Getinge HS33 (60 liters)
Steam Sterilizer
Product Specification

Getinge Infection Control is the world leading provider of solutions for sterile processing in the healthcare sector. We aim to ensure the highest quality and safety at the lowest total cost. We offer complete solutions for a seamless work-flow, reducing the risk of contamination while helping healthcare to increase efficiency.

The Getinge HS33 (60 liters) is a fully automatic steam sterilizer for general-purpose healthcare use. It has preset programs for the most common sterilization goods. The program cycles employ mechanical air removal with a series of vacuum/pressure pulses to effectively displace air for safe sterilization. The chamber dimensions are adapted to sterilization, using wire baskets or other accessories specially made for this chamber size.

Application

A sterilizer for general-purpose steam sterilization of instruments, textiles and hospital utensils at central sterilization departments, operation departments, medical and dental clinics, laboratories and laundries. The temperature range is 105-135 °C.

Quality Statement

Confidence in the Getinge Group is the most important quality criteria. This is the hallmark of all our external and internal commitments, activities and products. Products and services supplied by Getinge conform to the agreed terms and expectations. The achievement of these quality goals is the basis for continued competitive and successful enterprise.

Customer

Reference

Standards and Codes

The Getinge HS33 sterilizers comply with relevant standards, codes and directives in the country or region of installation. The equipment is manufactured in accordance with industry requirements and standards.
A Declaration of Conformity, stating the relevant standards, codes and machine directives with which the equipment complies, is available on request.

Key Features

- Standard chamber size with a 1 STU capacity
- Single or double door pass-through configurations
- Manually or automatically operated door(s)
- High-speed Sterilization™
  - Wrapped cycle in ~25 minutes including drying
  - Flash cycle in ~14 minutes
- Stainless steel construction - chamber in 316Ti, booster tanks and covers in 304
- Small footprint. Less than 600 mm width enables installations in the most narrow places
- Only 10A when connecting to 3 x 400 V
- Water consumption only about 60 liters per process, thanks to clever recycling of the process water for the vacuum system. The optional water-saving module reduces the water consumption by additionally ~90%.
- Built-in water treatment system as an option, takes no extra space in the installation
- Wide range of accessories, such as loading system, trays, baskets etc.

Warranty

Getinge warrants that each sterilizer is carefully tested, inspected and leaves the factory in proper working condition, free from visible defects. The sterilizers have a general one-year (or 1,200 processes - whichever comes first, years or processes) product warranty.
The warranty is only valid when maintenance and operations are performed in accordance with Getinge's instructions and recommendations. Furthermore, Getinge guarantees that the lifetime of the sterilizers is at least 10 years. During this period of time, the availability of spare parts is guaranteed.

Check the appropriate box.

☐ Standard choice

○ Optional

Commercial specifications only. Pictures and drawings are non-contractual.

Subject to change without notice.

Principle of Operation

The Getinge HS33 sterilizer is designed to consistently sterilize all type of heat-resistant goods, such as wrapped, unwrapped, porous, hollow and solid.

The equipment is fully automatic in operation and follows the same general sequence according to four pre-programmed sterilization cycles. The total process time of the standard cycle can be as short as 25 minutes, including drying!

No.	Standard programs	Load
P01	134 °C Textile	Wrapped, unwrapped, porous, hollow and solid load
P02	121 °C Textile	Wrapped, unwrapped, porous, hollow and solid load
P03	134 °C 18 minutes	Wrapped, unwrapped, porous, hollow and solid load
P05	134 °C Flash	Unwrapped, solid load
P22	Heating-up program	(only for double-door version)
P04	Bowie & Dick	Steam penetration test (also Helix)
P06	Leakage test	Leak test

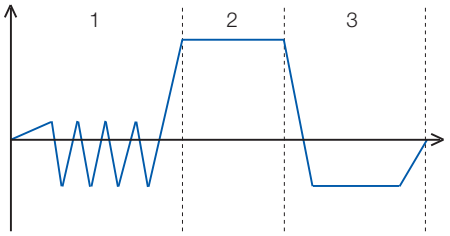
In the beginning of the day, the sterilizer is switched on and starts to heat up (if switched off during the night). After heating up, which takes approximately 45 minutes, a flash cycle is launched to heat up the chamber and piping system. If double-door version, a separate heating-up program is used. To save time, Getinge recommends not switching off the power for the night. Alternatively, a timer can be mounted on the sterilizer to start the heat-up some hours before the clinic/department opens. In order to protect the door gasket and to save energy, the chamber door should be closed but not locked between the cycles.

Standard cycle: Textile

The steam is produced in a separate steam generator by water from a fixed external supply. The steam is led to the chamber, and the condensation is led off to the drain.

The standard program can be divided into three phases:

1. Pre-treatment
   The purpose of pre-treatment is to remove air from the chamber and from the goods. Air prevents the requisite contact between the steam and microorganisms to be killed. Pre-treatment consists of steam injection and evacuation pulses in different phases depending on the program selected. In addition, the humidification essential to killing mainly takes place during the pre-treatment stage.
2. Sterilization “Holding time”
   During the sterilization, the micro-organisms are inactivated or killed. Sterilization takes place by maintaining the saturated steam's relation (boiling point at a specific pressure). The sterilization phase lasts for a preset number of minutes at the preset temperature and pressure.
3. Post-treatment
   During the post-treatment, the load is dried. Depending on the program, the sterilizer generates a vacuum defined in terms of pressure and duration. At the end of the phase, air is forced through an air filter until the chamber reaches atmospheric pressure.
   The sterilization and drying times are adjustable in the programs.



Schematic textile cycle

Basic Design Features

The Getinge HS33 sterilizers are designed and constructed to meet the rigorous requirements of the MDD. Design features and material definition conform to the specifications listed below, unless specifically mentioned as optional.

Chamber construction
The sterilizer chamber is constructed from solid, high-quality, type 316 Ti / W.Nr.1.4571 stainless steel. Internal surfaces are glass-blast-polished, and the internal corners are rounded to facilitate cleaning. The sterilizer chamber is completely insulated with a 30-80 mm chloride-free mineral wool, encased in a rigid removable galvanized sheet housing. The chamber is mounted on a powder-painted steel framework with adjustable feet.

Chamber volume and size
The sterilizer chamber has a volume of 63 liters and the internal dimensions are 320 x 320 x 620 mm (W x H x D). The useable internal chamber space is 300 x 300 x 600 mm (W x H x D).

Capacity
The sterilizer chamber has a capacity of 1 STU (300 x 300 x 600 mm) sterile module.

Panels
Outer panelling and doors are made of type 304 stainless steel for optimal protection against corrosion.

Validation connections
The chamber is provided with a connection for optional vacuum/pressure gauge (VT) and a 1" throughput for a test sensor (TT). The connection is located on the right-hand side of the sterilizer. Right hand is the primary entrance.

Chamber door(s)
The door has a space-saving and safe vertical sliding door construction, either manual or automatic operated, single or double door. The automatic door is fully automatic in operation, lowered by a pneumatic cylinder and raised by a gas spring, balanced to stop if obstructed while closing. If compressed air is missing, an optional silent oil-free compressor is available. It is built in inside the sterilizer. The compressor has a 4-liters tank and is dimensioned for the sterilizer only.
Door operation is controlled via push buttons on the control panel. The manual door is manually lowered and raised and locked by turning the handle 180 degrees to “locked” position. The door locks electrically and mechanically when the process starts, and unlocks at the end of the process once atmospheric pressure is reached. It is not possible to unlock the door during the process.

☐ Single door manual
☐ Single door automatic (needs compressed air)
☐ Double door automatic (needs compressed air)
○ Air compressor, built-in (when choosing automatic door and compressed air is not available at installation site)

Service access
Service can be performed from the front and the upper side (both single and double door models). Wheels, made of solid stainless steel, are available in case the sterilizer is narrow installed. Replacing the feet.

○ Wheels (to facilitate service if installed in a narrow place)

Wall connection
Stainless steel frame to be mounted around the sterilizer when built-in in a wall. Covering the gap between sterilizer and wall.

○ Wall connection kit

Chamber pre-heating
The chamber is pre-heated by a 1,000 W electrical jacket.

Steam supply
The sterilizer has a separate built-in electrical steam generator (3.6 kW), mounted under the sterilizer chamber. The unique design has an integrated energy-storing system which builds up power for sterilization of huge loads in a short time.

Long-life elements
The steam generator is powered by four heating elements, each 900 W, which are never in contact with the water. This design gives the elements an extremely long lifetime.

Air filter
A disposable air filter is provided for filtering of the atmospheric air entering the chamber. The air is used to equalize the chamber pressure at the end of the sterilization cycle. The filter separation efficiency is higher than 99.998 % for particle size 0.2 µm.

Water quality for steam generator
The integral steam generator is designed for demineralized (deionized, RO or distilled) water supply of max 30 µS. An optional water treatment unit can be integrated, factory-mounted, inside the housing of the sterilizer. The water is used for steam production. The water is led to the storage tank, from where it is fed to the steam generator. When the steam is condensed back into water, it goes into the sterilizer's drain water tank

☐ External supply with demineralized, max 30 µS water available at site of use (i.e. no integrated deionizer needed)

○ Integrated RO system, see page 12

Water quality for vacuum system
The vacuum system is designed for tap water (< 4 dH).

Pressure gauge
Pressure gauge in bar, mounted in the panel, showing the chamber pressure. When double door version, the pressure gauge is mounted on both loading and unloading side.

Ventilation
The sterilizer demands good ventilation. On one side of the sterilizer a fan (blowing from sterilizer) is taking care of the necessary cooling-down of the PLC and general sterilizer system. The fan must never be blocked.

☐ Left upper central side from loading view

○ Right upper central side from loading view

Personal safety features
In addition to the door safety systems, the chamber is provided with a pressure monitor that ensures that the chamber pressure has been equalized prior to allowing the door(s) to open.

Electrical components
Terminals, contactors etc. are housed in a water-tight cabinet (IP54). Other components, e.g. switches and valves, are mounted directly on the sterilizer. The electrical cabinet is located on the top of the sterilizer chamber.

Packing for Shipment

The material used for the crate/case is according to SJVFS 1997:65 and can therefore be used for shipments all over the world.

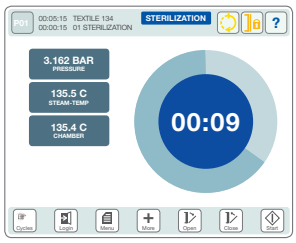
- Crate (for deliveries within the Nordic countries)
- Case (rest of the world)

Control System

The PACS 350 modular PLC system is dedicated to controlling Getinge sterilizers, including:

- CPU processor with battery backup
- Digital in- and outputs for sterilizer control
- Analog measuring inputs
- COM ports for printer and PC communication

PACS 350 controls all system functions, monitors system operations, both visually and audibly alerts the operator of cycle malfunctions and, on demand, provides visual indication of the chamber temperature and pressure.



Avanti display - Touch multi color

Operator panel(s)
The PACS 350 control system is operated via an easy-to-use menu tree. As default, the operator has access to the cycle selection, cycle start and door control. Operators can only run type-tested cycles. Access to other functions, such as running test cycles, setting parameters, calibration, service and maintenance is controlled using pre-defined access levels preventing unauthorized access. The operator panel is located above the chamber door. As standard, the HS33 is equipped with an Avanti multicolor touchdisplay. The double door version is equipped with a Classic piezo buttons display on the unloading side.

Temperature and pressure sensors
The PACS 350 control system has built-in linearization to correct the individual characteristics of each type of sensor connected to the system. Each sensor is calibrated with individual constants to correct the deviation in manufacturing and aging. The following sensors are provided and are used in the automatic control of the sterilizer:

- Chamber drain temperature sensor
- Steam generator temperature sensor
- Electrical chamber jacket temperature sensor
- Chamber pressure sensor

The temperature sensors are of Pt100 type.
The pressure sensor is an absolute pressure transducer, range 0-4 bar, output 4-20 mA.

Alarms
Automatic process check-up and failure corrections are provided with the PACS 350 control system. In case of a disturbance during the sterilization cycle, the process enters an alarm phase which safely ends the process automatically. The range of alarms includes:

- Temperature and pressure sensor failure
- Time-outs
- Door(s) not properly closed
- Power failure (less than 10 seconds power break will be ignored, i.e. no alarm and the process will continue when the power comes back)
- Continuous self-check of all safety devices

Self-diagnostic program
PACS 350 features a comprehensive alarm/alert system, with automatic triggering of pre-programmable information alerts (service intervals, maintenance etc). The self-diagnostic program which monitors the sterilizer performance is pre-programmed to alert the operator for:

- Time for service (the system counts 1,200 cycles and then gives an alarm)
- Error codes

Self-diagnostics - water quality sensor
The steam supply system has a built-in safety device, securing the water quality for steam production. At levels above 30 µS/cm, an alarm indicates time for changing the water filter. If the alarm is repeated 20 times, the sterilizer will be shut off. Once the water filter is changed, the sensor will accept the water and the unit can be used again.

- Check water quality
- Change water filter

PACS 350 cycle data
Cycle data is sent during and on completion of the cycle via an RS232 port. The cycle information is equal to the printer print-out, see below. A software is needed for reading the data on a computer. When using T-Doc, Getinge IT recommends the NetCom solution. The connection is mounted on the rear side.

○ RS232 serial data communication

Independent cycle documentation
PACS 350 features cycle documentation independent from control system with separate ad converters and independent time measuring. The independent cycle documentation uses separate sensors for pressure and temperature. PACS 350 registers every 20 milliseconds.

☐ Thermal printer (mounted on the loading side)
Receipt registration covers date, process start time, machine name, machine ID, cycle counter, parameters, program name, start signal, transition points, phases, pressure, temperature, process time, finish. The printer logging interval is adjustable (min. once per second). Default is each transition point in pre- and post-treatment and every 30 seconds during holding time.

Getinge Log System.
With the Getinge Log system, the process data is transferred electronically to a PC. The software undertakes the encrypted storage after importing the data. A tamper-proof PDF protocol can be created and passed on to third parties for review or verification. To be used with RS232 connection. No license required.

○ Getinge Log LAN. Via the practice network, the process data is transferred to a PC, where it is filed in a database in encrypted form.

○ Getinge Log USB. If there is no network connection available, the data on the device can be stored on the USB stick and transferred to the PC. The transfer can take place after each machine operation or at the end of a work day.

○ USB-process documentation unit
Built-in USB storage solution, storing each process as an PDF, both numerical and a small two color graph. The processes are saved on a USB memory stick. Built-in NetCom, USB in front panel. To be used with LAN connection license.

○ Process release (USB storage included)
Built-in process release procedure. At the end of the process, and before it is possible to open the door, the user is asked to digitally release the process directly on the display. Following the procedure ending with a signature in terms of a password, the sterilizer produces labels which can be attached on the load after opening the door. The label also features a bar code. Number of labels can be choosen directly on the display. Built-in NetCom. To be used with LAN connection license.

Mechanical Features

Valves and components
All standard components are non-proprietary and commonly available. Valves and major components are arranged to be easily accessible for service and replacement.

Steam generating pump
The steam generator is fed with deionized water by a piston pump giving a flow of 420 ml/min.

Vacuum Systems

Ejector system
A highly efficient ventury vacuum system, designed for quiet operation, effectively removes the air from the chamber. The ventury is fed with water by a three phase circulation pump. The effect of the pump is 550 W.

☐ Ejector system 50 Hz

○ Ejector system 60 Hz

Water-saving module
For the creation of vacuum in the sterilization process, the water-saving module replaces the standard ejector system. The water-saving module consists of a unique water ring pump, which saves between 80% and 95% of the water consumption, i.e. between 7 and 15 liters/process depending on sterilizer load.

○ Water-saving module 50/60 Hz

Ordering Information HS33 60 liters

General

- 60 liters chamber volume
- Avanti touch multi color display
- Media connection (water, air, RS232) on the rear side

Use the description to select the appropriate model.

Door selection

☐ Single door manual
☐ Single door automatic (needs compressed air)
☐ Double door automatic (needs compressed air)
◯ Air compressor, built-in (when choosing automatic door and compressed air is not available at installation site)

Service access (page 4)

◯ Wheels (replacing the feet - facilitates service if installed in a narrow place)

Wall connection kit (page 4)

◯ Wall connection kit

Water quality for steam generator (page 5 and 12)

☐ External supply with demineralized, max 30 µS water available at site of use
◯ Integrated RO system, see page 12

Ventilation (page 5)

☐ Left upper central side from loading view
◯ Right upper central side from loading view

Pacs 350 cycle data (page 6)

◯ RS232 serial data communication

Independent cycle documentation (page 7)

☐ Thermal printer on control side
◯ Getinge Log LAN, no license required
◯ Getinge Log USB, no license required
◯ USB-process documentation unit, to be used with LAN connection license
◯ Process release (USB storage included), to be used with LAN connection license

Vacuum system (page 7)

☐ Ejector system 50 Hz
◯ Ejector system 60 Hz
◯ Water-saving module 50/60 Hz

Voltage supply

Please refer to the installation drawing for correct amperage.

◯ 230 V 3-phase ◯ 400 V 3-phase

Operator display language

◯ Bosnian	◯ Dutch	◯ Greek	◯ Lithuanian	◯ Serbian
◯ Bulgarian	◯ English	◯ Hungarian	◯ Norwegian	◯ Slovak
◯ Chinese	◯ Estonian	◯ Icelandic	◯ Polish	◯ Slovene
◯ Croatian	◯ Finnish	◯ Italian	◯ Portuguese	◯ Spanish
◯ Czech	◯ French	◯ Japanese	◯ Romanian	◯ Swedish
◯ Danish	◯ German	◯ Latvian	◯ Russian	

User manual language: _____

Conformity

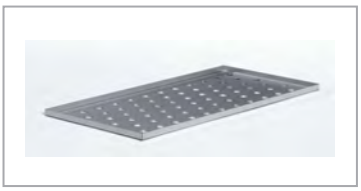
Getinge AB is certified to develop, design and manufacture CE-marked (MDD) products for the healthcare sector, to countries covered by the EES treaty. CE conformity is required within the EC countries.

- CE and MDD conformity, e.g. for hospitals, dental and medical clinics or commercial re-use sterilization

Loading

The sterilizer chamber is delivered as standard with a three-level aluminum rack with one tray, 483758670. The aluminum rack can take both baskets and trays.

☐ Aluminum rack with one tray (included).



◯ Perforated aluminum tray, 603 x 308 x 15 mm, art. no. 483758670 (three fit in one rack).
Please state wanted number of trays: ____ pcs.

◯ Basket, 590 x 300 x 190 mm, art. no. 483703770 (one fits in one rack).
Please state wanted number of baskets: ____ pcs.

◯ Basket, 590 x 300 x 100 mm, art. no. 483703771 (two fit in one rack).
Please state wanted number of baskets: ____ pcs.

Option Loading Trolley

As an option, the sterilizer can be equipped with a loading system. The loading system consists of one trolley, where different rack systems can be placed, see below. When using a loading system, the three-level aluminum rack is removed and replaced by the aluminum rack without levels, art. no. 48320184. NOTE! The tray 483758670 only fits the three-level aluminum rack, not below loading systems.

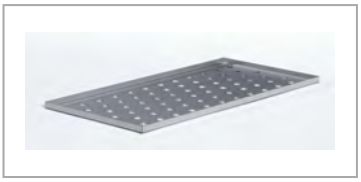
☐ No additional loading equipment (three-level aluminum rack with one tray included).

◯ Aluminum rack without levels, art. no. 48320184, for below loading options.

◯ Loading trolley, art. no. 564710370. Use with rack without levels and options below.

◯ Tray on rollers, stainless, 612 x 312 x 35 mm, art. no. 483766570, for containers or baskets (art. no. 483703770 or 483703771).
Use with rack without levels, art. no. 48320184.

◯ Rack on rollers, stainless steel, art. no. 48320429, for three trays of size 583 x 293 x 15 mm (art. no. 483229401).
Use with rack without levels, art. no. 48320184.



◯ Perforated aluminum tray, 583 x 293 x 15 mm, art. no. 483229401 (three fit in one rack on rollers, art. no. 48320429).
Please state wanted number of trays: ____ pcs.
Use with rack on rollers, art. no. 48320429.

◯ Rack on rollers, art. no. 48320428, stainless steel for 18 dental trays of size 287 x 186 x 39 mm.
Use with rack without levels, art. no. 48320184.

Customer

Reference

Sterilization Prozesses

The sterilizer is equipped with a set of pre-programmed cycles. The cycle times mentioned in all documentation are approximate with factory-set values and depend on the load. The heavier the load, the longer the process. The material in the load also affects the process time. All weight indications of the load include the goods to be sterilized as well as the weight of racks, trays, containers etc. The lighter the trays etc, the more goods/weight can be sterilized.

Adjustable parameters
The sterilization and drying times are adjustable, from the minimum (as per the type test) to higher values depending on cycle type, see following pages.
Adjustments are easily done by the operator from the display and require a password (558).

Standard Processes

The sterilizer is equipped with the following standard processes:

P01 Textile 134 °C
MDD type-tested process. For sterilization of wrapped or unwrapped instruments, porous and hollow loads.

Total process time incl. drying (according to type test):

Empty chamber	~22 min
Solid load, ~8 kg (“average load”)	~35 min
Full solid load, 14.3 kg	~49 min
Small textile load, 0.25 kg	~35 min

P02 Textile 121 °C
MDD type-tested process. For sterilization of wrapped or unwrapped instruments, porous and hollow loads.

Total process time incl. drying (according to type test):

Empty chamber	~35 min
Solid load, ~8 kg (“average load”)	~45 min
Full solid load, 14.3 kg	~55 min
Small textile load, 0.25 kg	~45 min

P03 18 minutes 134 °C
MDD type-tested process for the decontamination/sterilization of CJD-related goods (wrapped or unwrapped instruments, porous and hollow loads). Please note that this cycle is a general-purpose cycle, to be configured in accordance with local requirements and regulations. Getinge assumes no responsibility for the sterilization results of CJD-related goods.

Total process time incl. drying:

Empty chamber	~40 min
Solid load, ~8 kg (“average load”)	~49 min
Full solid load, 14.3 kg	~62 min
Small textile load, 0.25 kg	~53 min

P05 Flash 134 °C
A rapid process, e.g. for single, unwrapped solid instruments. The cycle can also be used to warm up the sterilizer before daily use or leak test. Password (558) required.

Total process time:

Empty chamber	~14 min

P05 Heating-up program
Only for double door version. Password required (558).

Total process time	~9 min

Standard Processes

Description	Parameters	Range	Default
P01 Textile 134 °C	Pre-pulse vacuum Pre-pulse positive Sterilization temperature Sterilization time Drying time, vacuum	 4-10 min 5-30 min	4 0 134 °C 4 min 10 min
P02 Textile 121 °C	Pre-pulse vacuum Pre-pulse positive Sterilization temperature Sterilization time Drying time, vacuum	 16-30 min 5-30 min	4 0 121 °C 16 min 10 min
P03 18 minutes 134 °C	Pre-pulse vacuum Pre-pulse positive Sterilization temperature Sterilization time Drying time, vacuum	 18-30 min 5-30 min	4 0 134 °C 18 min 10 min
P04 Bowie & Dick test	Pre-pulse vacuum Pre-pulse positive Sterilization temperature Sterilization time Drying time, vacuum		4 0 134 °C 3.5 min 3 min
P05 Flash	Pre-pulse vacuum Pre-pulse positive Sterilization temperature Sterilization time		4 0 134 °C 3.5 min
P06 Leak test	Leak rate		30 min
P22 Heating-up program (only double door)			9 min

Test Processes

The two (2) included test processes are:

P04 Bowie & Dick test
A test cycle to control the air removal and steam penetration of the sterilizer cycle. Password (558) required. Can also be used for Helix test.

Total process time with test pack ~18 min

P06 Leak test
The sterilization process is sensitive to residual air in the chamber. If the chamber is not leak-tight, sterilization efficiency may be impaired. Getinge vacuum sterilizers are equipped with a fully automatic leak test process to confirm leak-tightness of the chamber.
Password (558) required.

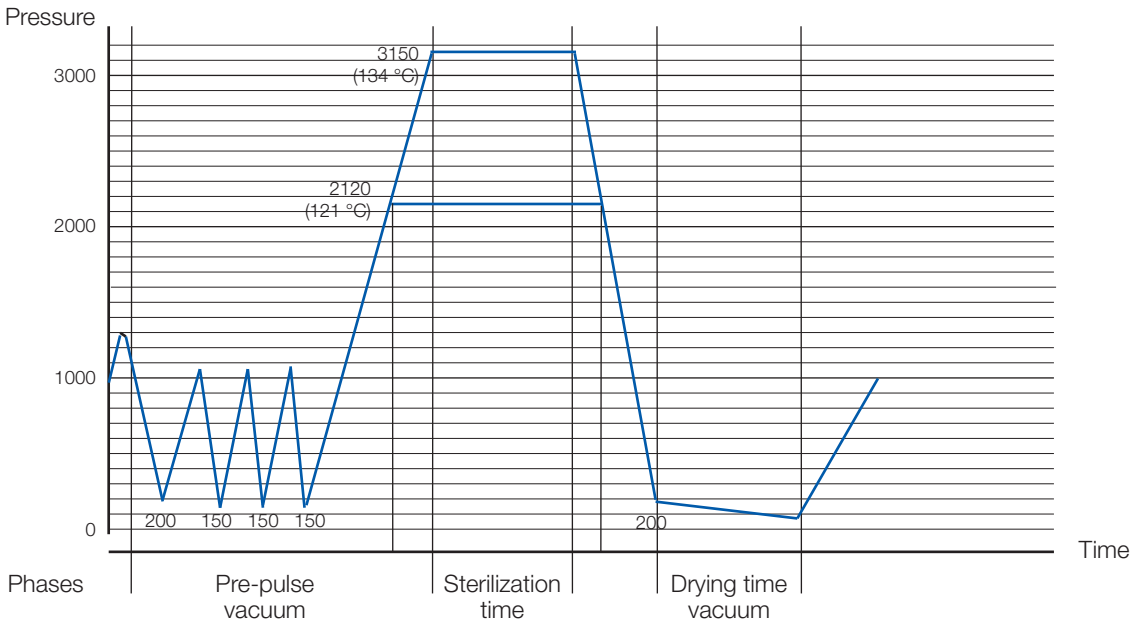
Total process time ~30 min

Optional Process

P10 Leak test 285
As an option Getinge HS33 can be equipped with a fully automatic leak test process to confirm leakrate of <1.3 mbar/min according to EN 285.
Password (558) required.

Total process time ~30 min

Standard Process



Water Purification System - Osmosis

Principle of operation - filtration

1 **Stage 1**
Carbon block filter reduces chemicals such as chlorine, organics and also sediment particles (nominal filtration: 5 µm).

2 **Stage 2**
Sediment cartridge (100% polypropylene) with a 1 µm nominal filtration removes small particles like dirt, sediment, sand and other physical particles.

3 **Stage 3**
TFC-membrane reduces 90-98% of dissolved minerals, salts and other contaminates; Capacity: 250 liters per day / 10.5 liters per hour at 16.0 °C.

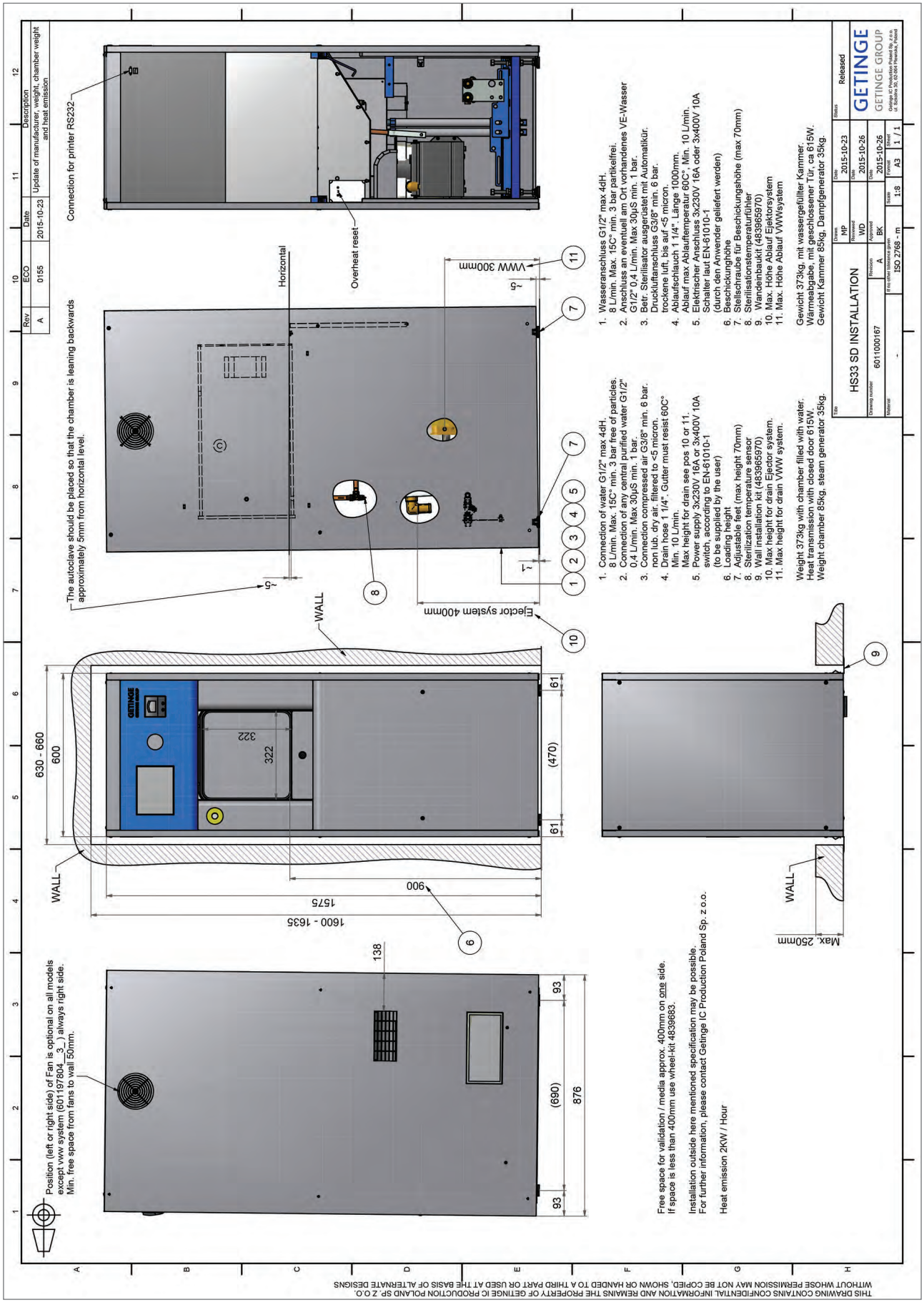
4 **Stage 4**
High-capacity ion-exchange cartridge purifies the RO water and achieves a stable conductivity of 0 µS.

5 **Booster pump**
Low voltage, high quality booster pump with a quiet, continuous operation providing reliable inlet pressure to the membrane.

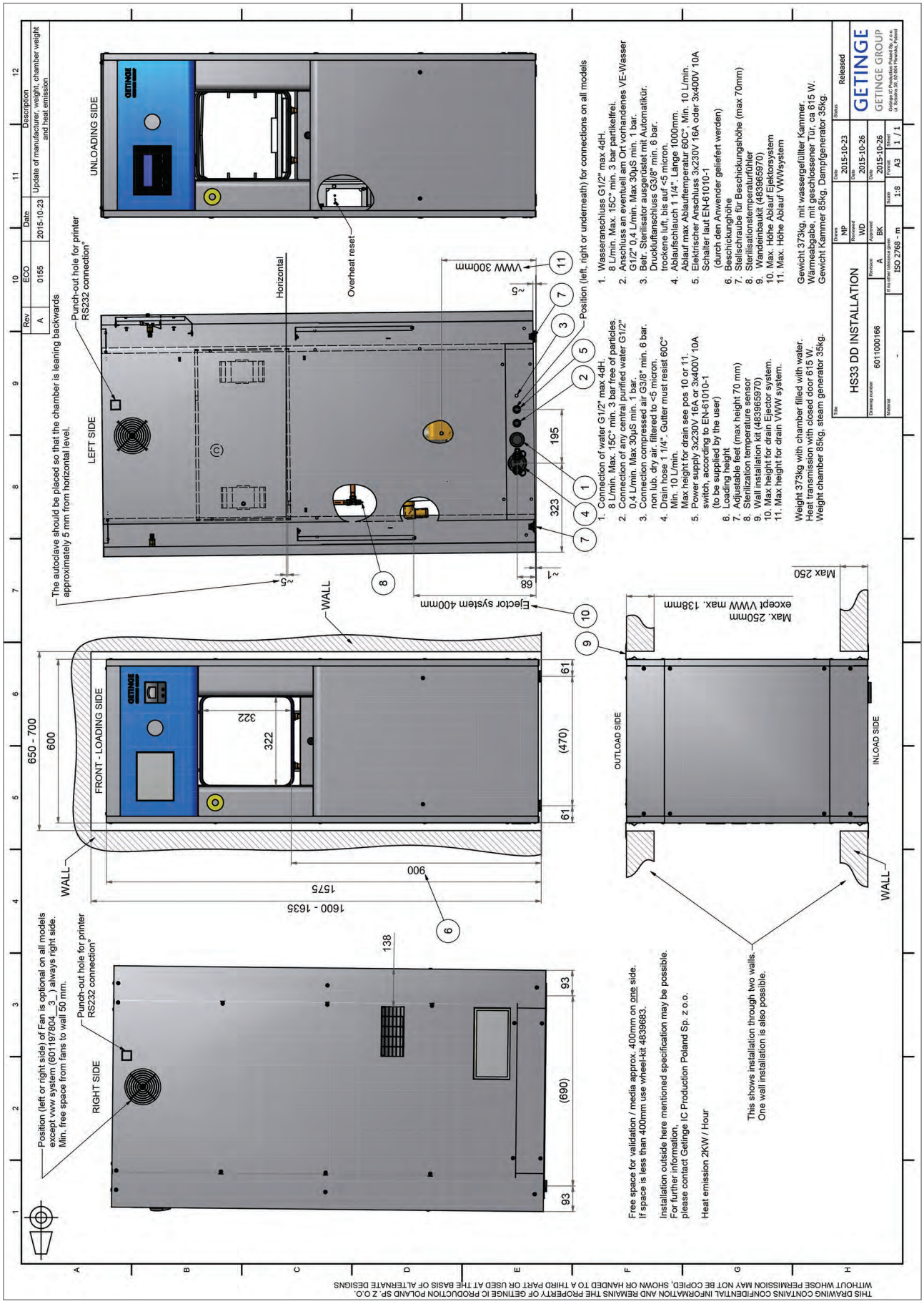
Technical Data HS33 60 liters

External measurements (w x d x h)	595 x 880 x 1,575 mm (single door/double door)
Chamber size (w x d x h)	320 x 620 x 320 mm
Chamber corner radius	20 mm
Chamber volume	63 liters (1 STU)
Chamber weight	85 kg
Chamber design pressure	2.7 bar
Chamber regulations	AFS 1999:4, PED 97/23, EN13445, ASME VIII, JBA/MHLW
Chamber material	EN 1.4571 / 316 Ti
Door material	EN-AW 5754H111 / SB-247A92014T6
Loading height	900 + 0-100 mm
Max load (incl. rack, baskets, trays etc.)	Instruments: 15 kg, textiles: 7.5 kg (80 % of chamber volume)
Water connection	Pressure: 3-6 bar, quality: 4 dH, temp.: max 25 °C
Feed water for steam production	Deionized or RO water max 30 µS/cm
Max steam flow	420 liters/min
Tank volume	7 liters tap water, 5 liters deionized/RO water
Water consumption /process (depending on load and process type)	Ejector system: ~50-60 liters tap water Water saving system: ~7-15 liters tap water
Water consumption	Max 0.4 liters/min during steam production
Drain flow	Max. 12 liters/min
Electrical connection (max. variation)	400 V 3 N AC (±10 %) 10 Amp 230 V 3 N AC (±10 %) 16 Amp
Electrical consumption	1.75 kWh (average load), 0.77 kWh (stand-by)
Effect	Total: 5,500 W, steam generator: 4 x 900 W, jacket: 1,000 W
Frequency	50/60 Hz
Air supply	4-6 bar dry, filtered to 5 microns
Heat emission	Approx. 615 W (closed door), 1,300 W (open door)
Air filter	0.2 µm
Test pressure	4.2 bar
Weight (with water-filled chamber)	310 kg (373 kg)
Weight/cm^2	12.5 kg/cm^2
Weight, steam generator	35 kg
Documentation	Thermal printer connected to independent documentation system with separate pressure and temperature sensors

Dimensions - HS33
Single door version



Dimensions - HS33
Double door version



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Getinge Group is a leading global provider of products and systems that contribute to quality enhancement and cost efficiency within healthcare and life sciences. We operate under the three brands of ArjoHuntleigh, Getinge and Maquet. ArjoHuntleigh focuses on patient mobility and wound management solutions. Getinge provides solutions for infection control within healthcare and contamination prevention within life sciences. Maquet specializes in solutions, therapies and products for surgical interventions, interventional cardiology and intensive care.

Appendix

Document history, Product Specification Getinge HS33 60L

Date	Edition	Change	Updated by
2010-09-03	1009	First edition	Jesper Wahlin
2010-12-15	1012	Second edition	Jesper Wahlin
2011-06-29	1106	Text adjustments (Standards and Codes)	Louise Wicksell
2011-11-02	1111	Pictures added	Louise Wicksell
2012-04-12	1204	Added order information	Louise Wicksell
2012-12-18	1212	New loading trolley, removed OP20 etc	Louise Wicksell
2013-02-01	Rev A 1302	VWW first edition	Louise Wicksell
2013-05-15	Rev A 1305	Process times etc	Louise Wicksell
2015-06-30	Rev B 150630	New design, new deionizer, technical data	Louise Wicksell
2015-10-01	Rev C 151001	Liquid cycle removed, customer-defined process removed, installation drawings, technical data	Louise Wicksell