

**MINISTRY OF EXTERNAL AFFAIRS
(GOVT. OF INDIA)**

**DISTRICT GENERAL HOSPITAL, DIKOYA
SRI LANKA**

Tender

for

**Supply Installation Testing & Commissioning of LAUNDRY Equipment
at District General Hospital, Dikoya, Sri Lanka**

VOLUME – IV

TECHNICAL SPECIFICATION

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SPECIFICATION OF MECHANIZED LAUNDRY

Scope of Work : Supply, Installation, Testing, Commissioning and Turnkey work of Mechanized Laundry equipment and handover to the District hospital premises of Dickoya, Srilanka including services of Defect liability period as per contract.

1. SLUICING CUM WASHER EXTRACTOR

For removal of blood stains, faecal matter, vomit and other residue
Capacity -15 kg , Electrically Heated,
Front loading, Heavy duty, High Spin, Soft Mount, Suspended, Variable frequency drive & Auto reverse & forward, Open pocket & Front display.

- a. Control- Microprocessor/Computer controlled
- b. Dispenser - 4/5 compartment detergent dispensers
- c. Outer Drum - Made of Stainless steel AISI-304 with 2mm thickness
- d. Inner Drum - Made of Stainless steel AISI-304 with 2 mm thickness of basket, CNC Perforated
- e. Outer Cabinet - Made of Mild Steel sheet and channels, Welded structure, Finished with Powder Coating
- f. Door - Made of die pressed Stainless steel AISI 304 quality, 2 mm thickness, Toughened glass window , SS door latch/handle and interlock for safety
- g. Door Opening - 400 mm Ø (Minimum)
- h. Level Sensor - Highly sensitive auto water level sensor with PLC
- i. Basket Volume- 150 Ltrs. (Minimum)
- j. Seal - High quality seal to be used to prevent contact of water with the Bearings
- k. Bearing Housing- Roller bearings of reputed brand duly packed with grease & Lubricants
- l. Wash RPM - 35 (Minimum)
- m. Final Extract - 870 RPM(Minimum)
- n. G-Force - 340 (Minimum)
- o. Motor - Large capacity motor with variable frequency drive for wash, distribution, low, normal and high spin.
ABB/SIEMENS/CROMPTON/NGEF/KIRLOSKAR MAKE
- p. Electric Load - 9 Kw (Maximum)
- q. Electric supply- 415V, 3Ø,AC, 50hz.4P
- r. All wet materials and components must be of AISI-304 Stainless steel
- s. All Stainless steel components should be TIG welded and highly polished.
- t. In-built Control Panel and Motor

2. WASHER EXTRACTOR

For washing cleaning and extraction
Capacity -30 kg , Electrically Heated,
Front loading, Heavy duty, High Spin, Soft Mount, Suspended, Variable frequency drive & Auto reverse & forward, Open pocket & Front display.

- a. Control- Microprocessor/Computer controlled
- b. Dispenser - 3/4 compartment detergent dispensers
- c. Outer Drum - Made of Stainless steel AISI-304 with 2mm thickness
- d. Inner Drum - Made of Stainless steel AISI-304 with 2 mm thickness of basket,
CNC Perforated
- e. Outer Cabinet - Made of Mild Steel sheet and channels, Welded structure,
Finished with Powder Coating
- f. Door - Made of die pressed Stainless steel AISI 304 quality, 2 mm
thickness, Toughened glass window , SS door latch/handle
and interlock for safety
- g. Door Opening - 500 mm Ø (Minimum)
- h. Level Sensor - Highly sensitive auto water level sensor with PLC
- i. Basket Volume- 300 Ltrs. (Minimum)
- j. Seal - High quality seal to be used to prevent contact of water with the
Bearings
- k. Bearing Housing- Roller bearings of reputed brand duly packed with grease &
Lubricants
- l. Wash RPM - 35 (Minimum)
- m. Final Extract - 800 RPM(Minimum)
- n. G-Force - 340 (Minimum)
- o. Motor - Large capacity motor with variable frequency drive for wash,
distribution, low, normal and high spin.
ABB/SIEMENS/CROMPTON/NGEF/KIRLOSKAR MAKE
- P. Electric Load - 18 Kw (Maximum)
- q. Electric supply- 415V, 3Ø,AC, 50hz. 4P
- r. All wet materials and components must be of AISI-304 Stainless steel
- s. All Stainless steel components should be TIG welded and highly polished.
- t. In-built Control Panel and Motor

3. DRYING TUMBLER

**Capacity – 15 kg Electrically Heated,
Heavy duty, Front Loading, Cool down Feature, Auto-timed, Auto-reversible, Auto
digital temperature control, Dual Motor drive, Open Pocket & Front display**

- a. Control- Microprocessor/PLC/Computer controlled
- b. Temperature - Auto digital control
Controller
- c. Time - Auto digital control for drying and cooling
Controller
- d. Inner Drum - Made of Stainless steel AISI-304 with 1.5 mm thickness of basket,
CNC Perforated
- e. Outer Cabinet - Made of Steel sheet of 1.5 thickness, Welded structure,
Finished with Powder Coating
- f. Door - Made of die pressed Stainless steel AISI 304 quality, 1.5 mm
thickness, Toughened glass window , SS door latch/handle
and interlock for safety

- g. Door Opening - 500 mm Ø (Minimum)
- h. Basket Volume- 295 Ltrs.(Minimum)
- i. Drive Motor - 0.37 Kw
- j. Blower Motor - 0.37 Kw
- k. Suction Blower- Heavy duty Centrifugal Suction Blower and dynamically balanced
- l. Insulation - Glass wool duly packed on all sides & front of the drier
to minimize the heat loss & saves energy
- m. Lint Screen - Self cleaning lint screen of Stainless Steel AISI-304. Facility of
cleaning should be through front door
- n. Electric Load - 12 Kw (Maximum)
- o. Electric supply- 415V, 3Ø, AC, 50hz.
- p. Air flow - Around 30 cu/m
- q. All wet materials and components must be of AISI-304 Stainless steel
- r. All Stainless steel components should be TIG welded and highly polished.
- s. In-built Control Panel and Motor

4. FLAT BED PRESS

Suitable for linen like uniform, room furnishing , personal garments, Bed sheets & Pillow Covers

**Head & Bed Size- 1500X750mm Electrically heated,
Auto-timed, Auto-temperature controlled, Double Switch operation, Built-in Suction Blower, Pneumatically controlled,**

- a. Head - Polished Stainless steel/High quality steel with Teflon coated/Nickel plated
- b. Main Body- Made of Mild Steel sheets of 1.5 mm thickness, Welded structure and finished with powder coating
- c. Blower - Heavy duty Suction Blower with powerful suction
- d. Safety - Emergency Stop of the machine with emergency switch. Automatic stopping of the machine for Finger guard for operator safety
- e. Control - Push Button for raising and lowering of the head pneumatically
- f. Temperature- Digital temperature control controller
- g. Electric Load- 18 Kw (Maximum)
- h. Electric supply- 415V, 3Ø, AC, 50hz.

5. VACUUM FINISHING TABLE WITH IRON

Adjustable height.

Table Top Size -1300mm X 800mm

- a. Table top - Mild Steel sheet of 2.5 thickness padding with heat resistant material like Silicon etc. Perforated flat top padded with high porosity
- b. Main Body - Made of Mild steel sheets/plates and finished with powder coating
- c. Blower - Heavy duty Powerful suction through Centrifugal blower of 0.5hp Motor

- activated by spring loaded full length foot pedal working in combination with heavy duty micro switch
- d. Heater - In-built Thermostatically controlled stainless steel heater
 - e. Electric Steam-Iron Die cast sole plate, Teflon shoe and thermostatically controlled heating element with moisture trap, Rubberized handle
 - f. Electric supply- 415 V/ 3 Ph / 50 Hz/ AC/4P

6. AIR COMPRESSOR

- a. The air compressor of Kirloskar/Elgi/Ingersolrand make shall be multistage stage, fully automatic suitable for delivering dry compressed air at pressure compatible to Ironer.
- b. Drive - Belt driven with pulleys, belts and belt guard.
- c. Motor - 2 hp. (Kirloskar/Siemens/NGEF/Crompton Greaves make)
- d. Electric supply- 415 V/ 3 Ph / 50 Hz/ AC/4P

7. WASH ROOM TROLLEY

Capacity -70Kg

The wash room trolley shall be fabricated out of Stainless Steel AISI-304 tubes and flats in all welded construction ground smooth & finished, supported on swiveling wheels.

8. SHELF TROLLEY (Finished linen)

Capacity -70Kg

The linen trolley shall be designed in Stainless Steel AISI-304 construction with all welded joints ground & smooth finished out of Stainless Steel tubes and bars and foldable front. The trolley shall be fitted with at least 4 Nos. AISI-304 Stainless Steel shelves(2-shelves removable). The base frame shall be supported on swiveling wheels.

9. MOBILE TABLE

Table top size-1200mm x 750mm

The folding table shall be specially designed for carrying rolling and folding of linen in the laundry. The frame of the table shall be fabricated out of MS welded construction with one bottom shelf for storage. Complete with heavy duty ball bearing for swiveling wheels. The table top shall be of polished Stainless steel.

10. STORAGE RACK

Size - 1200mmx460mmx1800mm

4 shelves; Made of Mild Steel, Finished with Stoving paints

11. SHELF FOR FINISHED GOODS

Size- 1200mmx460mmx1800mm

4 shelves; Made of Mild Steel, Finished with Stoving paints

12. ELECTRIC DISTRIBUTION PANEL

- Completed with all switchgears, wiring and controls etc . (Switch gears of L&T/ Siemens/ ABB/GE or Schneider make) for distribution of power supply to various load points in the Laundry Room from single point power supply(Provided by the hospital).

13. IN ADDITION TO THE ABOVE, FOLLOWING TURNKEY WORKS FOR INSTALLATION AND COMMISSIONING OF LAUNDRY AT DISTRICT HOSPITAL PREMISES OF DICKOYA, SRILANKA ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR :

- Bidder must take into consideration in its bid, costs to be incurred for any additional work pertaining to Civil, Electrical, Plumbing, Sanitary and any other protections relevant as per State/Central Govt. regulation/local authority, Servo stabilisers, U.P.S. etc. required for successful installation testing and commissioning of the system and the offered price should include all such costs, each Schedule is to be considered a package in itself and contractor to execute the order package on a “turn key basis”.
- Laying of **GI water pipe line** with necessary taps, joints, elbows, Unions, Tees and valves of GI made and IS-1239 standard (Latest version) to various supply points in the Laundry Room from single point supply(Provided by the hospital).
- Installation and commissioning of **Water Softener** for softening of available ground/supply water continuously at the hardness necessary for washing and other application required for laundry is at least “< 50 ppm” or as per suitability of the Steam Generators/equipment. The Water Softening System shall be installed in the capacity compatible to the requirement of Laundry equipments and system running for the assigned duration at fully loaded condition. The specimen of ground/supply water is available at the site of installation at Dickoya, Srilanka for design and selection of Water Softening System.
- Providing fixing of **Electrical Gadgets** like ELCB, MCB, Light Points, Power points, Fans, Cool air Fans, Exhaust fan etc in the laundry room.
- Number of fans, **power point**, bulbs/tube light. Apart from this supplies to the individual equipments with ELCB & MCB in the laundry room.

- Installation of MCB, ACB, ELCB & OCB of Havell/Siemens/L&T/Schneider etc for Control Panel for laundry.
- Installation of all **electrical cabling** must be of IS: 1554 (As per latest amendment) standard and wiring as per IS: 732 standard and proper earthing of all laundry equipments and other electrical instrument and accessories in the laundry room as per standard guidelines of BIS.
- Arrangement for requisite **fire fighting** for laundry Room and its maintenance for the contract period

In addition to the above mentioned equipment/appliances, if the contractor thinks it necessary to include any other equipment/appliances, accessories etc. for the Laundry then that may be provided after approval from Engineer in-charge.

The sizes are approximate. Minor variations in sizes shall be acceptable subject to prior approval of the Engineer.

APPROVED MAKES FOR LAUNDRY

1.	Air Blower	SWAM/ EVEREST/ KAY/Beta
2.	Blower/Pump/ Motor	KIRLOSKAR/ NGEF/ SIEMENS/CROMPTON/ABB
3.	Compressor	EMERSON/ TECHUMSHAH/COPELAND/DANFOSS
4.	Cable	GLOSTER/UNIVERSAL/NATIONAL/ KALINGA
5.	Aeration System	NORTON/ UEM/ V.K.ENVIROTECH/MM AQUA
6.	Butter Fly Valve	AUDCO/ KEYSTONE/ KSB/CRI/Castle
7.	Control Panel	L & T/ SIEMENS/ SCHNEIDER
8.	Valve	LEADER/ ZOLOTO /CRI/Castle
9.	PVC Pipe Class III with Fitting	FINOLEX/ SUPREME/ PRINCE/ ORI-PLAST
10.	G.I. / M.S. Pipe Heavy Class	TATA/ JINDAL/SAIL /SURYA PRAKASH/HSL/ITC
11.	MCCB/Contactor/Relay	L&T/ABB/SIEMENS/SCHNEIDER
12.	Pressure Gauges	H.GURU /FIEBIG
13.	Stainless steel	TATA/SALEM/JINDAL/MUKUND/ BHAYANDER/ AMBICA
14.	GI Sheets	TATA/SAIL/JINDAL/BHUSHAN STEEL
15.	Aluminium Sheet	BALCO/NALCO/HINDALCO
16.	Grilles/Diffusers	RAVISTAR/CARYAIRE/ MAPRO/DYNACRAFT

Note :

- **The bidder should attach Technical Compliance item wise with respect to the above technical specifications and turnkey work along with Printed catalogues and Manufacturer's Authorization in the techno-commercial bid.**
- **The contractor shall be responsible for the complete works including submission of working drawing and walk through view.**
- **Bidder should provide complete parts manual/Service manuals for all systems and subsystems.**
- **Final electrical safety test, system test and calibration should be done by authorized person with test instruments.**
- **All electrical accessories like cable wire, electrical outlets, switches etc, should be fire proof of reputed make, certified for electrical safety.**
- **Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of HSCC.**
- **The contractor should provide test certificate for all materials and equipments used for Laundry**
- **Training of personnel of the Institute should be 15 days at least**
- **The contractor should prepare and submit layout plan to HSCC for approval before beginning of supply and installation.**