rod fitted on MS base to keep 10 spare reels with spring and bottom portion machined.
   
c) S.S. Reel shaft 32mm O.D. Hollow shaft or 25mm solid, 12 mm ~ 15 mm sealed ball bearings fitted on both ends with Nylon gears, locked with G.M. cone nut.
   
d) Driving device for reel bar, with clutch type engage and disengage movement fitted in a C.I. gear box comprising EN-8 axel ball bearings 2 Nos., M.S. sprocket gears CI / Nylon gears with phosperous bronze bush driven by chain.
   
e) For housing the reel bar, self-locking system shall be provided in the reel gearbox.
   
f) Reel top, bottom and back covered by minimum 24 gauge M.S. sheet.
   
g) Nylon reel button, spring and the groove made on the reel shaft should be smooth and free from friction.
   
h) Two lines of steam pipe ERW (MS) 1¼” diameter “C” class shall be provided throughout the length of the machine positioning below and above at back side of the small reels for drying the silk and for draining out the condensed water, ½” steam trap and ½” IBR wheel valve with M.S. fittings shall be provided for this steam pipe line at the end of the machine. All the steam line pipes and connected fittings should resist 35Kg/cm² (500lb/inch²) hydraulic test pressure.
   
i) The reeling basin shall be placed at a height of 24” form the floor level (As per the diagram).

3. ROTARY TRAVERSE MECHANISM (WEB SILK MECHANISM):
a) Four rotary traverse mechanisms per basin, which enables cocoon filaments to be accumulated in web structure, shall be provided.

b) Each rotary traverse mechanism shall have rotating drive on its axis with four arms and each arm assembled with belt driving mechanism to move forward the silk filaments.

c) All the four rotary traverse mechanisms shall have common drive and provided at a height of 30” from floor level.

d) The drive for the rotary traverse mechanism shall work in association with reel speed. That is the rotary traverse mechanism shall run at higher speed than the take up reel speed. Suitable variable speed systems shall be provided so that the web silk yarn shall be produced and without compromising on the production.

e) A suitable oscillation mechanism shall be provided parallel to the each rotary traverse mechanism i.e., four per basin to enable the cocoon filaments to form the web structure.

f) The oscillation mechanism consists of a screw type brass rod to guide the silk filaments on to the rotary traverse mechanism in a zigzag manner in order to improve the bulkiness of the web silk.

g) A thread guide shall be provided in front of each rotary traverse mechanism to accumulate the web silk.

h) Center thread guide shall be provided for easy moment of yarn to the traverse guide.

i) The rotary traverse mechanism shall consist of an aluminum-casting box.

j) Inside the box a three-stud bearing made of brass shall be mounted.

k) On the bearing, a stud gear is placed to convey the rotary motion to the rotary traverse mechanism.

l) A specially designed aluminum gear fitting assembly is provided to inter connect the gear wheels and aluminum box. The assembly also provided the rotary motion to the belt drive to enable the silk filaments to move forward.

m) Three 14 teethed spur gears made of brass shall be provided in the assembly.

n) An aluminum disc with shaft and suitable bearings are provided to tightly fit to the gear fitting assembly so that rotary motion is transmitted.

o) Corresponding to the spur gears, another three sets of spur gears attached with plain pulley made of brass, to drive the belt shall be provided.

p) An aluminum-casting arm having three faces with suitable body to be fitted to the gear holding assembly is provided.
q) Three sets of plain pulleys made of brass with suitable holder shall be provided to fit the plastic teethed belts to run on them. The gears and the belts are mounted on the aluminum arm.

r) The entire assembly is connected to the drive mechanism with suitable gears to the motor.

s) Provision shall be made at the center of the rotary traverse mechanism to insert threads form the bobbins, so that blended core yarns shall be produced.

An improvised drive system shall be adopted against the exiting system; however, the system shall arrange the filaments in zigzag form to produce bulky raw silk (web silk) effectively.

4. MOTOR AND DRIVE ARRANGEMENT:

a) 1.5 H.P. 960 rpm, 380 / 440 volts 3phase, 50 cycles induction motor with speed reduction gear box shall be provided as per BIS specifications. The motor shall be from ISO certified companies.

b) The drive arrangement shall be covered by 20gauge M.S. sheet with locking system.

c) 25mm main bright shaft fitted with self-aligning sealed type pillow block ball bearings.

d) The drive arrangement shall be provided at the center of the frame approximately at 40” from the floor level (As per the diagram).

e) Interlinking the rotary traverse mechanism (web silk producing mechanism) with take up reels and oscillation mechanism is the responsibility of the supplier. In case of difficulty, different motors shall be used with variable speed drive arrangement, so that the rotary traverse mechanism shall run in conjunction with the reel speed.

5. DRIVE TRANSMISSION MECHANISM:

a) Fitted with V belt B section (ISI mark) chain & M.S. sprockets, EN-8 metal helical gear, CI gear and Nylon gears. The gears should be hobbled and hardened wherever necessary to minimize wear and sound.

b) All moving parts in the machine such as gears, ‘V’ pulleys shall be tightened by high tensile fasteners of standard make.

6. REELING BASINS:

a) 8 reels shall be accommodated in each basin (As per the diagram).

b) Made of Salem stainless steel, 304 grade with inner dimensions measuring length 42”, width 15” & height 4” weighing minimum 6 Kg, with water holding capacity of 42 liters. The 3 sides of the basin are 20 mm square fold finished.
c) Basin over flowing water arrangement connected with brass or Nylon nipples.

d) Each basin fitted with two stainless steel vessels (Bowl) for keeping silk waste and basins refuse.

e) The S.S Reeling basin is positioned over the bottom frame using 1 ½” X ¼” M.S. Angle.

f) From the top, reeling basin is positioned at a height at 32” from floor level.

g) Drain out nut of 25 mm size made of polypropylene or nylon material shall be provided for each basin.

7. REEL TRAVERSE MECHANISM:

a) Planetary type gear system comprising C.I body EN-8 axel, ball bearings and EN-8 helical gears, 2.5 modules hobbled of 14/15 or 18/19 teeth shall be provided.

b) Self-aligning connecting bearing shall be fitted to the traverse.

c) Channel shall be made of 24 G S.S sheet.

d) Improved porcelain / ceramic thread guide with SS wire hook shall be fitted with screw fitting.

e) Nylon rollers embedded with ball bearings, Nylon guides for each frame (on both sides), Connecting flat made of SS 10 gauge shall be provided for horizontal motion of the S.S traverse flat.

f) Mounting of silk on reels is 2 ½” wide in convex shape. Speed ratio of reel is 1.5:1.

g) Traverse guide with traverse mechanism shall be mounted at a height of 8” from the center of the nylon reel (As per the diagram).

8. STEAM PIPES:

a) Steam inlet is fitted with 1” M.S. pipe with 1” IBR steam valve with SS working parts and all the steam pipe lines and connected fittings should resist 35Kg/cm² (500lb/inch²) hydraulic test pressure.

b) 1 ¼” “C” class M.S. pipe for steam line with 3/8”or 1/2” S.S. Ball Valve, inter connected with 3/8” X 20G copper pipe, Brass flair union and M.S. Fittings with perforations 3/8” 20 gauge copper tube for providing steam to reeling basin. The copper steam pipe shall be tapered towards end and have 3 mm diameter holes. The holes shall be at the side of the steam pipes. All the steam pipe lines and connected fittings should resist 35 Kg/cm² (500lb/inch²) hydraulic test pressure.
c) For draining out the condensed water, ½” IBR wheel value with M.S fittings provided at the end of the machine. All the steam pipe lines and connected fittings should resist 35 Kg/cm² (500lb/inch²) hydraulic test pressure.

9. WATER PIPES:

a) Water inlet pipe shall be fitted with 1” G I pipe along 1” G.M. plug cock.

b) 1 ¼” “C” class G.I. Pipe for water line, with 3/8” or ½” S.S. ball valve inter connected with 3/8” X 20 G copper pipe and brass flair union with G.I. Fittings fitted on basin tray.

c) Steam & water pipes are fitted 1 foot over basin tray, to avoid corrosion.

10. ELECTRICAL CONTROL PANEL:

Suitable starter with relay system shall be provided for 1.5 HP motor.

11. PAINT:

a) The entire machine shall be painted with primary paint. Then the machine shall be neatly spray painted by suitable enamel colors.

b) Chromium plated and yellow passivated material is used to avoid corrosion wherever necessary.

c) All bolts, nuts and washers should be electro plated.

The description stated above shall be incorporated on the said machine only.

Civil works, steam pipes, water pipes and electrical connections from the main supply up to the machine are not included.