Product Specification

Getinge 86-series S-8666/S-8668 Washer-disinfector

DOC_PS07-0113_PRODSPEC_S-8666_S-8668><REV.E><LANG_EN><2020-08-17>

GETINGE

Contents

Getinge 86-series S-8666/S-8668 Washer-disinfector

Product Details

Application

The Getinge 86-series washer-disinfectors include three different models; S-8666, S-8668 and the Turbo model S-8668T. This product specification addresses only the none turbo models S-8666 and S-8668. The S-8666 and S-8668 differ in chamber sizes, 316 L (83,5 gal.) versus 351 L (93 gal.). The sizes give a maximum 12 respectively 18 DIN capacity. All three machine models have the same look, but the S-8668T is visually identified by a "+" sign on the front, in the lower right corner of the glass door.

The Getinge 86-series washer-disinfectors ensure effective cleaning and disinfection with high throughput.

Advanced automation capabilities provide the option for automated loading and/or unloading that minimizes the need of staff intervention and shortens the waiting times, thus increasing the productivity.

Intended use

The intended use of the 86-series washer-disinfector is to clean, disinfect at a thermally low or intermediate level, and dry surgical instruments (solid and tubular), bowls, basins, glassware, receivers, suction bottles, baby bottles, anesthesia equipment and surgical shoes. The equipment can be made of stainless steel, aluminum, plastic, rubber, silicone or glass. The device is not intended to clean and disinfect invasive devices as end point of processing.

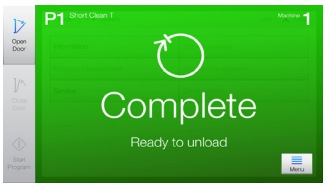
Standards and codes

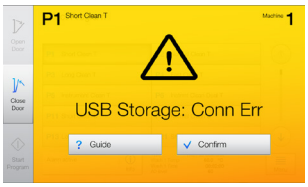
The Getinge 86-series complies with:

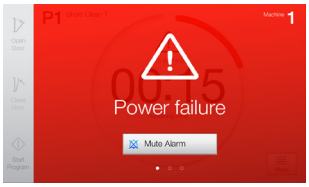
- MDD 93/42/EEC Medical Devices Directive
- MD 2006/42/EC Machinery Directive
- EMC 2014/30/EC Electromagnetic Compatibility Directive
- IEC/UL/CSA 61010-1 Safety requirements for electric equipment
- IEC/UL/CSA 61010-2-040 Safety requirements for Washer Disinfector and Sterilizers
- ELT Certified: tested by an OSHA accredited test lab for safe use
- ISO 15883 Part 1,2 & 6 Machine and Process design
- ANSI/AAMI ST15883 Part 1 & 2 Machine and Process design
- ISO-TS 15883-5 Cleaning performance evaluation
- WEEE 201/19/EC Waste Electrical and Electronic Equipment Directive
- REACH 2006/121/EC Registration, Evaluation, Authorization and Restriction of Chemical substances.
- ROHS2 2011/67/EU Restrictions of Hazardous Substances
- EN1717 Water intake backflow prevention design
- ASME A112.1.2 Water intake backflow prevention design
- DVGW product certificate for water intake backflow prevention design
- CBC 2016, seismic anchorage design acc. to the California Building Code and an OSHPD OPM, preapproval certificate: "OPM-0317-13". Note! Requires additional accessories for anchorage.

Key features

- The S-8666 and S-8668 can be equipped with an optional booster tank for preheating of the final rinse water, which helps to shorten the overall process time.
- Pressure monitoring of the process water in the circulation loop (option) secures the correct water pressure for a proper cleaning performance.
- Drying is optimized with the use of variable speed fans (energy vs. flow) that maximizes the drying performance.
- The washer-disinfector uses wash carts with removable spray arms and shelves that are adaptable to different load heights. The wash carts have incorporated accessories for cleaning lumen/cannulated/laparoscopic instruments.
- The standard washer-disinfector is equipped with a full-view, power operated, vertical glass door. Double door, pass through models may be selected as an option.
- The washer-disinfector is controlled via a 7", color touchscreen. On pass-through models there is a touchscreen on both the clean and the soiled side.
- The washer's docking interface is optimized for use with the SMART 2.0 loading trolley that provides both ergonomic and efficient loading/unloading.







Design features

View in process (VIP)

The glass door on both the soiled and the clean side allows personnel to observe the inside of the chamber. The control panel placed next to the door, enables the operator to see the load when closing the door to start a program.

Compressed gasket seal

When locking the door an electric linear actuator pulls the door rail in, compressing the door against the gasket for sealing. When unlocking the door, the same linear actuator pushes the door rail out from the gasket, allowing the door to lower to the open position.

Pass-through models - double doors (option)

Doors on both sides of the chamber promote a convenient and aseptic load flow from the soiled work area to the clean inspection and pack area. Door interlocks assure a barrier wall integrity by allowing only one door to be open, at a time.

Debris filters

The debris screen (filter) is located at the bottom of the chamber. A separate debris cup, located in the screen arrangement, collects the gross debris. The cup is easily removed for manual cleaning.

Booster tank (optional)

Preheating of the final rinse/disinfection water in the booster tank provides a significantly reduced process time. Prior to the final rinse/disinfection phase, the preheated booster tank water is pumped to the chamber.

The booster tank is made of AISI 316 stainless steel.

Process heating elements

Process water from the circulation pump is forced around powerful water heaters (electrical or steam) to rapidly elevate and maintain the process water temperature at a specified set point. The heaters are integrated in the chamber sump.

Brushless fan motor

Fresh air is drawn into the dryer unit by two powerful speed controlled fans. The brushless motor produces no carbon dust that could contaminate air filters and heating elements, thus prolongs the fan life and lowers the maintenance costs.

Drying heat exchanger and HEPA filter

Hot air from the chamber passes through an air-to-air heat exchanger that helps to preheat the incoming fresh air that is then used for drying the load. Preheating the air reduces the energy required to achieve the correct drying temperature. The air from the heat exchanger passes through the electric heaters, followed by an H14 HEPA filter, before entering the chamber through the circulation system. The rotating spray arms, inside the chamber, distribute the hot air on the load.

Drain cooling (option)

Before the hot process water from the chamber enters the water trap, cold water is automatically injected to reduce the temperature to 60 °C (140 °F) or less, before the process water enters the building drain system. If the condensate cooling KIT is used in the steam heated unit, the steam condensate will also be sent to the water trap for cooling down with cold water.

Drying sensor (option)

A humidity sensor, installed in the dryer piping, senses the humidity of the drying air and stops the drying procedure if the load is dry before the pre-set drying time is completed. This gives shorter drying times in partial load conditions.

Deionized water (DiW) valve (option)

Note! Treated water is purified water, for example Deionized water or RO water.

When treated water is used for the final rinse phase (disinfection) an additional water valve (option) is mounted on the unit and connected to the DiW supply system.

Process report (option)

Note! One type of method to save process report is necessary to fulfill the EN/ISO 15883 requirements

The cycle printouts (batch reports) from the machine can be stored and printed in several ways; on a USB stick, on a network printer or on the built-in printer.

Printer (2”) built into control panel (option)

Program performance data is printed during the program and at cycle completion. The printed program report includes the program number, the program start date and time, the phase transition points, the disinfection quality and the program alarms triggered during the program. In case of a printer failure during the program, the control system stores the program data and could, on demand, reprint the last program report.

Air barrier (option)

Note! See technical data for more information.

For pass-through models, the silicone seals (option), behind the front panels and against the glass door, provide an air separation between the soiled and the clean side. This helps the building ventilation to maintain differential pressures and reduces the risk of cross contamination between departments.

Adaption for automation (option)

The washer-disinfector can be configured for use with FSLC 2.0, FSUC 2.0 and the AGS (optional equipment used for automatic loading and unloading of wash carts). The free standing automatic loading units (FSLC, FSUC) are available for one or two wash carts. The AGS can be configured for three to ten washer-disinfectors.

The washer-disinfector must be factory-fitted with a specific option in order to work with the different types of automation.

Spray arm monitoring system (option)

A rotation detection system monitors the rotation of the spray arms and issues a warning if the rotation speed deviates from the preset values. The system uses an RFID indication system that enables monitoring on each spray arm in the machine and on the wash cart.

Note! The system is only available for S-8668/S-8668T.

Supervisor (option)

The supervisor is an independent and additional control system for monitoring critical process parameters, such as the pump pressure and the temperature. Detergent flow monitoring and/or conductivity monitoring can be selected independently of each other by separate selections in the order sheet. When selected they are included in the supervisor. This option is available to meet certain local guidelines and market requests.

Automatic cycle selection (option)

A built-in bar-code scanner detects and reads the unique barcode on each wash cart and the washer-disinfector automatically selects the right program. Automatic program selection via the scanner is required for machines installed with AGS or automatic free standing loading and unloading equipment such as FSLC 2.0 and FSUC 2.0. The option can be selected for manual loading.

Valve for water analysis (option)

At the bottom of the chamber (the sump) a ball-valve grants easy access to water for analysis of the process water from the different phases.

UK KIT (option)

The kit includes a UK power outlet socket at the soiled side and machine stop buttons at both soiled and clean side. The outlet is protected by a 10 A fuse and a 30 mH residual current device (RCD).

Alarm buzzer (option)

As standard, an alarm buzzer with a fixed sound level is embedded in the control panel. The Alarm buzzer option is an additional buzzer with an adjustable audible alarm (0-85 dB).

Conductivity monitoring of final rinse (option)

With this option the final rinse is monitored. If needed, multiple rinse cycles are run and if the conductivity of the final rinse water exceeds the preset level, an alarm is triggered.

Detergent flow monitoring (option)

Note! Detergent flow monitoring is necessary to fulfill the EN/ISO 15883 requirements.

Note! Chemicals with a viscosity higher than 10 cST can cause malfunction in the flow meters.

The flow monitoring of the detergent ensures an accurate chemical dosing for each cycle.

Control system features

The G1 control system features:

- Integral process monitoring (key program parameters and integral machine functions)
- Alerts for malfunctions
- Network or USB storage of reports (option)
- Network printing of process reports (option)
- DRAM 256Mbyte RAM CPU processor (no battery replacement required)
- Digital and analogue inputs and outputs for machine control
- RS-232 COM port for serial communication (panel printer)
- Customized program availability
- Copy/renaming functions (programs)
- Supervisor control system for parallel monitoring of critical process parameters (option)
- Ethernet port for Getinge connectivity products:
- Communication with Getinge Online (real-time and historical information of machine performance and wash process)
- Communication with T-DOC independent Traceability and management system

Control panel with a Centric 7" touchscreen

The machine is controlled and operated via a 7" color touchscreen, located on the soiled side to the right of the chamber door. A screen saver extends the life of the backlit touchscreen.

Tapping any command button illuminates and reactivates the touchscreen. By default, the touchscreen displays program information during a program. A more detailed view of program parameters can be set by the operator.

Double door pass-through units are provided with two control panels (one on the soiled side and one on the clean side). Each panel controls the door next to which it is located.

All necessary functions for operating the washer-disinfector are available on the soiled side touchscreen. Guidelines for the user are available on both touchscreens.

Standard safety features

Laminated safety glass doors

On both the soiled and the clean side of the chamber the laminated layers of safety tempered glass provide a full-size viewing door with excellent sound and heat abatement, as well as an extra safety precaution for the operator. The electrically powered door opens automatically and stores completely behind the front panel when open.

Illuminated chamber

During operation the wash chamber is lit up by a LED light.

Door obstruction closing

If the moving door is obstructed while closing, the door reverses and goes back to the open position. The door cannot be closed until the obstruction is removed.

Door interlock

During normal operations, the control system permits only one door to be unsealed and open at a time. The alternating door operation helps to maintain the barrier wall integrity.

Low level alarm chemicals

When the level of chemicals in the containers is too low, the low level sensor in the suction tube assembly alerts operators by sending a low chemical alarm to the touchscreen. The chemical containers must then be replaced or re-filled before subsequent cycles can be run. When the low level sensor is activated, the washer-disinfector can be programmed to run additional cycles.

Low chemical start prohibit

Once the low chemical warning is initiated and additional cycles have been run, the controller prevents subsequent cycles from being run without replacing or refilling the chemical container.

Program and cycle description

Programs to provide effective cleaning for different types of loads are factory installed in the washer-disinfector at delivery. The inclusion and repetition of phases is specific to each of the various programs.

Pre-rinse

The chamber is filled with cold water. The circulation pump is started and the water circulates. At a high flow/low pressure rate, the water is forced into the spray arms and onto the load, to thoroughly contact all of the load without damaging delicate instruments or displacing items.

Wash

The chamber is filled with the required volume of selected water from the building supply water system. The heating begins as the water circulates, and at the selected temperature a peristaltic dosing pump automatically adds a programmed amount of chemical cleaning agent. Once the set point temperature has been achieved, the controller maintains the correct temperature for the preset amount of time.

Post rinse

The chamber is filled with the selected water. The water is forced into the spray arms and onto the load.

Final rinse/disinfection

Water from the preheated booster tank (option) or directly from the building water system [1], fills the chamber which is heated by the circulating water. If a lubricant or rinse aid is selected, it is dosed when the desired temperature is reached. The chamber continues to heat to the preset disinfection temperature and maintains the temperature until the disinfection value is reached.

[1] The DiW valve is optional.

The disinfection parameters (temperature and time) can be set or automatically calculated to achieve the selected value (A_0 600 or A_0 3000), all in accordance with EN/ISO 15883. In programs intended for surgical instruments, the temperature is set to 90 °C (194 °F).

Drain

At completion of the wash and rinse phases, the chamber sump water is drained. The drain pump moves the water to the water trap where, if the drain cooling option is selected, cold water is added to the water trap to cool the waste water before discharging it to the building drain system.

Drying

Brushless, variable speed fan motors draw air from the clean side of the department through an air to air heat exchanger. It is first forced through the PTC electric heaters and then through the H14 HEPA filter, before entering the chamber. Once the set drying time has elapsed, the cycle is complete and the door can be opened. On double door washer-disinfectors the clean side door will open automatically, if selected, at the end of the cycle. The optional drying/humidity sensor can further reduce drying time with partial loads.

Accessories

Condensate cooling KIT

This kit is used for steam heated units, where the steam condensate return is not connected back to the building steam supply. It cools down the condensate with cooled water, before it enters the building drain system.

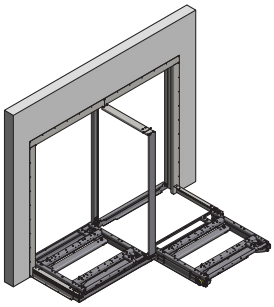
Seismic Anchorage KIT

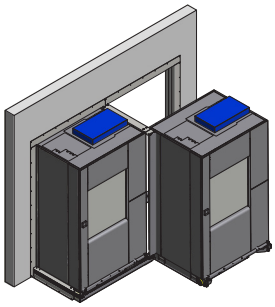
The kit consists of brackets for anchoring of the washer-disinfector to the floor, in accordance with the California building code for seismic requirements.

Trim panels and service pull out frames

Trim panels and service pull-out frames provide an easier access at repair or service. The trim panels can be used separately or in combination with the service pull-out frames (option). The trim panels are available in sections of 1-4 slots [1]. The images shows the machine from the soiled side.

[1] Trim panels for more machine slots are available on request.





Panels for AGS

Cover panels, for replacing existing AGS-88T units with S-8668 and S-8668T in an AGS system, are available for the 86-series washer-disinfectors. For individual part numbers see the table below and the section "Machine accessories" on page 32.

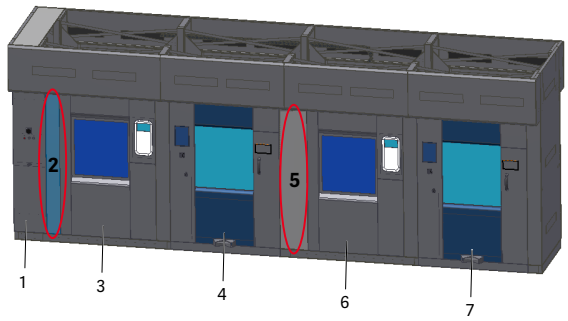
Summary of kits

Note! The machine slots are numbered, starting with #1 from the left side, seen from the soiled side (SS).

For a more detailed description, see the document 60021337INSTR AGS cover panels.

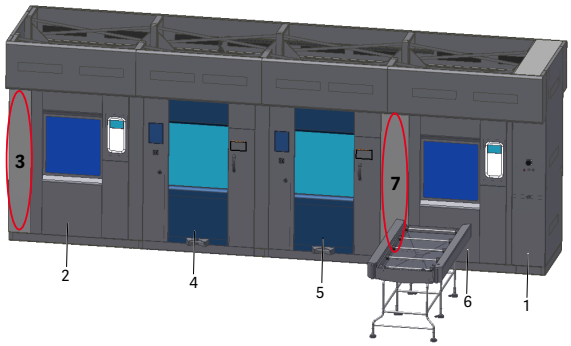
Position of replaced unit	AGS 1.0 Left	AGS 1.0 Right	AGS 2.0 Left	AGS 2.0 Right
Slot #1	6002133602	6002133602	6002133604	6002133603
Slot #2 through the last slot	6002133601	6002133601	6002133601	6002133601

Example AGS Service Left (L) - electrical cabinet on the left side.



1. Electrical cabinet (L)
2. **Cover panel for S-8668/S-8668T at first slot**
3. Slot 1 - S-8668/S-8668T
4. Slot 2 - 88 Turbo
5. **Cover panel for S-8668/S-8668T for slot 2 and forward**
6. Slot 3 - S-8668/S-8668T
7. Slot 4 - 88 Turbo

Example AGS Service Right (R) - electrical cabinet on the right side.



1. Electrical cabinet (R)
2. Slot 1 - S-8668/S-8668T
3. **Cover panel for S-8668/S-8668T at first slot**
4. Slot 2 - 88 Turbo
5. Slot 3 - 88 Turbo
6. Slot 4 - S-8668/S-8668T
7. **Cover panel for S-8668/S-8668T for slot 2 and forward**

Materials

The wash chamber is made of AISI 316L stainless steel. The exterior panels are made of AISI 304 polished stainless steel.

The door is constructed of four sheets of temper-hardened glass, laminated with an air gap in the center and wrapped in an AISI 304 stainless steel edge. The booster tank and filter screens are made of AISI 316 stainless steel.

Standard features (no selection needed)

Note! To fulfill EN/ISO 15883, flow monitoring and one of the process (batch) reports need to be selected and included in the unit, see"Optional features (selection needed)" on page 12.

- Control panel with a 7" color touchscreen
- Single door with automatic vertical door operation
- Tempered glass door with safe Vision In Process
- Painted steel framework
- Dryer with heat exchanger
- Differential pressure monitoring and test port for H14 HEPA filter
- Electrical heating of water in the sump
- Fine debris filter in chamber, 2 mm (0.039") mesh size
- Easy to clean filter cup in chamber with 2 mm (0.039") mesh size
- Air-gap according to EN1717 and ASME 112.1.2
- 2 x detergent dosing pumps
- 2 x suction lance for 5 L (1 gal.) detergent containers
- CW and HW inlet top mounted connections
- Automatic water level control, with optimal filling of water each time
- Efficient heating insulation for chamber, pipes and heating system

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Optional features (selection needed)

Note! To fulfill EN/ISO 15883, flow monitoring and one of the process (batch) reports need to be selected and included in the unit, see the following pages and the order sheets.

- Heated booster tank for the final rinse water (disinfection)
- Pressure monitoring of the process water
- Additional detergent dosing pumps 3+4
- Pass-through model (double doors)
- Framework in AISI 304 stainless steel
- Steam heating of the water
- Combined electrical and steam heating of the water in the sump
- Floor utility connections
- DiW valve
- Supervisor
- Detergent flow monitoring of the dosing pumps (required for EN/ISO 15883)
- Drain cooling
- Conductivity monitoring of final rinse
- Drying sensor
- HMI and process report with different language
- Air barrier
- Built-in scanner
- Process report (required for EN/ISO 15883)
- Adaptation for automation
- Spray arm monitoring system
- Valve for water analysis
- Alarm buzzer
- 5L empty detergent containers
- UK KIT

References

Documentation

The following documentation is available for the machine and can be downloaded from Getinge Extranet.

Documentation	Contents	Paper	Electronic media	Available languages
User manual	Instructions for daily use.	✓	✓	Local EU-language.
Installation manual	Instructions for assembly, installation and commissioning.	✓	✓	English, German, French or Swedish.
Quick Guide	Simple instructions for frequently performed tasks. Should be accessible and visible in the working area.	✓	✓	Local EU-language.
Declaration of Conformity	Declaration of Compliance with EU Directives.	✓	-	English.
Electrical diagrams	Collection of circuit diagrams.	-	✓	English.
Service manual	Instructions for service and preventive maintenance.	-	-	English, German, French or Swedish.
Spare Parts	List of available spare parts.	-	-	English.
Program sheets	Descriptions of Program groups (including programs and phases).	-	✓	
Installation drawings	Drawings for preparations and installation of the machine.	✓	✓	
	- = Not included in the machine delivery	✓ = Included in the machine delivery		

Languages available for the Control panel

Bulgarian (bg)	Japanese (ja)
Chinese (zh)	Latvian (lv)
Croatian (hr)	Lithuanian (lt)
Czech (cs)	Norwegian (no)
Danish (da)	Polish (pl)
Dutch (nl)	Portuguese (pt)
English (en)	Portuguese-Brazil (pt-BR)
Estonian (et)	Romanian (ro)
Finnish (fi)	Russian (ru)
French (fr)	Serbian (sr)
German (de)	Slovak (sk)
Greek (el)	Slovenian (sl)
Hungarian (hu)	Spanish (es)
Icelandic (is)	Swedish (sv)
Italian (it)	Turkish (tr)

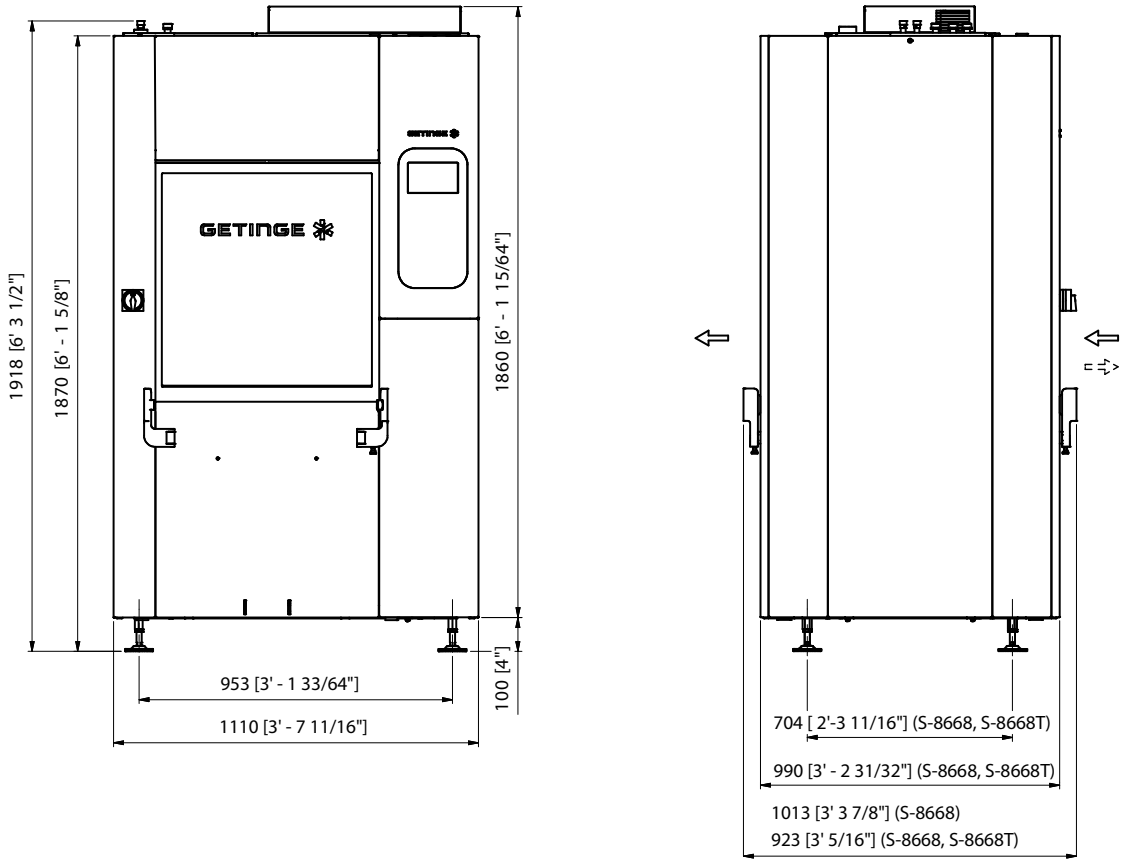
Getinge 86-series
S-8666/S-8668
Washer-disinfector

Technical Data and Drawings

Dimensions

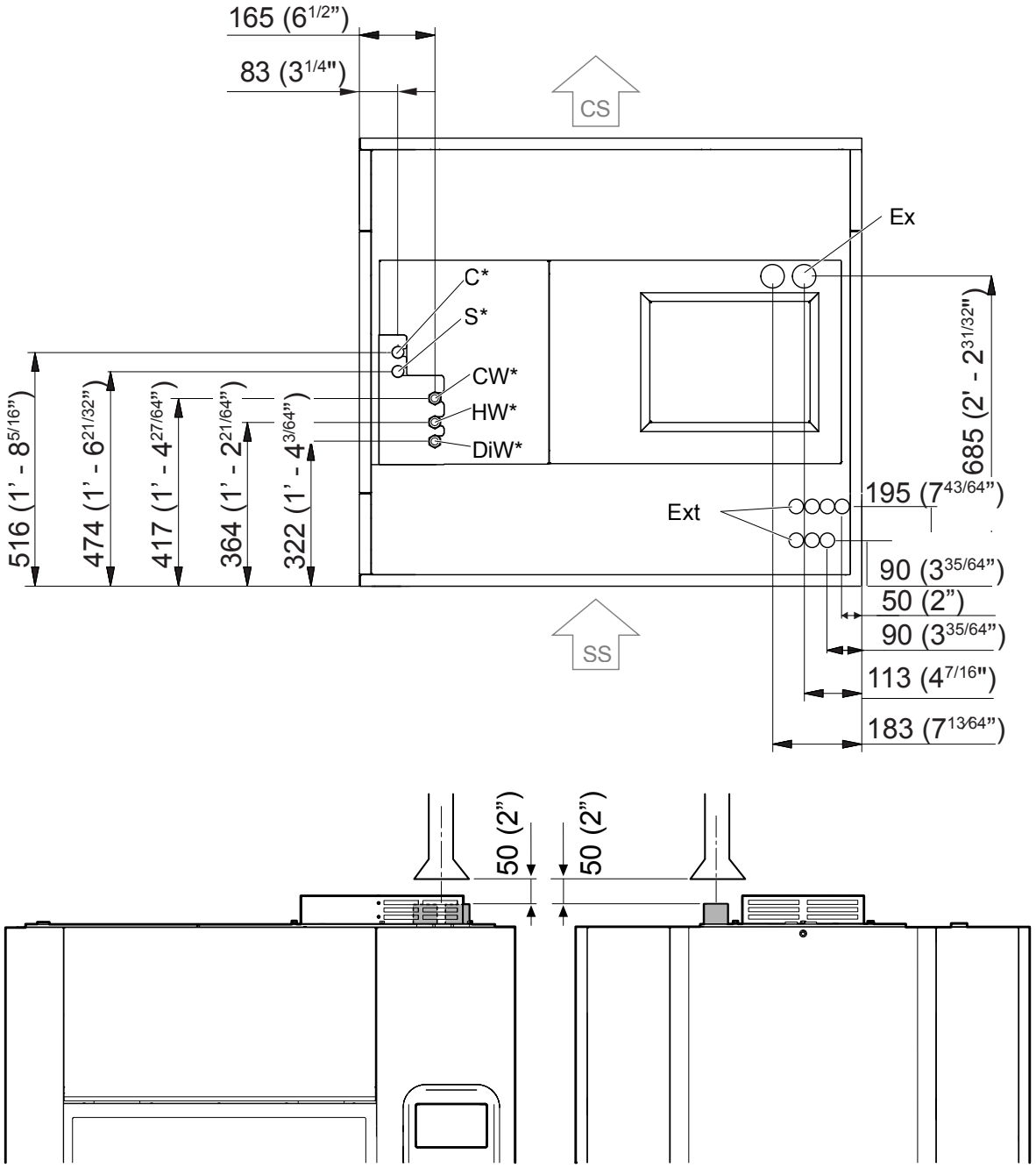
Front/Side view

All measuments are specified in mm and inches (inside square brackets).



Top connections

All measuments are specified in mm and inches (inside square brackets).

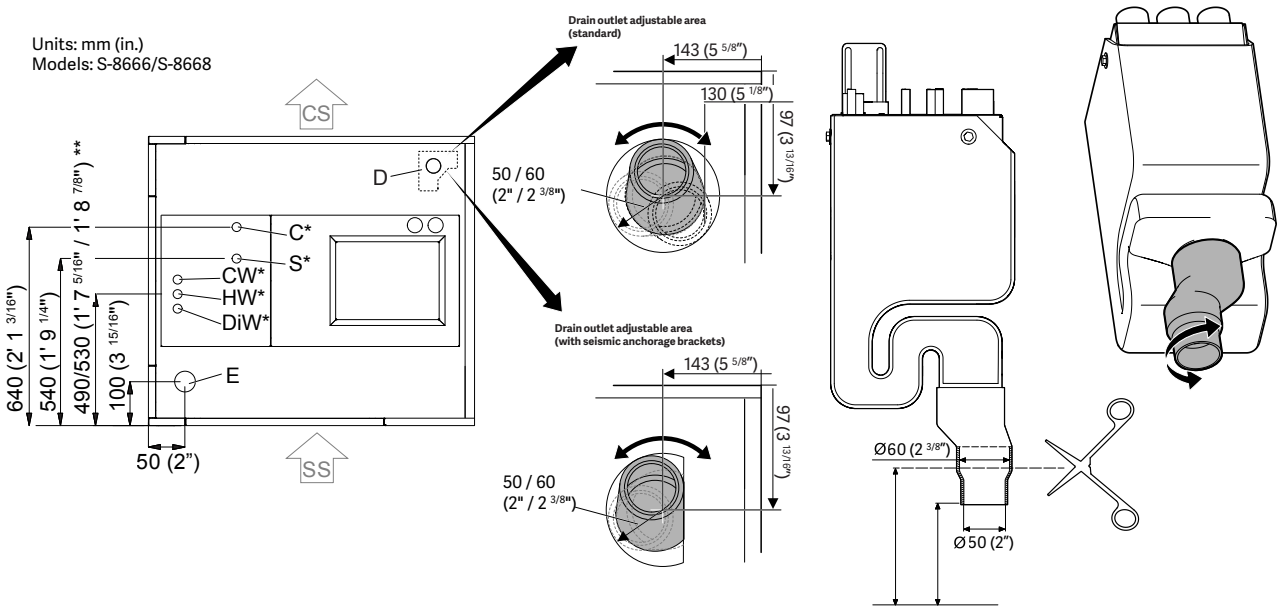


Explanations and comments to drawing "Top connections"

*	May be either top or floor connection
C	Condensate outlet.
S	Steam inlet.
CW	Cold water inlet.
HW	Hot water inlet.
DiW	Treated water inlet.
Ex	Drying air outlet.
Ext	Holes for external connections.

Floor connections

All measurements are specified in mm and inches (inside square brackets).

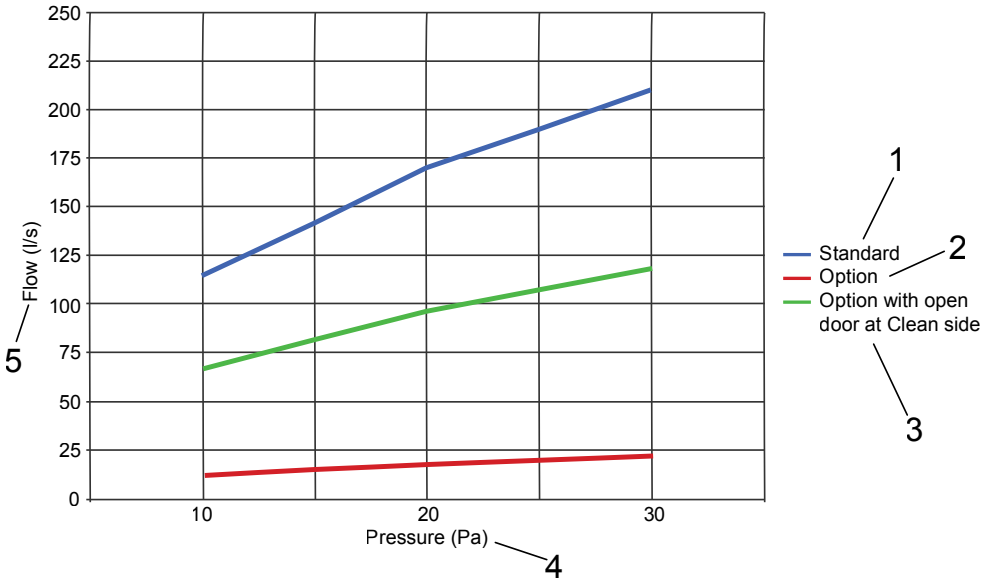


Explanations and comments to drawing "Floor connections"

*	May be either top or floor connection
**	Lower values apply to steam + electrical heating. Higher values apply to steam heating.
CW	Cold water inlet, 210 mm (8") from the floor
HW	Hot water inlet, 210 mm (8") from the floor.
DiW	Treated water inlet, 210 mm (8") from the floor.
E	Electricity incoming, 480 mm (1' 6 7/8"") from the floor. Terminal box UH01.
C	Condensate outlet, 150 mm (5 7/8") from the floor.
S	Steam inlet, 150 mm (5 7/8") from the floor.
D	Drain outlet, 130-170 mm (6" / 6 11/16") from the floor. The measurement is valid for an outlet diameter of 50 mm (2"). The outlet is adjustable within the area according to the image. If a floor drain is installed, attention should be paid to the machine feet.

Air barrier separation

The diagram applies only to the air flow in a pass-through machine, when the clean side is exposed to a positive pressure and sealed off from the surrounding areas. A tolerance of + 10 % applies. The barrier conversion in relation to the area, or the total front area is 2.08 m^2 (22.4 ft^2).



1. Machine without Air barrier
2. Machine with Air barrier (option)
3. Machine with Air barrier and the door on the CS side open (Green line above).
4. Pressure
5. Flow

Dimensions and volumes

Outer dimensions

	S-8666	S-8668
Width	1110 mm (3′ 7 11/16″)	1110 mm (3′ 7 11/16″)
Depth	910 mm (2′ 11 13/16″)	990 mm (3′ 3 ″)
Height	1960 mm (6′ 5 3/16″)	1960 mm (6′ 5 3/16″)

Chamber dimensions

	S-8666	S-8668
Width	650mm (2′ 1 9/16″)	650mm (2′ 1 9/16″)
Depth	730 mm (2′ 4 3/4″)	810 mm (2′ 7 7/8″)
Height	667 mm (2′ 2 1/4″)	667 mm (2′ 2 1/4″)

Effective and gross chamber volume

	S-8666	S-8668
Effective chamber volume	316 L (83,5 gal.)	351 L (92.7 gal.)
Gross chamber volume	430 L (114 gal.)	480 L (126.8 gal.)

Weight and floor loading

	S-8666	S-8668	
Total (incl water and load)	667 kg (1470 lb.)	687 kg (1515 lb.)	The figure is based on the maximum weight of the wash cart (including the maximum load) and the water in the chamber and tanks.
Load per machine foot	1.65 kN (371 lbf.)	1.7 kN (382 lbf.)	
Specific surface loading	6.48 kN/m^2 (135.3 lbf/ft^2)	6.13 kN/m^2 (128 lbf/ft^2)	
Floor load per machine foot	291 kN/m^2 (6077 lbf/ft^2)	300 kN/m^2 (6266 lbf/ft^2)	

Package sizes and weights

	S-8666	S-8668
Depth	1240 mm (4′ 13/16″)	1240 mm (4′ 13/16″)
Length	1120 mm (3′ 8 1/8″)	1120 mm (3′ 8 1/8″)
Height	2180 mm (7′ 1 13/16″)	2180 mm (7′ 1 13/16″)
Weight	493kg (1087 lb.)	513 kg (1131 lb.)

When installing the 86-series washer-disinfectors at high altitudes, > 500 m (1640 ft) above sea level, modifications must be made due to the low air pressure. Without the necessary modifications the glass windows might be deformed. Instructions are provided in the Installation manual.

Utility requirements

Note! The maximum heat emission from the machine to the surrounding area is listed in the Installation manual in the section Heat Dissipation.

Utility	Unit connections	Supply pressure requirements	Flow requirement	Temperature Maximum
Cold water (CW)	**Top connect:** ISO G- 3/4 " Male **Floor connect:** ISO G- 1/2 " Female	200-600 kPa (29-87 Psi)	30 L/min (8 gal./min)	20 °C (68 °F)
Hot water (HW)	**Top connect:** ISO G- 3/4 " Male **Floor connect:** ISO G- 1/2 " Female	200-600 kPa (29-87 Psi)	30 L/min (8 gal./min)	45-60 °C (113-140 °F)
Treated water (option)	**Top connect:** ISO G- 3/4 " Male **Floor connect:** ISO G- 1/2 " Female	200-600 kPa (29-87 Psi)	30 L/min (8 gal./min)	60 °C (140 °F)
Drain	Adaptable ø 50 mm (2") ø 60 mm (2.4")		40 L/min (10.5 gal./min) [8] With drain cooling: 70 L/min (18.5 gal./min)	90 °C (194 °F) 60 °C (140°F)
Steam	**Top connect:** ISO G- 1/2 " Male [1] **Floor connect:** ISO G- 1/2 " Male [1]	300-500 kPa (44-73 Psi) [2]	0.9-1.0 kg/min (2-4.4 lb./min)	160 °C (320°F)
Condensate	**Top connect:** ISO G- 1/2 " Male [1] **Floor connect:** ISO G- 1/2 " Male [1]	30 kPa (4.3 Psi) [3]		
Machine exhaust	2 x 50 mm (2")		250 m^3/h (147 CFM) during the drying phase	90 °C (194 °F) [6] Maximum peak
Building exhaust [4, 5]	The machine must be supplied with sufficient ventilation to keep the temperature at <40 °C (104 °F) in the space above the machine			

[1] The pressure difference between the supply and the return lines must be more than 100 kPa (15 Psi).
[2] The steam pressure affects the time. A lower pressure extends the program time.
[3] Maximum return pressure.
[4] To pull away the hot, moisture exhaust air during the drying phase, the building needs to have an external exhaust fan installed, normally rated higher than the exhaust (m^3/CFM) of the washer itself .
[5] To provide the required (increased) ventilation during the drying phase, the machine has a potential free output for controlling the building ventilation system.
[6] The temperature falls to about 60 °C (194 °F) after a few seconds, and stays at this level for about 20 minutes.
[7] Electrical - see pages 22 & 23 for electrical requirements.
[8] Building drain connections: recommended 100 mm (4"), minimum 50 mm (2")

Operating and environmental conditions

Operating conditions

Room temperature	5-40 °C (41-104 °F)	
Air humidity	Max 80 % at 30 °C (87 °F)	
Max surface temperature	50 °C (123 °F)	
Water consumption (Pre rinse and Wash)	37 L/phase (9.8 gal./phase)	The water consumption varies depending on the type of wash cart used and the load.
Water consumption (Post rinse and Final rinse)	37 L/phase (9.8 gal./phase)	The water consumption varies depending on the type of wash cart used and the load.
Heat dissipation from the machine	1500 W	Applies when in an ambient temperature of 21-25 °C (69.8-77 °F)
Sound levels	57 dB, during washing 62 dB, during drying 58 dB, average during the program	According to the Machine Directive 2006/42/EC, at 1 m away from the unit and 1.6 m above the floor.

Storage and transport conditions

Note! The machine must be kept in its package during storage and transport.

Surrounding temperature	-20 to 70 °C (-4 to 158 °F)
Surrounding air humidity	Maximum 90 % at 30 °C (86 °F)

Electricity and steam consumption

The consumption varies depending on:

- the incoming water temperature and steam pressure
- the program selection
- the machine temperature
- the external conditions, such as the surrounding temperature, air humidity, air pressure etc.

The figures below show the approximate energy consumption per process during normal operation, based on the time range from the shortest to the longest instrument program.

Electrical heating	4.5-7.5 kWh
Steam heating	0.99-2.3 kWh/7.5-9 kg (16.5-19.8 lb.) steam

Technical data components

Water circulation system

Design pressure	200 kPa (29 psi)	
Operating pressure	Max 130 kPa (18.8 psi)	
Design temperature	100 °C (212 °F)	
Operating temperature	93 °C (199 °F)	

Circulation pump

Max flow	750 L/min (198 gal./min)	
Motor	2 kW (2.7 HP)	
Material of construction	EN 1.4404, PP/Glass fibre	

Drain pump

Max flow	55 L/min (14.5 gal./min)	
Motor	170 W	
Material of construction	EN 1.4404, PP	

Dosage pump

Max flow	16L/h (541 oz./min)	

Heater steam

Heating velocity	9-11 °C/min	The velocity depends on the steam pressure.

Heater electrical

Heating velocity	4.5-10 °C/min	The velocity depends on the voltage.
Installed power	2x 9 kW	

Heater combined

Heating velocity	6-10 °C/min	The velocity depends on the steam pressure and the voltage.
Installed power with booster	2x 9 kW	
Heating velocity Booster electrical	4 °C/min	The velocity depends on the voltage.

Booster heater, steam (option)

Heating velocity	5-6 °C/min	The velocity depends on the steam pressure.

Booster heater, electrical (option)

Heating velocity	4 °C/min	The velocity depends on the voltage.
Installed power	1x 9kW	

Dryer

Installed power, heaters	4x 1500 W	
Installed power motors	2x 1100W	

Electrical data

Note! The booster is optional.

Electrical heating

(with or without booster)

Voltage (V)	Connection	Frequenzy (Hz)	Maximum operating current (A)	Fuse (A)
480	3+PE	60	45.0	C50
415	3N+PE	50	32.5	C40
400	3N+PE	60	32.2	C40
400	3N+PE	50	32.2	C40
380	3N+PE	60	30.6	C40
380	3N+PE	50	30.6	C40
240	3+PE	60	56.3	C60
230	3+PE	60	54.3	C60
230	3+PE	50	54.3	C63
220	3+PE	60	52.3	C60
208	3+PE	60	53.0	C60
200	3+PE	60	51.5	C60
200	3+PE	50	51.5	C60

Steam heating

(with or without booster)

Voltage (V)	Connection	Frequenzy (Hz)	Maximum operating current (A)	Fuse (A)
480	3+PE	60	8.0	C10
415	3N+PE	50	14.0	C20
400	3N+PE	60	14.0	C20
400	3N+PE	50	14.0	C20
380	3N+PE	60	13.8	C20
380	3N+PE	50	13.8	C20
240	3+PE	60	23.0	C25
230	3+PE	60	23.5	C25
230	3+PE	50	23.5	C25
220	3+PE	60	25.0	C30
208	3+PE	60	24.8	C30
200	3+PE	60	26.0	C32
200	3+PE	50	26.0	C32

Combined electrical and steam heating

(with booster)

Voltage (V)	Connection	Frequenzy (Hz)	Maximum operating current (A)	Fuse (A)
480	3+PE	60	45.0	C50
415	3N+PE	50	32.5	C40
400	3N+PE	60	32.2	C40
400	3N+PE	50	32.2	C40
380	3N+PE	60	30.6	C60
380	3N+PE	50	30.6	C40
240	3+PE	60	56.3	C40
230	3+PE	60	54.3	C60
230	3+PE	50	54.3	C63
220	3+PE	60	52.3	C60
208	3+PE	60	53.0	C60
200	3+PE	60	51.5	C60
200	3+PE	50	51.5	C60

Combined electrical and steam heating

(without booster)

Voltage (V)	Connection	Frequenzy (Hz)	Maximum operating current (A)	Fuse (A)
480	3+PE	60	25.0	C30
415	3N+PE	50	14.5	C20
400	3N+PE	60	15.5	C20
400	3N+PE	50	15.5	C20
380	3N+PE	60	16.5	C20
380	3N+PE	50	16.5	C20
240	3+PE	60	33.5	C40
230	3+PE	60	31.5	C40
230	3+PE	50	31.5	C40
220	3+PE	60	30.5	C40
208	3+PE	60	29.5	C35
200	3+PE	60	28.5	C32
200	3+PE	50	28.5	C32

Getinge 86-series S-8666/S-8668 Washer-disinfector

Order Information

About this form

This part of the document is an order form. Mark your selections.

☐ Standard selection (included in base price)

◯ Optional selection (not included in base price, additional cost)

Customer reference

State project name, project No, customer name etc.

Documentation

State country for correct language in the enclosed manuals.

Language/control panel

Select the language for the touchscreen, from section “Languages available for the Control panel” on page 13.

Models

☐ S-8666

☐ S-8668

Program group selection

- ☐ HOSPITAL, 1 min A0 600 (90 °C/60 s), general
- ☐ HOSPITAL, 5 min A0 3000 (90 °C/300 s), general
- ☐ UNITED KINGDOM (adapted for the UK market)
- ☐ US/CANADA (adapted for the US/Canadian market)
- ☐ CHINA (adapted for the Chinese market)
- ☐ GERMANY (adapted for the German market)
- ☐ JAPAN (adapted for the Japanese market)
- ☐ GLASSWARE

Detergent dosing pumps

As standard, the machine is equipped with two dosing pumps for the process chemicals. A third and a fourth pump can be added as an option. To get the correct machine programs, when the dosing pumps 3 or 4 are added, a process chemical should be selected in the following table. If no chemical is chosen, the machine will be installed with programs for two dosing pumps.

All dosing pumps can be equipped with flow control (option).

When a country specific program group is selected, the machine is automatically configured with the correct set of dosing pumps. For more details, see the previous table, Program group selection.

- ☐ Dosing pump 1: Alkaline detergent. Dosing pump 2: Rinse Aid (can be used for lubrication)
- ☐ Dosing pump 1: Alkaline detergent. Dosing pump 2: Instrument Lubricant
- ◯ Dosing pump 3: No choice of detergent
- ◯ Dosing pump 3: Neutralizer
- ◯ Dosing pump 4: Enzymatic detergent
- ◯ Dosing pump 4: Chemical disinfectant
- ◯ Dosing pump 4: No choice of detergent

Pre-configured Dose pump		UNITED KINGDOM	US/CANADA	CHINA	GERMANY	JAPAN	GLASSWARE
1	**Alkaline detergent**	✓	-	✓	✓	✓	✓
1	**Enzymatic detergent**	-	✓	-	-	-	-
2	**Alkaline detergent**	-	✓	-	-	-	-
2	**Rinse Aid**	-	-	-	✓	-	-
2	**Enzymatic detergent**	✓	-	-	-	✓	-
2	**Instrument lubricant**	-	-	✓	-	-	-
2	**Neutralizer**	-	-	-	-	-	✓
3	**Neutralizer**	-	-	-	-	-	-
3	**Instrument lubricant**	-	✓	-	(✓)	✓	-
3	**Chemical disinfectant**	-	-	-	(✓)	-	-
4	**Enzymatic detergent**	-	-	✓	-	-	-

- = Not used in programs ✓ = Used in programs (✓) = Used in hidden programs

Door selection

In pass-through machines the door interlock assures the integrity of a barrier wall by allowing only one door to be open at a time.

- ☐ Single door
- ◯ Double doors (pass-through model)

Framework

- ☐ Painted steel
- ◯ AISI 304 stainless steel

Heating

The dryer is always electrically heated. The heating of the sump has the following options:

- ☐ Electrical heating
- ◯ Steam heating
- ◯ Combined electrical and steam heating

Main voltage power supply

Note! Only one selection is possible.

50 Hz units

- ☐ 415 V, 3N+PE, 50 Hz
- ☐ 400 V, 3N+PE, 50 Hz
- ☐ 380 V, 3N+PE, 50 Hz
- ☐ 230 V, 3+PE, 50 Hz
- ☐ 200 V, 3+PE, 50 Hz

60 Hz units

- ☐ 480 V, 3+PE, 60 Hz
- ☐ 400 V, 3N+PE, 60 Hz
- ☐ 380 V, 3N+PE, 60 Hz
- ☐ 240 V, 3+PE, 60 Hz
- ☐ 230 V, 3+PE, 60 Hz
- ☐ 220 V, 3+PE, 60 Hz
- ☐ 208 V, 3+PE, 60 Hz
- ☐ 200 V, 3+PE, 60 Hz

Booster tank (option)

As standard the final rinse is heated up in the sump. A booster tank for preheating of the final rinse water reduces the program time. If the machine has a combined heating system the booster is electrically heated, otherwise it uses the same heating method as the machine (steam or electrical). If deionized water is not selected, hot water will be used.

- ☐ No booster tank
- ◯ Booster tank

Media connections

Note! The AGS configurations require top connections for utilities.

As standard, the 86-series is equipped with top connections for utilities.

☐ Top connections

◯ Floor connections

Deionized water valve (DiW)

☐ No DiW connection

◯ DiW valve

Supervisor

Note! Pressure sensors are included in the Supervisor selection.

Note! Flow control and conductivity need to be selected as individual options - if required.

The Supervisor control system independently monitors critical parameters, such as pressure, temperature etc.

☐ No additional supervisor

◯ Supervisor

Detergent flow monitoring

Note! This is required to comply with EN/ISO 15883.

☐ No flow monitoring

◯ Detergent flow monitoring for all selected detergent dosing pumps

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Drain cooling

☐ No drain cooling

◯ Monitored drain cooling with 60 °C (140 °F) maximum drain temperature

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Conductivity monitoring of final rinse

Note! Conductivity monitoring requires the DiW valve for proper functionality (separate option)

The conductivity monitoing checks the final rinse water to secure that the conductivity level is not exceeded.

☐ No conductivity monitoring

◯ Conductivity monitoring of final rinse water

Drying sensor

The automatic drying sensor measures the humidity of the drying air and stops the drying if the pre-set drying level is reached before the pre-set drying time is ended.

- ☐ No drying sensor
- ◯ Drying sensor

Multi language HMI

The multi language function enables selection of different languages on the touchscreen and in the process reports. If this is not selected the language is set at installation.

- ☐ No multi language
- ◯ Multi language

Air barrier

The air barrier improves air separation between the soiled and clean side in pass-through models. See the diagram in section “Air barrier separation” on page 18. The barrier consist of an additional sealing on the clean side of the washer-disinfector fascia panel.

- ☐ No air barrier
- ◯ Air barrier for pass-through models

Automatic cycle selection

A built-in bar code scanner automatically selects the program at loading. Automatic program selection can be chosen for manual loading, and is required for machines installed in an AGS or used with automatic loading and unloading conveyors.

- ☐ No scanner
- ◯ Built in scanner for bar codes

Process report

Note! This is required to comply with EN/ISO 15883.

Cycle printouts/batch report data can be printed out or stored on a USB memory stick. The information includes the program start date and time, the phase description, the disinfection time, the amount of detergent (if flowmeters are used), the temperature and the alarms triggered during a program.

- ☐ No built-in printer
- ◯ Built-in 2" printer soiled side (SS)
- ◯ Built-in 2" printer clean side (CS) (only applicable for pass-through models)

- ☐ No USB storage
- ◯ USB storage, including a memory stick placed inside the detergent cabinet

- ☐ No Network printing
- ◯ Network printing

- ☐ No network storage
- ◯ Network storage

Preparations for automatic loading equipment

The 86-series washer-disinfectors are designed for manual or automatic loading. When using automatic loading, the unit needs to be prepared with interfaces for loading/unloading systems. The scanner for automatic cycle selection is required. It is not possible to add a printer when automation is selected.

- ☐ No automation
- ◯ AGS 2.0 [1]
- ◯ AGS 1.0 [2]
- ◯ Free standing loading (FSLC) and unloading (FSUC) conveyor [1]

For add-on machine for existing AGS installation please state position number counting from loading conveyor (shuttle)

[1] Automation KIT 2.0 (P/N 6001483301) is ordered separately (one for each wash cart is needed)

[2] Automation KIT 1.0 (P/N 503445800) is ordered separately (one for each wash cart is needed)

Thermal disinfection type

The method of disinfection can be selected and set accordingly at delivery.

- ☐ Disinfection phase time and temperature controlled
- ☐ Disinfection phase time and temperature controlled, additional A0 value calculated and printed
- ☐ Disinfection phase A0 value controlled

Spray arm monitoring system

Note! The system is only available for S-8668 and needs adapted wash carts with RFID tags.

The system monitors the rotation of each spray arm in the machine and on the wash cart.

- [ ] No spray arm monitoring system
- ◯ Spray arm monitoring system

UK kit

The kit includes a UK power outlet socket at the soiled side and machine stop buttons at both soiled and clean side.

- [ ] No UK kit
- ◯ UK kit

Pressure monitoring

Circulating water pressure monitoring ensures that the machine is not running a process with a too high or too low pressure.

- [ ] No pressure monitoring
- ◯ Water pressure monitoring

Valve for water analysis port

The valve is a manual ball-valve for water analysis.

- [ ] No valve for water analysis
- ◯ Valve for water analysis

Alarm buzzer

An alarm buzzer with a fixed sound level is embedded in the control panel as standard, but the machine can also be equipped with an additional adjustable alarm buzzer (0-85 dB).

- [ ] No additional alarm buzzer
- ◯ Additional alarm buzzer

Container

- [ ] No detergent containers
- ◯ Set of 3 x 5 Liters empty detergent containers

Accessories

Machine accessories

Note! For more detailed information about available accessories and wash carts, see the separate loading equipment catalogue.

Article No	Description
6002133601	Cover plates for AGS 1.0/2.0, right and left side. Machine slot #2-10.
6002133602	Cover plates for AGS 1.0, right and left side. Machine slot #1.
6002133603	Cover plates for AGS 2.0, right side. Machine slot #1.
6002133604	Cover plates for AGS 2.0, left side. Machine slot #1.
6001712875	Service pull-out frame for S-8668 and S-8668T.
6001825801	Cover trim panels with one slot, for S-8668 and S-8668T. May be used with or without the service pull-out frame.
6001830701	Cover trim panels with two slots, for S-8668 and S-8668T. May be used with or without the service pull-out frame.
6002268001	Cover trim panels with three slots, for S-8668 and S-8668T May be used with or without the service pull-out frame.
6002268002	Cover trim panels with four slots, for S-8668 and S-8668T. May be used with or without the service pull-out frame.
6001891775	Seismic anchorage kit.
6002123402	Condensate cooling kit for S-8666 and S-8668. The kit requires the washers to be selected with the optional drain cooling.

GETINGE

Getinge is a global provider of innovative solutions for operating rooms, intensive care units, sterilization departments and for life science companies and institutions. Based on our firsthand experience and close partnerships with clinical experts, healthcare professionals and medtech specialists, we are improving the everyday life for people – today and tomorrow.

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