

PART 1

THE GOVERNMENT OF ZIMBABWE

MINISTRY OF LOCAL GOVERNMENT AND PUBLIC WORKS

TECHNICAL SPECIFICATION

1.0 GENERAL

This specification covers the supply, delivery, installation, testing and handing over in full working order of two (2) autoclaves at Mpilo National TB Reference Lab.

1.1 REGULATIONS

All mechanical equipment shall conform to the requirements of the Zimbabwe Factory and Works regulations, published under the government notice No: 279 of 1976 or any amendments promulgated subsequently.

1.2 CONTRACTOR'S DRAWINGS

The successful Bidder shall have all his layout and assembly drawings approved in writing by the Engineer before work is commenced on the contract.

1.3 ITEM DESCRIPTION:

Electric Autoclave

The autoclaves shall be used for wide applications such as autoclaving surgical instruments, glassware, gloves, porous loads, sealed and unsealed liquids, fluids, plastics, fabrics, plastic ware & pipette tips & free steaming. The autoclave shall have the following minimum features

- Boiler Plate grade 430A or better for Jacket Material
 - Control system shall be embedded microprocessor controller
 - Standard safety features shall comply with SAZ requirements & shall incorporate among other features;
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- (1) Pressure Equipment directive 97/23/EC or latest
 - (2) Medical Device Directive 93/42/EEC or latest
 - (3) EN285 or better
 - (4) EN ISO 9001 or better
 - (5) Pressure vessel chamber shall be constructed from stainless steel grade 304L or better
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- The chamber internal surface shall be highly polished & corners shall be circular for easy cleaning
 - Chamber flow shall slope towards a central drain covered with a mesh to protect drain port from debris
 - The pipe work shall be stainless steel & valves ball type self cleaning & pneumatically controlled

- Electrical supply shall be of frequency 50Hz
- Panel mounted printer
- Cross contamination seal for BSL3 LAB
- Anti-bacterial Powder coated side panels
- **Access codes** All menus, cycle selection & end of cycle authorizations are protected by codes to prevent unauthorized use, Codes available are-Operator, senior Operator, Supervisor, Maintenance, and Validation & Root.
- **Control Panel** The ergonomically designed control panels incorporate the following user-friendly controls and functions:

- (1) Chamber pressure gauge
- (2) Chart / paperless recorder
- (3) Screen printed control panel
- (4) Thermal printer
- (5) Power ON/OFF
- (6) Door locked & door operation
- (7) Stop button & rest

CYCLES: -

The autoclave shall be able to carry out at least 12 standard sterilization programs for dressings, unwrapped and wrapped equipment, rubber, and liquid including two test programs

SAFETY FEATURES

The autoclaves shall have the following safety features

Over pressure, safety valves which operate automatically

Temperature control system that stops heating in case of overheating with a sounding alarm

Anti-dry-out function. If water level is too low, heating stops and error code displays on screen.

Electric power protection

PART 2

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SCHEDULE OF PRICES

The prices on this section shall only be for the supply of the equipment. The tenderer shall list and price all components and material which shall be required for the manufacture of the AUTOCLAVE and ancillary equipment.

NOTE: the cost price in this schedule refers to the price of the supplier/manufacturer of the equipment

2.1 PRICES OF AUTOCLAVES

ITEM	QTY	UNIT COST	TOTAL COST
1) Electric autoclave 100L With standard accessories Max pressure 0.4MPa Working Temperature 105-134°C Timing Range 0-999min Water Requirement -distilled or demineralized water	2		
1.1) Spares			
1.2) Electrical components			
Sub-Total			

NB: All pricing must be in this format and failure will lead to automatic disqualification

2.2 MAINTENANCE

The successful tenderer shall also quote for the maintenance costs that are not covered by the guarantee period.

2.3 TRAINING

The successful tenderer shall also quote for basic O&M training. The training shall cover the

theory, operation, servicing and simple troubleshooting of the installed equipment. The training program is to be approved by the Engineer.

2.4 Acceptance Testing

The contractor shall also provide an acceptance test document showing the installed equipment, spares, faults and normal operation. The **Engineer** will be involved in these tests and commissioning will only be done when these are successfully conducted.

2.5 TOTAL COST OF EQUIPMENT AND SERVICES TO BE CARRIED OVER TO Summary ZWL\$.....

NOTE: where space provided is insufficient tenders are advised to attach a separate sheet using the same format as outlined above

PART 3

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VARIATIONS AND OMISSIONS TO SPECIFICATION

All omissions and variations to the specification shall be set out below making reference to the corresponding clause numbers in the specification in serial order. If the tender is completely in accordance with the specification, the tenderer shall state 'Nil'.

.....
Signature of tenderer

.....
Date & Seal

PART 4

THE GOVERNMENT OF ZIMBABWE MINISTRY OF LOCAL GOVERNMENT AND PUBLIC WORKS

SCHEDULE OF TECHNICAL PARTICULARS

The generation of the equipment to be used in the installation should be less than 2 years at the time of bidding.

The tenderer shall complete the schedule below giving the manufacturers of the equipment/materials proposed to be used on which the tender is based.

Illustrations and/or catalogues of the equipment covered by the tender must be provided at the time of tendering.

No alteration to the equipment/materials offered or the information given will be permitted in the execution of the works unless such alteration is approved by the engineer.

ELECTRIC AUTOCLAVES:

4.1 (a) Make / Manufacturer:

.....

(b) Model & Type:

.....

(c) Country of Origin :.....

4.2 **Capacity Data**

a)Volume of sterilization chamber.....liters

b)External dimensions.....(W)x.....(D)x.....(H)mm

c)Door dimensions.....mm

(d)**Typical Cycle Times**

Bowie & Dick Test cycles.....

Air Leak Test.....

Packed Instruments.....

Fabrics & Textiles.....

Heat sensitive materials.....

Rapid Processes.....

Liquid open.....
Silicone.....
Optical Instruments & Endoscopes.....
Heavy Loads.....

e) Describe how cycle time will be reduced if hot water is connected.....
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.....

g) Electric steam generator power rating.....kw

4.3.Materials Used for Manufacturing

a) Boiler plate.....
b) Sterilization chamber.....
c) Steam generator.....
d) cross contamination seal.....
e) side panels.....
f) Front and rear panels.....
g) Pipe works.....
h) Internal & external accessories.....

4.4.Cycles a) Maximum number of programs.....

b)Maximum number of test programs.....
c)Maximum of standard programs.....
d)Test cycle temperatures: Bowie & Dick Test.....

Air leak test.....

Wrapped instruments.....

Unwrapped Instruments.....

Heat sensitive materials.....

Liquids open.....

e) Describe cooling processes.....
.....
.....
.....

.....
f) Describe heating processes.....

.....
Describe drying processes.....

4.5. Control Panel:

For ergonomical design, control panel shall be fully user friendly in terms of controls & functions. Indicate whether or not the following are included with the control panel.

- a) Chamber pressure gauge.....
- b) Optional chart/paperless recorder.....
- c) Screen printed control panel.....
- d) Thermal Printer.....
- e) Power ON/OFF.....
- f) Door locked during operation.....
- g) Stop button and reset button.....
- h) Overheating protection.....

4.6.(a) Access codes:

State all functions of the autoclave that shall be protected by access codes

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b) Describe the control system.....

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.....
c) Is steam generator in built or separate?

d) Describe the basic repair/ service kit.....
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e) Describe **safety standards** compliance.....
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.....
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PART 5

**THE GOVERNMENT OF ZIMBABWE
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TENDER SUMMARY

5.1. Cost of all material as specified in **Part 2** ZWL\$.....
Add VAT ZWL\$.....

SERVICES

5.2 Delivery cost ZWL\$.....
5.3 Installation cost ZWL\$.....
5.4 Services cost ZWL\$.....
5.5 Commissioning cost ZWL\$.....
5.6 **Sub- Total** ZWL\$

5.7 Total ZWL \$.....

Amount in
words.....
.....
.....

5.8 CONTRACT PERIOD

Tenderers shall state herewith the period in days/weeks required to effect delivery of all equipment, installation and commissioning.

- Delivery
- Installation
- Acceptance Testing
- Commissioning
- **Total time required (Contract period)**

5.9 Liquidation and ascertain damages shall be at the rate of 0.05% of contract sum per week

NAME OF TENDERER.....

SIGNATURE..... DATE&SEAL.....

PART 6

THE GOVERNMENT OF ZIMBABWE MINISTRY OF LOCAL GOVERNMENT AND PUBLIC WORKS

OPERATING MANUAL, MAINTENANCE MANUAL, AND AS FITTED DRAWINGS

6.1 OPERATING & MAINTENANCE MANUALS

The successful tenderer shall provide a minimum of three copies of all operating and maintenance manuals and as fitted drawings to be provided to the client at the time of handover.

6.2 The operating and maintenance manuals shall give full details of the following: -

- (a) A description of the operation of all items of the machine, including any necessary diagrams
- (b) Instructions on how to stop and start the machines and make any adjustments to the operating conditions. Attention should be drawn to any safety precautions and requirements.
- (c) Details of all materials required in the maintenance of the equipment, including any lubricants, replacement filters, seals etc.
- (d) Schedule of routine and planned preventive maintenance.
- (e) Maintenance checklist
- (f) Details of each item of machine, including name and address of manufacturer and agent/stockiest, type and serial number and also duty rating.