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Desktop Pulsating Vacuum Steam Sterilizer

TM-35/50DV

Use

The table type sterilizers are safely auto-controlled, which are designed for the dental clinics, hospitals, school lab, scientific research institutions and laboratory. And mostly suitable for sterilizing of surgical, dental and eye instruments, glassware medicine, culture medium and biological dressing, food, etc.

Characteristics

• Standard Class B with three times vacuum and drying, the remaining temperature of sterilized instruments less than 0.2%.

• LCD display working status, touch keys.

• The vacuum data can reach -0.8bar, it fits various instrument, including package, unpackaged, solid, hollow, multi apertures and inset pipes. It makes sure the instrument can be sterilized completely.

• Fully computer controlled LCD display bright show. The interface is modularized panel for easy operation.

• It is installed with BOWIE&DICK which measures the penetration of water steam.

• It has vacuum test which can make sure the ability of vacuum testing. Fast and independent steam generator.

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• Built-in mini printer which can record the sterilizing information.
• Equipped with Safety valve, Safety lock door system, Pressure lock system, Pressure or temperature overload protection, Alarm system.
• It inactivates the HIV, HBV, BSE, and bacillus efficiently.
• This product is designed for open water tank, water purification, sewage tank separation, convenient and intuitive.

Technical Data

MODEL Technical Data	TM-35DV (same as TM-XD35DV)	TM-50DV (same as TM-XD50DV)
Sterilizing chamber volume	35L Φ300×500mm	50L Φ340×550mm
Working pressure	0.22Mpa	
Working temperature	134℃	
Temperature adjust range	105-134℃	
Timer range	0-99min	
Heat average	≤±1℃	
Power	AC220V.50Hz/2.7KW	AC220V.50Hz/2.7KW
Dimension（mm）	730×550×510	770×600×540
Exerior package dimension（mm）	810×680×650	880×730×700
G.W/N.W	115kg/93Kg	130kg/106Kg

TABLE TOP STEAM STERILIZER

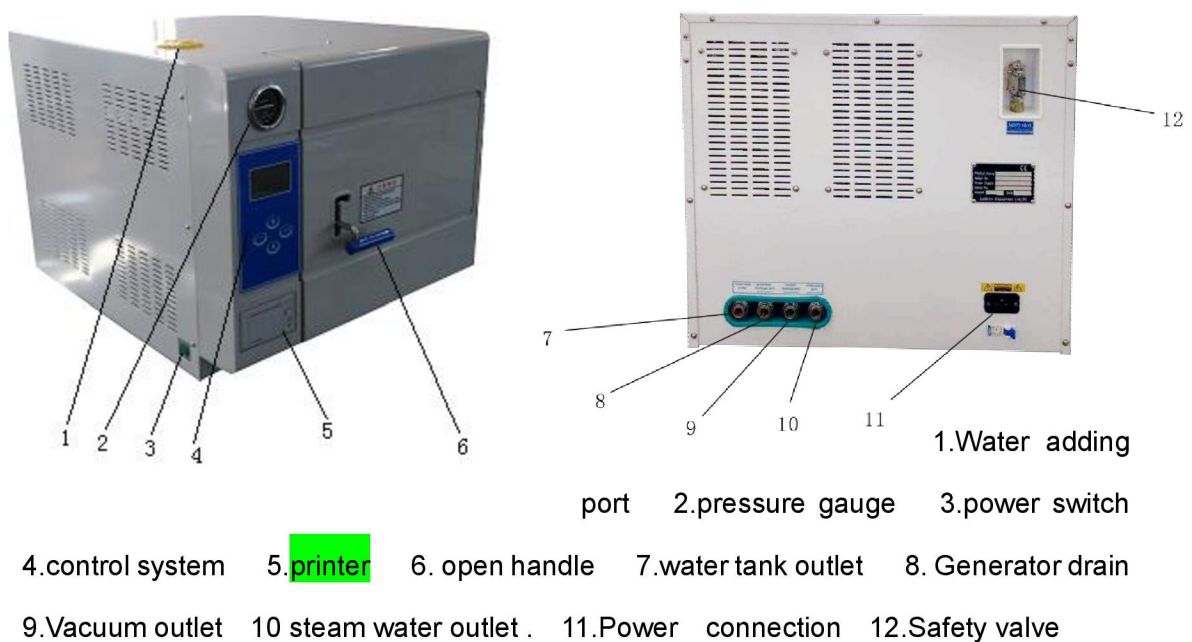## （TM-35DV、TM-50DV）

USER'S MANUAL

3. Disable

This sterilizer cannot be used to sterilize items that cannot bear the high temperature, high pressure or wet.

4 Normal working conditions

a) Ambient temperature   +5℃ ~ +40℃

b) Relative humidity ≤85%RH

c) Atmospheric pressure   86kPa ~ 106 kPa

d) Power supply   AC 220V±22V , 50Hz±1Hz.

5.composition and working principle

1. Composition

1.Water adding port   2.pressure gauge   3.power switch 4.control system   5.printer   6. open handle   7.water tank outlet   8. Generator drain 9.Vacuum outlet   10 steam water outlet .   11.Power   connection   12.Safety valve

(figure 1)

2. Working principle

The device is designed with the principle of gravity pressure steam sterilization. Fill proper distilled water into the sterilizing chamber and directly heated by the heating coils to generate pressure-steam. The pressurized steam would interacts on the microorganisms from the sterilizing articles, then destroy its structure to achieve the purpose of sterilization.

Schematic diagram of electrical wiring (see figure 2).

(figure 2 .Schematic diagram of electrical wiring)

6. Basic parameters

MODEL PARAMETERS	TM-XD35DV	TM-XD50DV
Chamber STS316L	35 L	50 L
Basic structure	Box shape D structure	
Distilled water tank	4.5 L	
Control type	Microcomputer type	

1. Start

(figure 3)

2.Buttons

SET, ▲   ▼,   **ON/OFF**

3.Choose the fixed program according to the sterilizing objects.

(figure 4)

Press **ON/OFF** button while it is on "Figure 3", the interface would switch to "Figure 4". The first line is the name of the item, as shown above, the item is an instrument.
The second line is the sterilization temperature and time ,as shown above.the sterilization temperature is 134 ℃, and the sterilization time is 10 minutes.
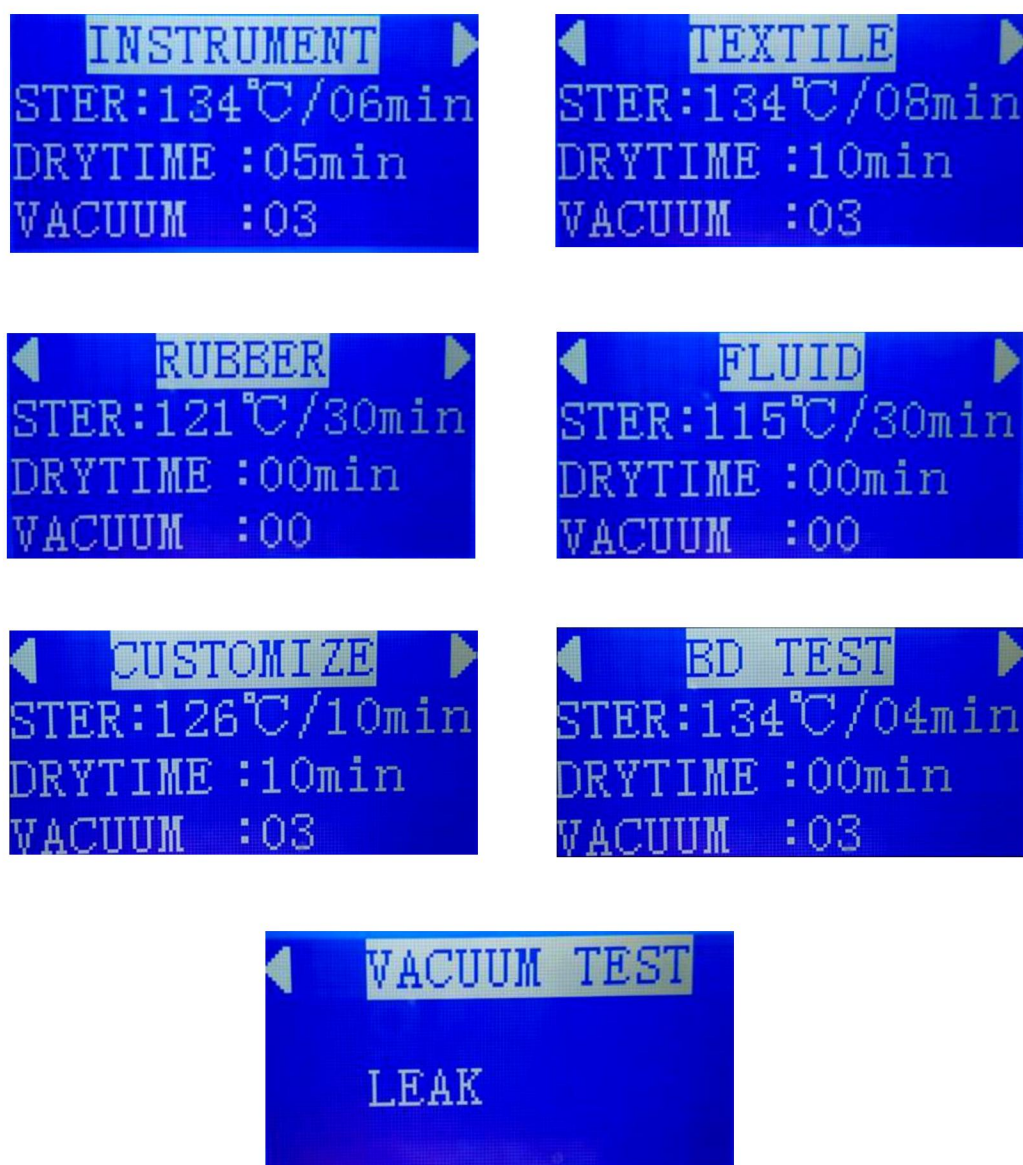
The third line is drying time, as shown in the above is 10 minutes.
The fourth line is the number of vacuum times, as shown in the above picture is 3 times.

In "Figure 4", press the ▲ and ▼ buttons to select the name of the articles. There are followed 7 fix program for your choosing: instrument, textile ,rubber, liquid, BD Test, Customerize,Vacuum Test.
On the "Figure 4" interface, press the **SET** button to return to the "Figure 3" startup interface.
Examples:

INSTRUMENT ▶	◀ TEXTILE ▶
STER:134°C/06min	STER:134°C/08min
DRYTIME :05min	DRYTIME :10min
VACUUM :03	VACUUM :03

◀ RUBBER ▶	◀ FLUID ▶
STER:121°C/30min	STER:115°C/30min
DRYTIME :00min	DRYTIME :00min
VACUUM :00	VACUUM :00

◀ CUSTOMIZE ▶	◀ BD TEST ▶
STER:126°C/10min	STER:134°C/04min
DRYTIME :10min	DRYTIME :00min
VACUUM :03	VACUUM :03

◀ VACUUM TEST

LEAK

(figure 5)

4.Select the operation program

INSTRUMENT	INSTRUMENT
77.7°C 0.2kpa	11.1°C −0.3kpa
00:00:00 00:00	00:00:00 00:00
STATE:STAND BY	STATE:PRE HEAT

(figure 6)

Press the **ON/OFF** button while it is in figure 3, the interface switches to "Figure 6", then the program is selected.

The first line is the name of the item, as shown in the figure above is INSTRUMENT.

Press the **ON/OFF** button to choose the parameter need to be set(figure 9), press the ▲ and ▼ button to revise, press **ON/OFF** button to confirm the revise and then proceed the next parameter, if it doesn't required for revising, please press **ON/OFF** button directly for the next one. Press ON/OFF till exit, the device will auto save the parameter in 3~5 seconds. During setting the parameter, if which is wrong and not for saving, just press **SET** button to exit and revise.

7. Print set

(figure 10)

press the ▲ and ▼ button to chose YES or NO, press **ON/OFF** button to confirm and save, then press **SET** button to exit, if no need to save, press **SET** button to exit directly.

Standardly, the printer is performing output of next Data: Print Date (*YYYY-MM-DD*), Unit Name, Work Mode (*i.e. program type*), Start of the process (*hh:mm:ss*), Vacuum Times, Sterilization Temperature and Pressure, Sterilization Time, Drying Time, End Time, Operator field

9. Maintenance

1. Ensure the reliability of the sterilization effect, place a chemical sterilization indicator sheet or a pressure steam sterilization biological indicator together with the sterilized item. After the sterilization is completed, the sterilization effect can be checked.
2. In case of malfunction during sterilization, it should be rectified and waited for 5 seconds before restarting. The previous setting is invalid.
3. The safety valve must be checked once a year and replaced if it fails. If the safety valve fails during use and the pressure continues to rise, the power should be cut off in time to ensure safe use. The safety valve is in the water tank. When repairing, just unscrew and open the four screws on the two sides of the outer shell, and then carry the outer shell.
4. The silicone sealing ring is aging, would cause the leakage and should be replaced in time.
5. Pressure gauges should be calibrated once a year. During the sterilization operation, the temperature display is the priority monitoring value.
6. The sterilizer should be kept clean to prevent scale from forming on the surface. It should be washed once a week with distilled water. When the water tank is used occasionally, rinse it with distilled water before use. For frequent use, rinse with distilled water once a week.
7.Regular faults and troubleshooting methods
During operation, if there is an alarm , press the left button to enter the " query", press the ▲ and ▼ buttons, and "ERR", and then press the right button to enter to troubleshoot the display failure.

Appendix : Quick guide

1. Add water: open the water collecting tank cover, add 2~3 cups of distilled water.
2. Piling and sealing: Put the sterilizing items into the sterilizing plates, keep certain gap between each packages, then close the door.

3. Setting: connect the power(220V), it suggest to choose the "CUSTOMIZE"program, turn

on the power, will show a blank screen with only time on it, then press SET button, then

press ▲and ▼ button, till the "USER DATA" is highlight, press ON/OFF button to enter

to set the sterilizing temperature, press ON/OFF button to set sterilizing time, drying time, vacuum times , each vacuum pressure value, print, exhausting, drainage, exchange temperature and the interval time between two times exhausting, till the USER DATE is displayed again to press SET button again to return to the STRAT screen.
4. Start: Turn on the power switch to display the LOGO screen.
   ✧ Press the "ON / OFF" key to enter the program
   ✧ Press "ON / OFF" key to enter standby
   ✧ Press "ON / OFF" key to enter working state
   ✧ Water-preheat-three vacuum-sterilization-drying-end
5. End: When the sterilization is over, the buzzer sounds, the pressure gauge returns to zero, the door can be opened to pick up objects, and the power is turned off after the door is opened.
NOTE:
   ✧ Must use distilled water
   ✧ Before each use, the waste water in the waste water tank must be discharged.