Systec VX-65

Included in the basic price:

- Fully automatic, microprocessor control including 12 programs:

  1-3 Solids
  4-5 Waste destruction bags
  6-7 Liquid waste
  8-11 Liquid Media
  12 Cleaning

- Integrated separate steam generator (no heating elements in sterilization chamber)
- Novel safety ring-lock closure system with lip seal
- Temperature and steam pressure up to 140°C / 4 bar absolute pressure, extendable to 150°C / 5 bar absolute pressure
- Thermal lock: door lock controlled by pressure and medium temperature according to Pressure Vessel Regulations
- Flexible PT-100 temperature sensor for reference vessel
- Medium temperature-controlled sterilization time
- Electronic pressure transducer for pressure and temperature control
- "Autofill" - Automatic demineralized water feed for steam generation
- Special program for waste destruction with pulsating heat-up period for improved ventilation of waste bags
- Start by clock / timer for programmed start time
- Steam exhaust condensation, water cooled, thermostatic controlled
- Common collector connection for all outlets
- Emptying valve
- Base plate for vessels, baskets etc.
- Validation port
- RS 232 interface for external data transfer
- Prepared for subsequent printer installation
- Prepared for subsequent rapid cooling installation
- Prepared for subsequent installation of vacuum system
- Prepared for subsequent drying installation
- Safety cut of at low water level
- Safety cut of at excess temperature

Laboratory autoclaves Systec V-series are characterized by their modern design, user-friendly functions and state-of-the-art technology.

Lid and locking system:
The innovative ring-lock closure in combination with a robust lip seal system ensures that the autoclave lid is hermetically sealed and hence safe. The lip seal is additionally compressed as a result of the steam pressure; thus, additional compressed air is unnecessary. Locking takes place automatically when the lid is closed.

The ring lock is released at the press of a button, whereby the lid opens automatically. It can also be set individually for each program to open the lid automatically after the end of the sterilization cycle. The seal is made of heat-resistant silicone and is very reliable. A heat-resistant plastic cover protects the user from contact and possibly injury by hot components.

Systec V-series autoclaves are fitted ex-factory with a temperature-controlled door lock according to Pressure Vessel Regulations for the sterilization of liquids and according to ISO/DIN regulations. In addition, the doors remain locked as long as there is excess pressure in the chamber.

Control mechanisms:
A specially developed microprocessor regulates all the functions of the autoclave. These include steam pressure, temperature, sterilization time as well as the optional functions of rapid cooling, pre- and post-vacuum and drying. In cases of deviation from the set values, a corresponding alarm is displayed.

Control is by menu and easy to operate. All sterilization parameters can be altered by using special numerical codes. The control panel is ergonomically integrated into the plastic lid cover of the autoclave.

Steam generator:
Steam generation takes place in a vessel that is completely separated from the sterilization chamber (i.e. no heating elements in the chamber itself). The steam generator is built-in into the autoclave housing. As the generator is separated from the chamber, it needs not be cooled during the cool-down-phase.

Advantages:
- More rapid cooling.
- Less cooling water required.
- Steam is immediately available after cooling as the steam generator is not cooled.

The steam generator incorporates all the necessary control functions, valves and pumps for filling with de-mineralized water.

Steam exhaust condenser:
The exhausted steam vapor generated during the course of the program is automatically cooled and thus condensed. This exhaust condensation process prevents the release of unpleasant odors and protects waste water piping that may be made of plastic from overheating. The process is thermostatically regulated via a PT 100 temperature sensor; this saves cooling water.

Pressure vessel safety valve:
The pressure vessel of the autoclave is made of corrosion-resistant stainless steel 316L (1.4404) and is electro-polished for ease of cleaning. Should the pressure exceed a maximum level, a type approved safety valve is activated and releases the pressure.

The fully automatic, menu-controlled microprocessor incorporates 12 standard programs:

Individual program parameters such as temperature and time can be set and stored for each of the programs.

Program 1-3: Fast cycle for solids, instruments, apparatus and plastic items, with rapid steam exhaust.

Program 4-5: For waste material in waste destruction bags. Uses pulsating heat-up phase for better ventilation of the destruction bags.

Program 6-7: For sterilization of liquid waste material with slow steam exhaust. (or rapid retro-cooling as an option).

Program 8-11: For liquids with subsequent controlled steam exhaust and self-cooling (or rapid retro-cooling as an option).

Program 12: Cleaning program with rapid steam exhaust.

Program variants and programs for special applications are available on request.

The programs run fully automatically. Temperature measurement is done in the sterilization chamber or in a reference vessel (on liquid sterilization) via a flexible temperature sensor and by a second fixed sensor at the coldest spot in the condensate exhaust. Both temperature sensors need to measure the required temperature during the sterilization phase. A lower temperature will cause a failure message.

The control mechanism consists of combined temperature and pressure regulation which allows the set steam pressure to be exceeded by up to 0.3 bar during the heat-up phase without allowing the product temperature to be exceeded. This means that the heat-up phase can be shortened by ca. 50 % compared with simple temperature regulation. The sterilization temperature can be freely selected from 60 to 140°C and the sterilization time from 1 to 9999 minutes.

The product- respectively the chamber temperature and the pressure within the chamber are permanently displayed during the entire program. An extended temperature and pressure range up to 150° C and 5 bar absolute pressure is optionally available. This feature can also be retrofitted later as the pressure chamber is standard build for the pressure of 5 bar.

Validation, documentation:
For validation with external temperature sensors, a 1/2" validation port is fitted. Various other options are also available for documentation purposes – from printer to PC software via interface RS 232 or separate data logger systems for GMP-conform documentation.

Options:
Further options include various rapid cooling systems both with and without support pressure, vacuum systems, drying processes, ventilation within the chamber, steam-air mixtures, hot water spraying or sub-aqua systems, lifting devices for the items to be sterilized, exhaust air filtration for infective microorganisms, prolonged temperature maintenance phases for the sterilization of extremely resistant microorganism or for material stress testing in industrial applications. Additional special programs can be compiled and tested according to customer specifications.

All the above options can also be retrospectively fitted to current Systec Autoclaves. The basic version includes all the connections necessary for any of the options.

Connections:

Electrical connections:	**380 - 400 V 3 phase (CEE socket 16 A)** (220 Volt or other voltage and single phase operation on request available)
Demineralized water:	$^3/_4$" stopcock for tube connection
Process water (tap water):	**$^3/_4$" stopcock for tube connection** (for exhaust vapor condensation; apparatus can also be operated without this)
Drain:	$^3/_4$" tube connection; max. 400 mm from floor or floor drain (siphon).