



AUTOCLAVE

Tips and Guide to Usage

What is the autoclave used for?

An autoclave is a sterilisation machine used in veterinary clinics and hospitals to effectively sterilise, kill bacteria, viruses and any other microorganisms on surgical instruments, equipment, and supplies. Veterinary autoclaves play a crucial role in maintaining the hygiene and safety standards required for surgical procedures and other medical treatments in veterinary medicine.

Being a large piece of medical equipment they can be a bit intimidating if you haven't used one before, so in this guide we will go over all the basic must knows.

How does it work?

It uses high-pressure steam to create a controlled environment that reaches temperatures and pressures capable of destroying pathogens, ensuring that medical tools are safe for use on animals and preventing the spread of infections.





AUTOCLAVE

Components of the Autoclave

CHAMBER

The sterilization chamber is where the items to be sterilized are placed. It's a sealed compartment that can hold a variety of medical instruments, equipment, and supplies.

DOOR

The chamber is accessed through a door that is securely sealed during the sterilisation process to maintain pressure and temperature. The door is equipped with locks and safety mechanisms to prevent accidental opening while the autoclave is in operation.

CONTROL PANEL OR SCREEN

The control panel allows the operator to set and monitor the sterilisation parameters, such as temperature, pressure, and cycle duration. Modern autoclaves often have digital displays and user-friendly interfaces.

HEATING SYSTEM

Autoclaves use a heating system to generate steam, which is a crucial element in achieving sterilisation. This system includes heating elements and a water reservoir that can be heated to produce steam.

PRESSURE SYSTEM

A pressure system is responsible for increasing the pressure within the chamber to achieve the desired sterilisation conditions. It includes pressure sensors, valves, and safety mechanisms to regulate and maintain pressure levels.

WATER RESERVOIR SYSTEM

Autoclaves require distilled or deionised water to generate steam. Some machines will require drainage of wastage water.

LABEL PRINTER OR DATA RECORDER

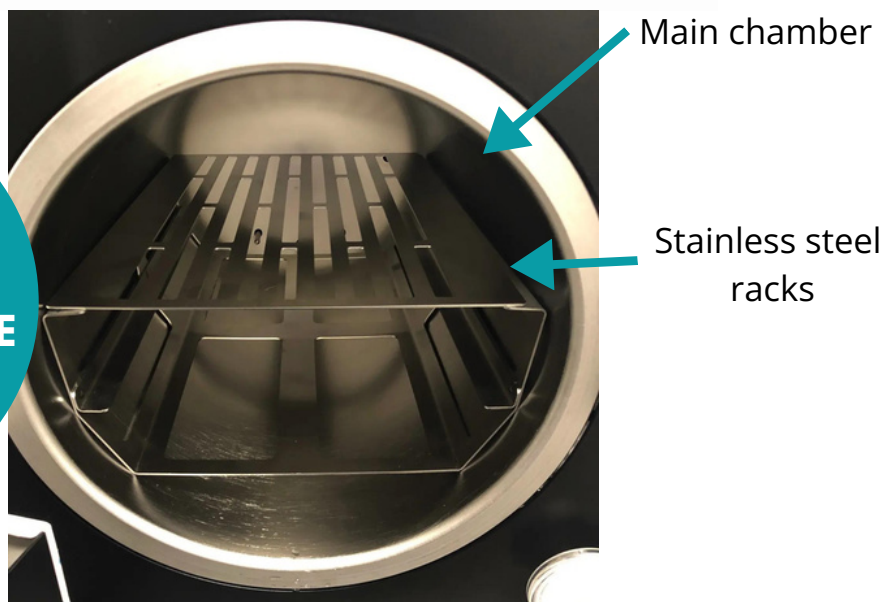
Some autoclaves come equipped with printers or data recording capabilities to provide a record of sterilisation cycles, including parameters such as temperature, pressure, and cycle duration.

AUTOCLAVE

Components of the Autoclave



Internal Chamber



**MAKE SURE NOT
TO OVERLOAD
YOUR AUTOCLAVE
CHAMBER!**

AUTOCLAVE

Equipment for Autoclave Use



Distilled Water

Autoclaves require distilled or deionised water to produce steam. Water purification systems ensure that the water used is free from impurities that could affect sterilization.



Sterilisation Pouches or Wrap

These are specialized products that are designed to hold items to be sterilised. They allow steam to penetrate while preventing contamination after the sterilization process. Some of these bags will have built in indicator strips. These strips change colour when exposed to specific temperature and pressure conditions, indicating that the items have undergone the sterilisation process effectively.

You can also use autoclave tape to hold your wrapped kits closed. The colour on the tape (similar to the strips) will change colour when it has been effectively penetrated and sterilised correctly.



Chemical Indicators such as Bowie & Dick Tests.

These are chemical products that change colour when exposed to specific sterilisation conditions. They should be routinely run at the start of that day prior to running any cycles.

Instruction Manuals and Reference Materials

Operators should have access to the autoclave's instruction manual, manufacturer's guidelines, and reference materials for proper operation and troubleshooting.



Personal Protective Equipment (PPE)

Autoclave operators should wear appropriate PPE, including gloves and lab coats, to protect themselves from exposure to heat, steam, and potentially contaminated items



Loading and Unloading Tools

Long-handled tongs, forceps, and other tools are used to safely load and unload items from the autoclave chamber.



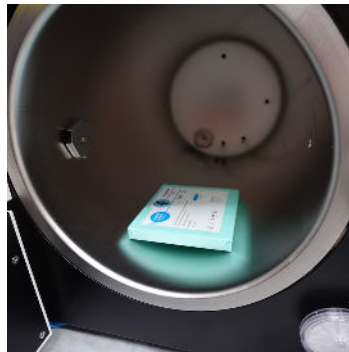
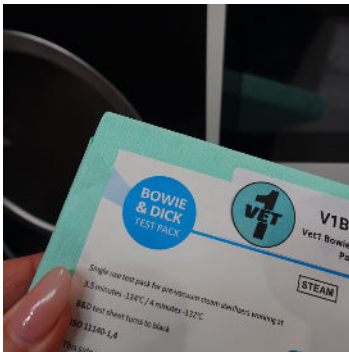


AUTOCLAVE

How to run a Bowie & Dick Test



- 1 Place the test pack in the empty chamber on the bottom shelf.
- 2 Run the Bowie Dick Test Cycle.
- 3 Remove test pack from autoclave.



- 4 Open the test pack and interpret and record results.



BEFORE



PASS

VET1 Specific Tests

Indicator Colour Solution: Initial Color from Blue to Black

FAILED TESTS

If the patterns come out with any signs of spots, blotching, uneven tones and **ANY** signs of the base colour still remaining, this is classified as a failed test.

A failed indicator result can be caused by several conditions, can include:

- Potential Air leak
- Presence of Non-Condensable Gas (NCG)
- Presence of moisture
- Superheated Steam

If you experience failed tests, refer to your manufacturers manual for troubleshooting.

AUTOCLAVE

Filling the Autoclave

IMPORTANT TO KNOW

Steam travels upwards from the base of the chamber in the autoclave

MAKE SURE THERE IS ENOUGH WATER IN THE VALVE FOR IT TO PRODUCE HEAT AND STEAM



CORRECTLY PLACED

ENSURE THAT ALL THE INSTRUMENTS THAT YOU WILL PUT INSIDE THE AUTOCLAVE ARE SAFE TO WITHSTAND HIGH HEAT AND STEAM PRESSURE

Document your autoclave cycle including the time and number of instruments you sterilised so everyone in your workplace will be aware of which instruments were sterilised and which are otherwise.

DO NOT OVERLAP STERILISATION BAGS

Ensure no **overlapping** as this will interfere with the steam being able to reach all areas of the kits

Close the door firmly and set the appropriate autoclaving time, depending on the instruments to be sterilised.



AUTOCLAVE

Autoclave Classification

Here's the 3 types of autoclave classification

CLASS B AUTOCLAVES

Class B autoclaves are compact, but their performance levels are comparable to those of the largest machines in hospitals. The letter “B” stands for “big small sterilisers”, because they are small machines that offer big performance. Any type of load can be sterilised in a Class B autoclave. This includes porous materials, products in pouches, textiles, and hollow items such as wands, turbines, and tips. The applicable standard for equipment of this kind is EN 13060, which is specifically dedicated to small steam sterilisers (i.e., machines with a sterilisation chamber that is smaller than the sterilisation unit). The standard distinguishes between sterilisation cycles based on the materials being sterilised (solid loads, type A solid loads with hollow sections and type B solid loads with hollow sections).

CLASS S AUTOCLAVES

Essentially, it is an intermediate class between Type N and Type B autoclaves and the characteristics are not defined by any standards. It simply depends how they are made. Only the manufacturers can provide details of their performance capabilities, which are established by specific tests. Just because it's classed as an S, doesn't mean it can do porous materials & textiles.

CLASS N AUTOCLAVES

Class N autoclaves are compact, and they are for sterilising simple materials. The letter “N” stands for “naked solid products”. Therefore, these autoclaves cannot be used to sterilise textiles, porous loads, hollow items or even products in pouches, as the cycles do not have the right characteristics to pass specific physical tests. Another potential weakness of these machines is that the required steam penetration cannot be guaranteed. Among other things, it is dependent on the creation of a vacuum at the start, which is not obligatory in these machines.

WHAT IS BEST FOR VETERINARY PRACTICE?

Therefore, the most suitable machine for a veterinary practice is a Class B autoclave, because it offers greater flexibility and is suitable for a wide range of settings. Although they are small, Class B autoclaves can offer outstanding performance, unbeatable efficiency, and the highest possible safety standards. Their noteworthy strengths include easy handling thanks to their ergonomic designs and energy savings due to their low power consumption. User-friendly Class B autoclaves are the epitome of hygiene and safety, as well as practicality.

