Sterilmed Medical

Washer Disinfector

User-Service Manual

CONTENTS

1. Entrance

Washing disinfection device is a machine designed to clean medical instruments used in hospitals, laboratories and similar health institutions and to destroy microorganisms. These devices automatically wash and disinfect instruments with predetermined programs and, in some models, also dry them. They minimize the risk of contamination by using high temperatures, chemical disinfectants and mechanical movements. They provide safe and effective cleaning, especially for surgical instruments and sensitive medical devices.

Washing Disinfection Devices are used for cleaning and disinfection of instruments in environments such as healthcare, hospitals, dental clinics, veterinary clinics, dialysis centers, elderly care homes and beauty and aesthetic centers.

a. Working principle

i. Pre-wash:

The tools are placed inside the device and pre-washed to remove coarse dirt and organic matter. Low temperature water is usually used at this stage.

ii. Main Wash:

During the washing period, dirt, protein and other organic substances on the surface of the tools are dissolved and removed by using a mixture of water and detergent at a certain temperature (usually between 60-90°C).

It is supported by mechanical movements (e.g. water spraying, rotating arms) and chemical agents.

iii. Rinse:

After the washing process, one or more rinses are performed to completely remove detergent residues and dirt particles.

iv. Thermal or Chemical Disinfection:

During the disinfection phase, the device uses high temperature (usually 90-95°C) or chemical disinfectants to kill microorganisms.

Thermal disinfection is usually carried out using hot water or steam, while chemical disinfection uses appropriate disinfectant substances.

v. Drying:

After the disinfection process, the instruments are dried. This process is accomplished with hot air or other drying methods.

The drying process makes the tools ready for reuse and prevents problems such as rust.

The flow diagram of the device is presented in ANNEX-D.

b. Things to consider when using the Washing Disinfection Device :

i. Placement of Tools:

- It is very important that the tools are placed correctly in the device. The tools should not touch each other and should not obstruct the movement of the water spray arms.
- Tools should be fixed using perforated baskets and special holders.

ii. Manufacturer Instructions:

- The manufacturer's instructions for the device and the tools to be washed must be followed. Washing and disinfection requirements for each instrument may be different.
- It should be ensured that the detergents and disinfectants used are approved and suitable by the manufacturer.

iii. Pre-Cleaning:

- Heavily soiled instruments should be pre-cleaned. Preliminary removal of blood, tissue and other biological materials on the instruments increases the effectiveness of the device.

iv. Program Selection:

- The correct washing and disinfection program must be selected. Different programs may be required for different instruments and contamination levels.

v. Maintenance and Cleaning of the Device:

- The device should be maintained and cleaned regularly. Make sure that filters, spray arms and other important parts are clean.
- It is important to check the performance of the device regularly and call technical service when necessary.

vi. Security precautions:

- Remember that the cover should not be opened while the device is operating. Working with high temperatures and chemicals can cause serious injury.
- Protect yourself by using protective equipment (gloves, goggles, apron).

vii. Use of Disinfectant and Detergent:

- It is very important that the chemicals to be used are used in the correct amount and manner. Excessive or inadequate use of chemicals may negatively affect the washing and disinfection process.
- The usage period and expiration date of chemicals should be taken into consideration.

viii. Recording Systems and Documentation:

- Recording and monitoring washing and disinfection processes is important for quality control and inspection.

- Make sure reports are recorded accurately at the end of each transaction.

2. Safety Warnings

a. Training and Authorization:

- Only trained and authorized people should use the device.
- Users should be familiar with the operating principles of the device, potential hazards and emergency procedures.

b. Use of Protective Equipment:

- Appropriate personal protective equipment (PPE) should be worn when using the device. This may include items such as gloves, goggles, face mask and gown.
- When working with chemicals, care should be taken to avoid skin and eye contact.

c. Precautions Regarding Chemical Substances:

- MSDS (Material Safety Data Sheets) documents of the chemicals used in washing and disinfection processes should be examined and information should be obtained about the safe use of these chemicals.
- Correct storage and use of chemicals must be ensured.

d. Temperature and Steam:

- While the device is operating, one should not try to open its cover and the inside of the device should not be touched. High temperatures and steam can cause serious burns.
- Sufficient time should be allowed for the device to cool down.

e. Electrical Safety:

- The electrical connections and cables of the device should be checked regularly. Damaged cables or plugs should not be used.
- Since the device may come into contact with water, care should be taken to avoid electric shock.

f. Maintenance and Cleaning of the Device:

- During maintenance of the device, make sure that the electrical connection is disconnected.
- Protective equipment should be used during maintenance and cleaning operations.

g. Emergency Procedures:

- If a problem occurs or an emergency occurs while using the device, the emergency stop button must be used and the relevant procedures must be followed.
- In the event of any injury or chemical spill, medical attention should be sought immediately and appropriate emergency procedures should be followed.

h. Instructions for Use of the Device:

- The user manual of the device should be read carefully and all instructions should be followed.
- Operations that do not comply with the features and functions of the device should be avoided.

3. Setup

a. Pre-Installation Preparation

i. Location Selection :

- The area where the device will be installed must be on a dry and flat surface with sufficient ventilation.
- Sufficient space must be left around the device for maintenance and use.

ii. Electrical connection :

- There must be a socket or power source suitable for the electrical characteristics required by the device.
- Make sure that the device is turned off when making an electrical connection.

iii. Water Intake and Drainage :

- The device must be connected to a suitable water source for water inlet.
- Water pressure and flow rate must meet the requirements of the device.
- The drainage connection must be made properly and a place must be provided where water can drain properly.

iv. Device Setup

b. Placement of the Device **:**

- The device must be carefully unpacked and placed in the selected location.
- Make sure that the device is flat and balanced. The feet of the device can be adjusted if necessary.

c. Making Connections **:**

- The water inlet hose and drain hose must be properly connected to the back of the device.
- The electrical connection must be made carefully and ensure that the device is securely plugged into the socket.

d. Control of Filter and Spray Arms **:**

- Make sure that the filters and spray arms inside the device are installed correctly and are clean.

e. Testing the Device

i. First Operation :

- The first operation of the device should be done when it is empty. This allows air bubbles to escape from the system and to check that the device is working correctly.
- During initial start-up, water leaks, electrical problems or other abnormalities should be checked.

ii. **Program Settings** :

- The program settings of the device should be checked and adjusted, if necessary, according to user needs.
- It must be programmed in accordance with the instructions in the device's user manual.

f. User Training

- Personnel who will use the device should be trained on the correct and safe use of the device.
- Users should be informed about the operating principles, program settings and maintenance procedures of the device.

g. Documentation and Service

- Once the installation is complete, installation documentation and warranty documents must be completed and retained.
- Maintenance and service records of the device should be kept regularly.

Other issues related to installation are included in the “Installation Document” in APPENDIX-A.

4. Operating

a. Menus:

i. Mother Menu

Figure 4-1

When the device is first turned on, the "Main Menu" appears on the screen and the system requirements are automatically checked.

The requirements and status of the device begin to be displayed on the screen. All requirements must be met to use all functions of the device.

ii. User Identification:

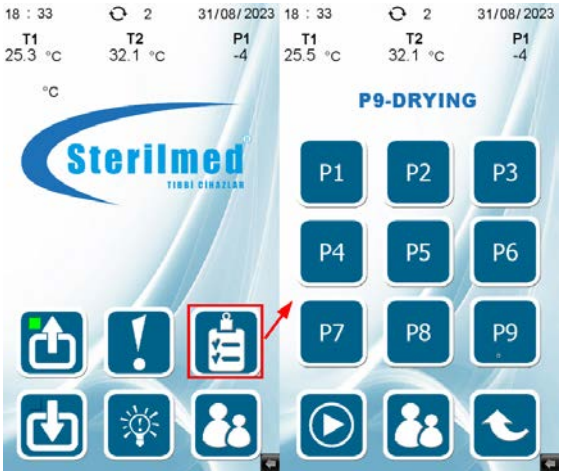


Figure 4 -2

If there is no warning on the device, you can enter the program menu by pressing the marked button. The following programs can be selected, respectively, from the menu that appears here.

- P1 INST STANDARD
- P2 INSTINTENSE
- P3 CONTAINER
- P4 BABY BOTTLES
- P5 GLASSWARE
- P6 SHOES
- P7 ANAESTHETICS
- P8 MIS INST
- P9 DRYING
- P10 SELF WASHING

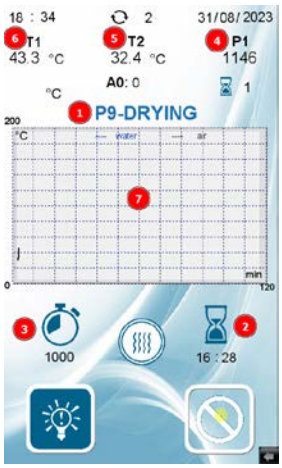


Figure 4 -3

With the program selection, the following information appears on the screen.

1. Program Name
2. Program remaining time
3 time
4. Cell pressure value
5. Cell/Water temperature
6. Drying Air Temperature
7. Program Graphics

Figure 4 -4

Warnings and times related to the device can be viewed and deleted with the button in the figure .

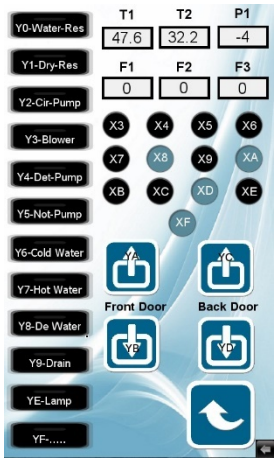
Figure 4 -5

in the figure and entering the password.

one. : Data can be saved to a USB memory stick.

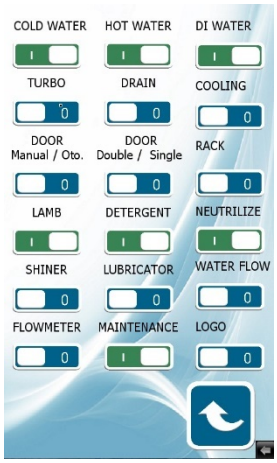
2 .: The following menu opens and program parameters can be changed and special programs can be defined through this menu.

3. : The menu below opens and device input/output parameters can be observed and activated/deactivated.

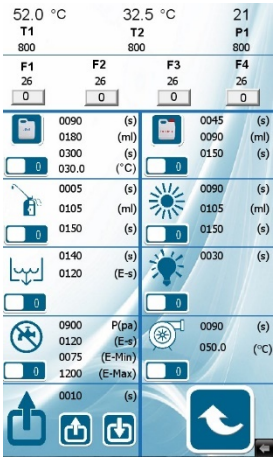


4. : The device returns to factory settings.

5 : The menu below opens and activates/deactivates the hardware based on the connected hardware.



6 .: The menu below opens and device calibration settings can be made here.



b. Material Loading Instruction

i. Security and Preparation

(1) Wear your personal protective equipment (gloves, mask, glasses, etc.).
(2) Check that the device is clean, in working order and connected correctly.
(3) Check the suitability of the cleaning and disinfection chemicals to be used.

ii. Preparation of Materials

(1) Check whether the materials are compatible with cleaner and disinfectant solutions.
(2) Separate materials by type and properties (for example, surgical instruments, glassware, plastic materials).
(3) Remove any dirt, blood or other residue on the materials by pre-cleaning them.

iii. Placing Sharp and Pointed Materials

(1) Place sharp instruments (scalpel, scissors, etc.) safely and keep their tips and sharp edges in protective cases.
(2) Leave enough distance between sharp tools to prevent them from touching each other.

iv. Placing the Materials in the Washing Baskets

(1) Place the washing baskets inside the device.
(2) Arrange large items horizontally or vertically without obstructing water and chemical circulation.
(3) Place small parts and ingredients in special holders or baskets. Use baskets with fine holes to prevent small items from being lost during washing.
(4) Place parts that may get stuck or get stuck separately.
(5) Make sure that parts with holes and cavities are positioned correctly so that water and disinfectant solutions can circulate freely.

v. Placement of Special Materials

(1) Place materials whose inner surfaces need to be washed, such as tubes and hoses, in a way that allows water to pass through them.
(2) Place expensive and delicate materials carefully and use appropriate placement devices to protect them.

vi. Post-Installation Check of the Device

(1) Before closing the lid of the device, check the arrangement of the ingredients. Ensure that the materials can move freely and do not hit each other.
(2) Close and lock the covers of the device.
(3) Select the appropriate washing and disinfection program for the device.
(4) Start the device and wait for the program to complete.

vii. After Washing and Disinfection

(1) After the program is completed, open the door of the device and carefully remove the ingredients.
(2) Check clean and disinfected materials and reprocess if necessary.
(3) Clean the inside of the device and the baskets and prepare them for the next use.

5. Care

Water quality is very important for long-lasting and error-free use of the device. Therefore, in cases where water quality is not suitable;

Device door seals, filters, detergent transmission channels and materials that may lose their properties over time should be kept under observation.

It is recommended to run the "Self Washing " program once a week to keep the cell clean .

Device maintenance time is determined as 6 months or 600 cycles and the maintenance plan is presented in APPENDIX-B.

In addition, if you have questions regarding maintenance or technical service, you can contact the contact numbers included in the Maintenance Plan.

6. Troubleshooting:

ORDER NO.	FAILURE CODE	FAULT DESCRIPTION	REASON FOR FAILURE
one	E00	DOOR ERROR	DOOR SENSORS CANNOT TRANSMIT DOOR INFORMATION.
2	E01	HEATER FAN ERROR	IT SHOWS THAT THE DRYING RESISTANCE IS NOT ACTIVE, - THE DRYING RESISTANCE MAY BE DEFECTIVE OR THE BLOWER CANNOT PROVIDE AIR INLET AT SUFFICIENT PRESSURE. -THE RESISTANCE CONTACTOR MAY NOT BE ACTIVE.
3	E02	EMERGENCY STOP ERROR	THE EMERGENCY STOP BUTTON IS ACTIVE, IT MUST BE RELEASED.
4	E03	DETERGENT TIMEOUT ERROR	DETERGENT TRANSMISSION LINES MAY BE CLOGGED, DETERGENT INTENSITY MAY NOT BE COMPATIBLE WITH THE DEVICE, THE PERISTALTIC PUMP OR THE COMPONENTS THAT ACTIVATE IT MAY BE DEFECTIVE.
5	E04	NEUTRALIZING TIMEOUT ERROR	NEUTRALIZER TRANSMISSION LINES MAY BE CLOGGED, NEUTRALIZER DENSITY MAY NOT BE COMPATIBLE WITH THE DEVICE, THE PERISTALTIC PUMP OR THE COMPONENTS THAT ACTIVATE IT MAY BE DEFECTIVE.
6	E05	WATER TAKING TIMEOUT ERROR	THE WATER MAY BE CLOSED, THE WATER PRESSURE MAY NOT BE ENOUGH, THE DOOR MAY BE OPEN.
7	E06	WATER DRAIN TIMEOUT ERROR	THE DRAIN MAY BE CLOGGED, THE DRAIN VALVE OR THE UNITS THAT ACTIVATE IT MAY BE DEFECTIVE.
8	E07	SENSOR ERROR	AT LEAST ONE OF THE SENSORS PROVIDING DATA ON THE DEVICE MAY BE FAULTY.
9	E08	DRYING RESISTANCE ERROR	THE DRYING RESISTANCE OR THE COMPONENTS THAT OPERATE IT MAY BE DEFECTIVE.
10	E09	WATER HEATER RESISTANCE ERROR	THE WATER HEATING RESISTANCE OR THE COMPONENTS THAT ACTIVATE IT MAY BE DEFECTIVE, THE CELL PRESSURE SENSOR MAY NOT PROVIDE CORRECT INFORMATION.
11th	E10	MAX. WATER LEVEL ERROR	THE CELL PRESSURE SENSOR MAY BE DEFECTIVE OR THE DOOR MAY BE LEFT OPEN.

7. Technicial Specifications :

Device Technical Specifications are presented in the Information Document in ANNEX-C.

If you have questions or problems, please contact us.

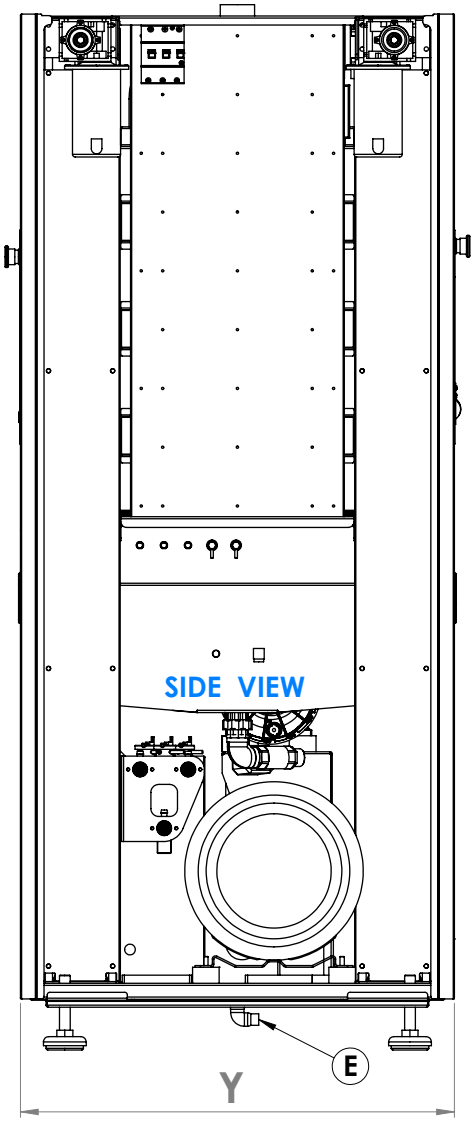
STERİLMED MEDİCAL ELK. ELN. OTOM. İNŞ. GIDA SAN. VE DIŞ TİC.LTD. ŞTİ.
Başkent Organize Sanayi Bölgesi 18. cadde No: 43 Malıköy, Sincan / ANKARA / TURKEY
Tel:+90 312 375 81 00 * Fax:+90 312 375 92 92 Mob.: +90 533 390 30 45
info@sterilmed.com.tr www.sterilmed.com.tr

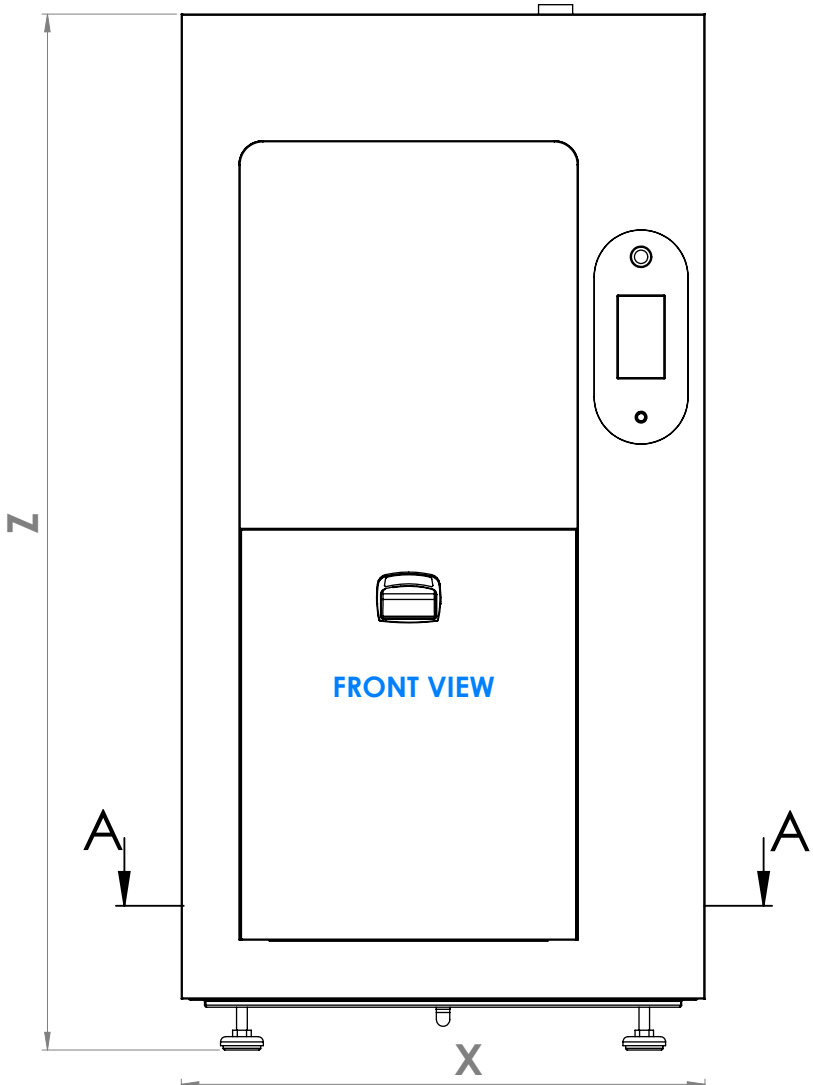
8. Legal Notices

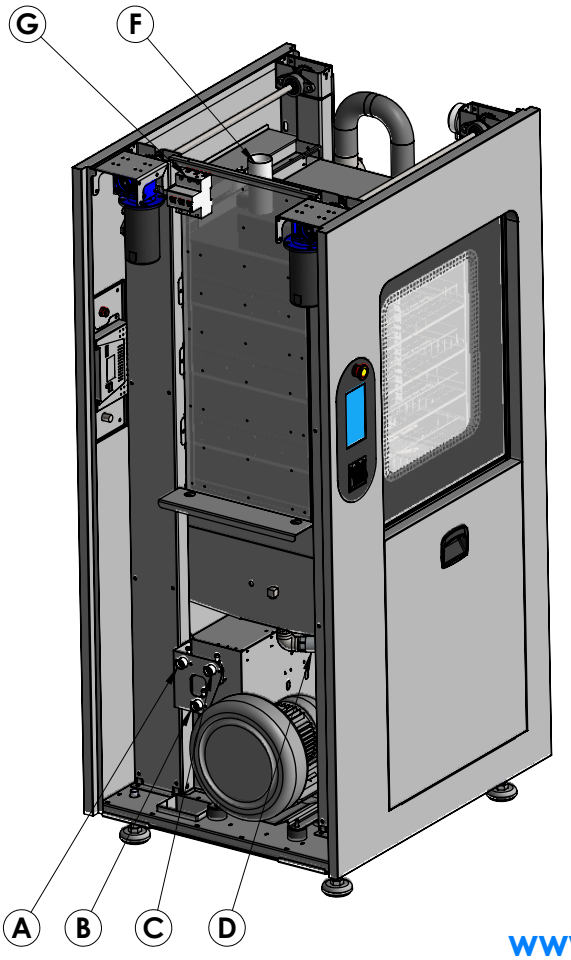
This guide is for informational purposes only and should not be construed as legal advice. It is important that you comply with all legal regulations before using the device.

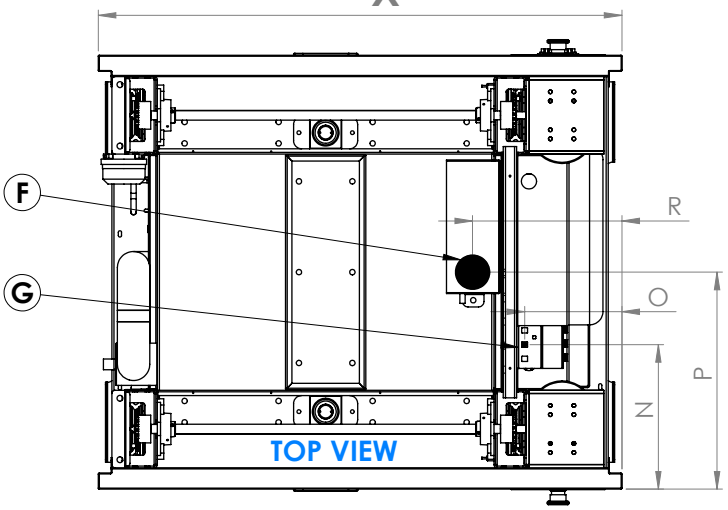
9. Copyright

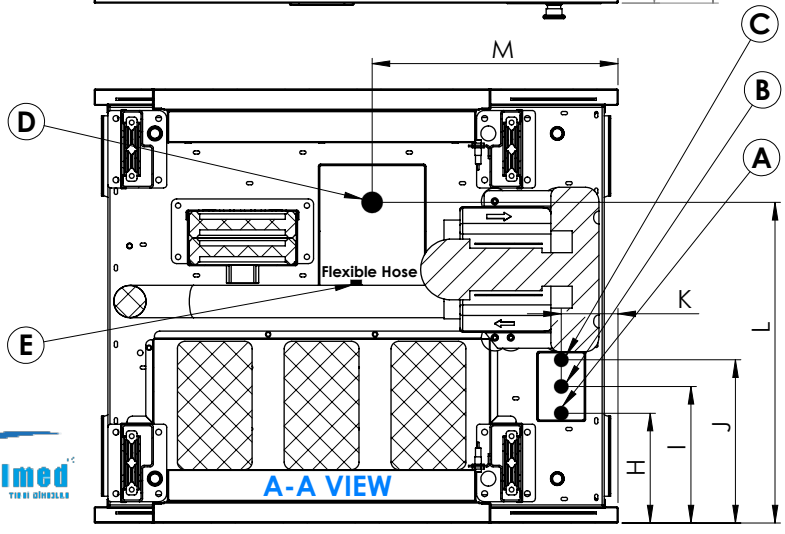
WASHER DISINFECTOR INSTALLATION GUIDE











Sterilmed

www.sterilmed.com.tr

WASHER DISINFECTOR INSTALLATION GUIDE		
FITTINGS CHART		
NO	**DESCRIPTIONS**	
A	WATER - 1	(RO)Deionized Cold Water (3/4")
B	WATER - 2	(RO)Deionized Hot Water (3/4")
C	WATER - 3	Distilled Water (3/4")
D	DRAIN - 1	Min. 50mm Steel Drain Pipe
E	DRAIN - 2	1/2" Flexible Hose
F	FLUE (AIR DRAIN)	Min.100 mm (60 to100mm Reduction)
G	ELECTRICITY	400VAC 3L-1N-1PE

DIMENSION CHART (%10)

NO	X (mm)	Y (mm)	Z (mm)	H (mm)	I (mm)	J (mm)	K (mm)	L (mm)	M (mm)	N (mm)	O (mm)	P (mm)	R (mm)	Fuse	Cable
WD-8	980	812	1930	220	270	320	110	600	460	270	180	406	280	80A	5x10 mm²
WD-10	980	812	1930	220	270	320	110	600	460	270	180	406	280	80A	5x10 mm²
WD-12	980	1022	1930	220	270	320	110	680	460	370	180	616	280	80A	5x10 mm²
WD-15	980	1022	1930	220	270	320	110	680	460	370	180	616	280	80A	5x10 mm²
WD-18	980	1022	1930	220	270	320	110	680	460	370	180	616	280	80A	5x10 mm²

Service gap must be at least 60cm between devices, if there is more than 1 device.

STERILMED MEDICAL
STANDART MAINTENANCE KITS FOR WASHER DISINFECTOR

WASHER DISINFECTOR PREVENTIVE MAINTENANCE (WDPM)

CODE	MAINTENANCE PARTS	AMOUNT
5M2WD1	FLOW HOSE (DETERGANT)	2 qty
5M2WD2	FLOW HOSE (PERISTALTIC DOSING PUMPS)	2 qty
5M2WD3	DOOR GASKET FOR WASHER	2 qty
5M2WD4	HEPA FILTER	1 qty

- Preventive maintenance should be performed every **600 cycles or 6 months!**
- For all devices that is used in medical section, periodic maintenance is required to keep it running at optimal levels. Inspecting materials and replacing parts should be a key strategy for reducing the risk of unplanned stoppages and inefficiency.
- All maintenance and timely replacement of parts are required for the **warranty to continue. Otherwise, the warranty may be void.**

Sterilmed Medical
Başkent OSB. 18. cad. No:43
Malıköy Sincan/ANKARA
TURKEY

www.sterilmed.com.tr

Phone :+90 312 375 81 00
Cell :+90 533 390 30 45
Fax. :+90 312 375 92 92
Mail :www.info@sterilmed.com.tr

SM-WD Model Washer Disinfectors
Technical Datasheet

STERILMED's Washer & Disinfector Devices is designed and manufactured for fast and efficient disinfection of surgical instruments, dressing tools, rubber materials and liquids in a glass container in healthcare facilities.

Model	WD-8	WD-10	WD-12	WD-15	WD-18
Volume (lt.)	250	300	350	400	450
Vessel Width (mm)	625	625	625	625	625
Vessel Height (mm)	680	680	680	680	680
Vessel Depth (mm)	600	600	850	850	850
Device Width (mm)	980	980	980	980	980
Device Height (mm)	1930	1930	1930	1930	1930
Device Depth (mm)	820	820	1070	1070	1070
Package Width (mm)	1030	1030	1100	1100	1100
Package Height (mm)	2050	2050	2050	2050	2050
Package Depth (mm)	970	970	1220	1220	1220
Single Door	+	+	+	+	+
Double Door	+	+	+	+	+
Touch Screen	7”	7”	7”	7”	7”
RS232 Outlet	+	+	+	+	+
Water Resistance (kW)	10	10	15	15	15
Drying Resistance (kW)	6	6	6	6	6
Blowing Drying Motor Fan (m^3/h)	210	210	210	210	210
Recirculation Pump (KW)	1.47	1.47	2.4	2.4	3.0
Recirculation Pump Electrical Properties	380V±10	380V±10	380V±10	380V±10	380V±10
Recirculation Pump Flow (L/min)	1000	1000	1000	1000	1000
Detergent Dosing Pump	+	+	+	+	+
Neutralizing Dosing Pump	+	+	+	+	+
Water Drainage Pipe Diameter	1”	1”	1”	1”	1”
Basket Store	4	5	4	5	6
DIN Basket	8	10	12	15	18
HEPA Filter	H14, Particle Retention Ratio %99.999				
Electrical connection	3L+1N+1PE 50 Hz, 380 V AC				

Standard Programs	Program 1 INST STANDART		Program 2 INST INTENSE		Program 3 CONTAINER		Program 4 BABY BOTTLES		Program 5 GLASSWARE	
	Temperature (°C)	Time (min)	Temperature (°C)	Time (min)	Temperature (°C)	Time (min)	Temperature (°C)	Time (min)	Temperature (°C)	Time (min)
	0-60	67	0-70	72	0-60	67	0-70	82	0-70	68
	Program 6 SHOES		Program 7 ANAESTHETICS		Program 8 MIS INST		Program 9 DRYING		Program 10 SELF WASHING	
	Temperature (°C)	Time (min)	Temperature (°C)	Time (min)	Temperature (°C)	Time (min)	Temperature (°C)	Time (min)	Temperature (°C)	Time (min)
	0-60	67	0-60	71	0-60	71	0-120	19	0-50	28

* All the programs include “Thermal Disinfection (90 °C) and Drying phases (120 °C)
* 8 Special Programs included and may increase up to 50.
* The duration of the program times are approximate.

Device

Control System	PLC (Programmable Logic Controller)
Operation Mode	Fully Automatic / Button Command
Display Type	Color TFT, LCD Touch Screen
Display Sizes Available	7,0"
Key Pad	Touchscreen
Printer	40 Character/line, integrated thermal printer-optional
Communication	RS232 Port
Warning System	Visual & Audio & Printed
Data Storage	1000 cycles
Monitoring	All the information displayed on the screen
Mobility	Easy positioning on 4 castors (2 x swivel) and firm fixing on suspension legs
GSM and Remote Control	WiFi and GSM modüle-optional

SM-WD Model Washer Disinfectors
Technical Datasheet

Medical Device Directive	: 93/42/EEC as amended by directive 2007/47/EC
Device Classification	: Class IIb, acc. To EC MDD 93/42/EEC 2007/47/EC (Annex II)
Low Voltage Directive	: 2006/95/EC - EN 60601-2-040
EMC Directive	: 2014/30/EU EN 61326-1
Washer Disinfector Equipment Directive	: EN 15883-1
Sterilization – Washer Disinfector – Large sterilizers	: EN285:2016
Quality Management System Requirements	: EN - ISO 9001:2015
Medical Devices – Quality management systems – Requirements for regulatory purposes	: ISO 13485:2016
Environmental Management Systems – Requirements with guidance for use	: ISO 14001:2015

"Validation Microbiological" tests of STERILMED Washer & Disinfector are performed and certified according to the directives of EN ISO 15883-1 and EN ISO 15883-2.

.

Safety & Quality Features

- Protects operator from electrical current leaks.
- Short circuit protection.
- HEPA filter for air filtration.
- Pressure sensor for water level.
- Emergency stop button.
- Password protection.
- Doors locks.
- Unable to open both doors at once in Septic-Aseptic models.

Temperature

Range	15°C - 120°C (chamber)
Measurement	2 x PT 100 (DIN Class A) Sensors
Body	3mm,AISI 304 stainless steel
Chamber	1.5 mm, AISI 304 stainless steel(Mirror)
Door	Tempered Glass
Panels Surrounding	AISI 304 stainless steel
Piping	AISI 304 stainless steel

Consumption

Electricity	10 kW/cycle
Water (Approximate)	~120 Lt/cycle

Cart Set (Transport + Loading) with adjustable height option

Single Transport Trolley (Optional Height Adjusting)

Single Loading Cart (AISI 304 Stainless&4-6 floors with washing arms)

DIN Basket (AISI 304 Stainless)

Installation Requirement

Power	25 kW (Max.), 3 Phase / 380 VAC ±10
Water	RO treated deionized water for high performance

Feeding Water Requirements

Residue on evaporation	≤ 10 mg/L
Silicate (SiO_2)	≤ 1 mg/L
Iron	≤ 0.2 mg/L
Cadmium	≤ 0.005 mg/L
Conductivity (at 25°C)	≤ 0.05 mg/L
pH Value (degree of acidity)	≤ 0.1mg/L
Appearance	≤ 2 mg/L
Lead	≤ 0.5 mg/L
Heavy metals other than iron, cadmium	≤ 5 µS/cm
Chloride (Cl)	5 to 7,5
Phosphate (P_2O_5)	≤ 0.1 mg / L
Color	Free of sediment, clear, colorless
Asperity (Σ Earth Alkali Ions)	≤ 0.02 mmol/L

Drainage

Inclined pipe to be installed on-site at least 2 meters of length with.

Installation Conditions

At least 60 cm. space is needed on both lateral sides of the device to provide an effective technical service. Exhaust fan or ventilation funnel needs to be placed above the device for an effective evacuation of heat.

*Water quality should be checked by standard analitycal test methods by the institution which utilizes the sterilizer.

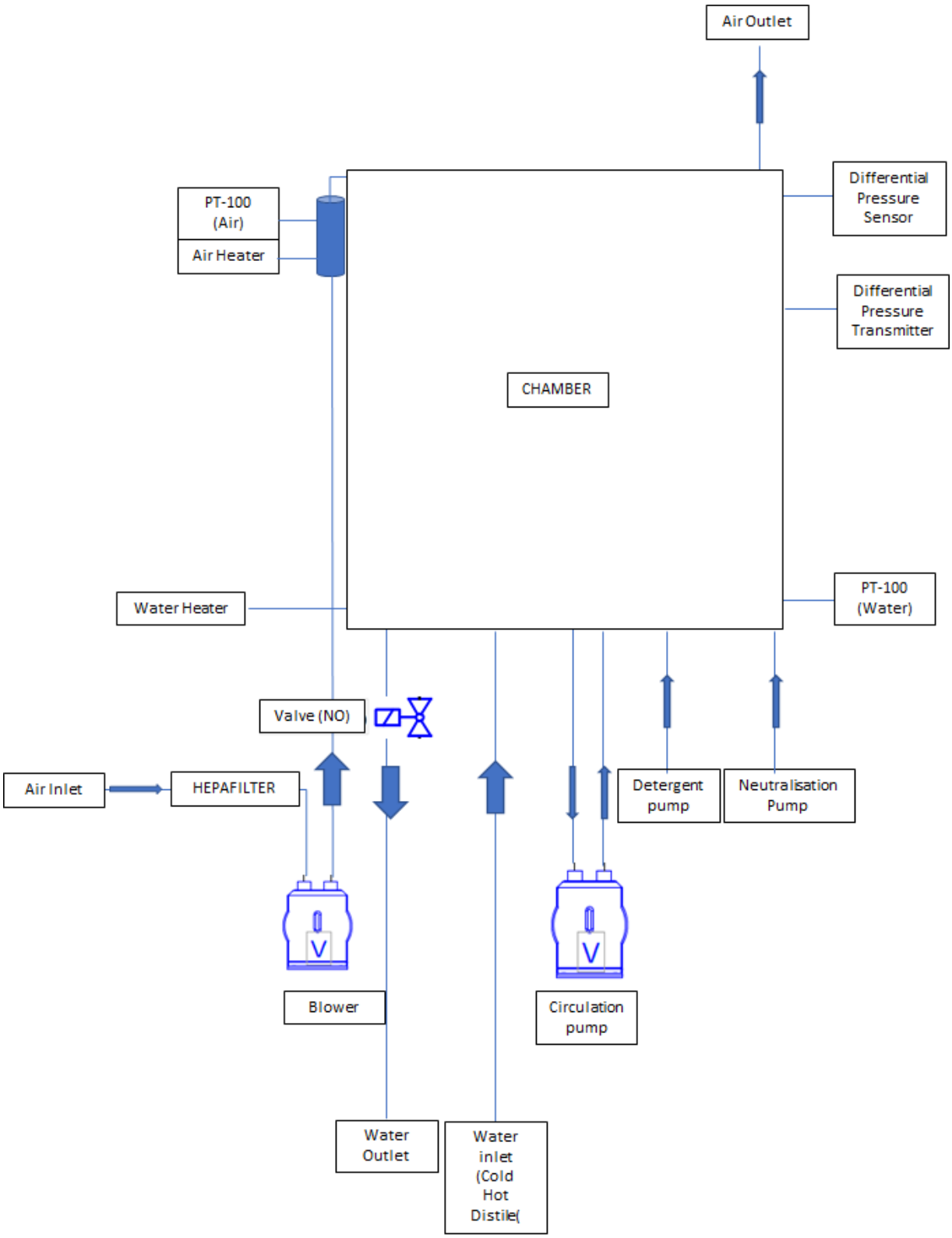
Sterilmed Medical

ELEKTRİK ELEKTRONİK OTOM. İNŞ. GIDA SAN. VE DIŞ TİC. LTD. ŞTİ.

Başkent Organize Sanayi Bölgesi 18. cadde No: 43 Malıköy, Sincan / ANKARA / TURKEY Tel:+90 312 375 81 00 * Fax:+90 312 375 92 92

info@sterilmed.com.tr **www.sterilmed.com.tr**

WASHER&DISINFECTOR FLOW CHART



	İSİM	TARİH	İMZA	RESİM NO	
ÇİZEN	Ramazan T.	01.03.2021		AĞIRLIK (g)	
KONTROL	Ramazan T.	01.03.2021			
ONAY	Ramazan T.	01.03.2021		MİKTAR	ÖLÇEK 1:1 A3 1/1
Belirtilmeyen Ölçü Toleransı			± 0.1	..... Adet	
Belirtilmeyen Açı Toleransı			± 0.1°	REVİZYON	www.sterilmed.com.tr
Belirtilmeyen Yüzey Toleransı			Ra 1.6	Rev.01	