



# Autoclave, Digital 20L

## **USER'S MANUAL**



**Shiv Dial Sud & Sons**

*E-mail: [info@shivsons.com](mailto:info@shivsons.com), Website : [www.shivsons.com](http://www.shivsons.com)*



# INSTRUCTION MANUAL AUTOCLAVE DIGITAL, 20L

Document No.: MN/SV031

Original Date: 06-09-21

Revision No.: 0

Revision Date:

## Dear Supertek User,

We would like to take this opportunity to thank you for preferring this Supertek product. Please read the operating instructions carefully and keep them handy for future reference.

Please detain the packing material until you see that the unit is in good condition and it is operating properly. If an external or internal damage is observed, contact the transportation company immediately and report the damage. According to ICC regulations, this responsibility belongs to the Customer.

While you are operating the instrument please;

In case of a problem contact your Supertek agent for an authorized service or maintenance.

The validity of the guarantee is subject to compliance with the instructions and precautions described in this manual.

Supertek reserves the right to improve or change the design of its products without any obligation to modify previously manufactured products.

Information contained in this document is the property of Supertek. It may not be duplicated or distributed without our permission.

## Shiv Dial Sud & Sons

**23, Industrial Estate Ambala Cantt (INDIA)**

**Tel : +91-171-2699537, 2699297**

**info@shivsons.com**

**www.shivsons.com**



# INSTRUCTION MANUAL

## AUTOCLAVE DIGITAL, 20L

Document No.: MN/SV031

Original Date: 06-09-21

Revision No.: 0

Revision Date:

### Contents:

1. Description
2. Technical Specification
3. Packing Contents
4. Safety Precautions
5. Equipment Installation
  - 5.1 Environment Condition
  - 5.2 Handling and transportation
  - 5.3 Positioning
6. Operating Instructions
7. Maintenance and cleaning
8. Do and Don'ts
9. Warranty

## 1. Description:

- An autoclave is a machine that provides a **physical method of sterilization** by killing bacteria, viruses, and even spores present in the material put inside of the vessel using steam under pressure.
- Autoclave sterilizes the materials by heating them up to a particular temperature for a specific period of time.
- The autoclave is also called a steam sterilizer that is commonly used in healthcare facilities and industries for various purposes.
- The autoclave is considered a more effective method of sterilization as it is based on moist heat sterilization.



Before installation, please refer to the illustration above and identify the different controls.

- A – ON/OFF switch
- B – Process Indicator



# INSTRUCTION MANUAL

## AUTOCLAVE DIGITAL, 20L

Document No.: MN/SV031

Original Date: 06-09-21

Revision No.: 0

Revision Date:

- C- Low Water indicator
- D- PID Controller
- E- Tightening knob
- F- Safety valve
- G- Steam/Pressure release valve
- H- Pressure regulating valve
- I - Handle
- J - Pressure Gauge
- K- Lid
- L- Chamber/autoclave body
- M- Control box.
- N- Power cord.

## 2. Technical Specifications:

**Dimensions (L x W x H):** Dimensions: 500x400x500 mm

**Chamber Dimensions (L x W):** 305mm x 305mm

**Chamber Material:** Stainless steel

**No. of Trays:** 1 tray

**Features:** Digital control, low water auto cut

**Temperature range:** 121°C

**Pressure range:** 15 psi To 17 psi

**Input Voltage:** 220V AC ( $\pm 10\%$ ), 50/60Hz

**Wattage:** 2KW

**Capacity:** 20L

## 3. Packing Contents:

- 1 x Autoclave digital 20L
- 1 x Detachable Power cord
- 1 x Instruction Manual

## 4. Safety Precautions:

Please read the entire instruction manual before operating the equipment.



**WARNING! DO NOT** use the equipment in a hazardous atmosphere or with hazardous materials for which the unit was not designed. The user should be aware that the protection provided by the equipment may be impaired if used with accessories not provided with, or recommended by the manufacturer, or used in a manner not specified by the manufacturer.

Always operate unit on a level surface for best performance and maximum safety.

DO NOT lift unit by the Chamber.

DO not open the lid till steam present in the chamber.

Keep the power cord away from the chamber.

### **Important: -**

**Protection impairment if used in a manner not specified as per this manual.**

**No operator serviceable parts inside. Refer to qualified personnel for servicing/repairs only.**

## 5. Equipment Installation:

Now connect one end of the Power Cord into the 3 pin main socket on the back panel of the control box. The 3-pin plug at the other end of the Power Cord may now be plugged into a properly-grounded 220 V AC socket.

Switch on the Autoclave by means of the Power Switch (A). PID controller on the front of control box (M) will ON and the display is as shown in figure 1. In case heater shorting and failure a resettable switch is also provided in the back of control box.



**Figure 1**

### **Using the Equipment:**

In general, an autoclave is run at a temperature of 121° C for at least 30 minutes by using saturated steam under at least 15 psi of pressure. Once the pressure is reached, the whistle blows to remove excess pressure from the chamber. After the whistle, the autoclave is run for a holding period, which is 15 minutes in most cases.

The following are the steps to be followed while running an autoclave.

Place the tray on the autoclave chamber gently and check the chamber is empty or not. Now fill the water into the chamber below the tray placed in it. If the water present in the chamber is less, the buzzer is continuously produces a sound and the low water indicator (C) remains ON and the heater not works till the water not properly filled. Placed the materials inside the chamber to be sterilized. The lid is then closed, and the knobs are tightened to ensure an airtight condition. Steam release valve is also tightened when the autoclave is in working condition.

The Autoclave is now ready for use.

## 5.1 Environmental Conditions:

1. This equipment is suitable for indoor use only and needs to be installed in a laboratory environment.
2. This equipment is rated for a maximum ambient temperature of 50°C and maximum humidity of 75% Rh.
3. Main Supply fluctuation not exceeding 10%
4. Use in well ventilated area

## 5.2 Handling and Transportation:

Upon receiving the Supertek Autoclave digital 20L, check to ensure that no damage has occurred in transport is detected at the time of unpacking. If you do find such damage the carrier must be notified immediately.

After unpacking, place the Autoclave digital either on a level surface away from explosive vapours.

## 5.3 Positioning:

Check that the positioning is suitable for the users

Check that the instrument is stable on its four pedestals.

Check that the user will be able to follow up the operation even when he deals with something else.

Check that the positioning of the device prevents interference with other equipment in the near surrounding.

## 6. Operating Instructions:

1. Before beginning to use the autoclave, it should be checked for any items left from the previous cycle.
2. A sufficient amount of water is then put inside the chamber. If the water level is low then the Red indicator turns on. The heater not working till a sufficient amount of water is not placed in the chamber.
3. Now, the materials to be sterilized are placed inside the chamber.
4. The lid is then closed, and the knobs are tightened to ensure an airtight condition.
5. Switch ON the power switch fitted on the front panel of the instrument.

**Note: Wait for 30 sec after that the PID controller display will light up and shown as fig.1. During that time low water indication will also be on.**

6. In case circuit overloading Press the resettable switch.
7. The safety valves are adjusted to maintain the required pressure in the chamber.
8. Now press the set button of PID controller. The temperature value can be increased or decreased by up and down buttons. After the temp settings Press Enter button for the process starting. Display will show as figure 2. Default set value is 121°C for normal sterilization operations.



**Figure 2**



**Figure 3**

9. Again press the set button for timer setting. The display will show as figure 3. The timer values can be increased or decreased by pressing up and down buttons. After selection press enter button for process starting. Default sterilization process timing is 15 minute.
10. Sterilization will start. The heater process is indicated by the Green indicator.
11. Once the water inside the chamber boils, the air-water mixture is allowed to escape through the Steam release valve to let all the air inside to be displaced. The complete displacement can be ensured once the water bubbles cease to come out from the valve.
12. The steam release valve is then closed, and the steam inside is allowed to reach the desired levels (15 lbs in most cases).
13. Once the pressure is reached, the whistle blows to remove excess pressure from the chamber.
14. After the whistle, the autoclave is run for a holding period, which is 15 minutes in most cases.
15. When the Sterilization process completed a buzzer inside the control box starts beep for 1minute.
16. Now, the electric heater is switched off, and the autoclave is allowed to cool until the pressure gauge indicates the pressure inside has lowered down to that of the atmospheric pressure.
17. The steam release valve is then opened to allow the entry of air from the outside into the autoclave.
18. Finally, the lid is opened, and the sterilized materials are taken out of the chamber.

#### 1. Error Details

- **Low water:** Red indicator turns ON.
- **Overload:** Any case heater shorting or circuit overloading a resettable switch is provided.

## 7. Maintenance and cleaning:

1. The equipment should be subjected to routine preventive maintenance and inspection necessary for safe operation. The maintenance frequency is to be decided on the usage and the hours of operation.
2. If the inspection necessitates replacement of parts, the alternatives used should be of the same type, rating and characteristics.





# INSTRUCTION MANUAL

## AUTOCLAVE DIGITAL, 20L

Document No.: MN/SV031

Original Date: 06-09-21

Revision No.: 0

Revision Date:

3. The equipment is to be cleaned with clean cloth rag soaked in pure/distilled water and then dried using mild warm blow/heat gun if necessary.
4. Maintenance and inspection activities need to be performed by qualified personnel only.

### 8. Do and Don'ts:

#### Do

1. Obey all warning labels,
2. Remove the main plug from socket when instrument is not in use for long time.

#### Don'ts

1. Do not remove warning labels,
2. Do not operate damaged instrument,
3. Do not operate instrument with a damaged cable,
4. Do not move instrument during operation.

### 9. Warranty Statement:

You have purchased this product with a good faith warranty. This product is warranted to be free from defects in materials and workmanship for a period of 12 months from the date of purchase. This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in the instruction manual. The warranty is extended only to the original purchaser.

It shall not apply to any product or parts which have been damaged due to improper installation, improper connections, misuse, unauthorized repair, accident or abnormal conditions of operation. ***The warranty does not cover consumable items and freight costs.***

In the event this product fails under normal laboratory conditions within the specific period of time because of defect in material or workmanship. We shall either repair or replace the product.

#### Purchase Record:

We recommend that you record the details of your purchase in the space below for your future references.

Purchased From:	
Date of Purchase:	
Purchase Reference No.:	
Model No.:	
Serial No. (If Any):	

To make a warranty claim, contact us on +91-171-2699297/ 2699537 or email at [info@shivsons.com](mailto:info@shivsons.com)