



**STEAM STERILIZER**  
**LOW TEMPERATURE**  
**STERILIZER**

# Sterilmed Medical

ElektrikElektronikOtom.İnş.GıdaSan.veDışTic.Ltd.Şti.



## About us

Sterilmed Medical was established in 2009 in Ankara to provide services in the medical device sector. It has aimed advancement since the day of its establishment by also taking growth and compliance with the contemporary technologies and protecting the environmental conditions.

Our Firm is following the innovations in its sector and in abroad through its research and development unit and its application staff with a strong infrastructure of engineers, and is continuing to produce devices it had developed in computer environment based on such innovations with high technology and to contribute their development so as to be most beneficial for the Turkish medicine.

With this purpose, our Firm is strictly following the "Quality Management" principles and rules from design of the products to the after sale servicing.

Our Firm has been currently certificated for compliance with ISO 9001 quality management system, ISO 13485 medical device quality management system certificate and ISO 14001 environment management system certificate and with product certificates under MDD 93/42/EEC Medical Devices Directive and PED 97/23/EEC Pressurized Equipment certificate. Furthermore, our steam sterilizers and washing disinfection devices have been certificated by the UK accredited body.

Our Firm is successfully implementing several projects supported by National organizations.

Sterilmed Medical has been awarded with the following:  
Our Firm possesses the following certificates;

CE Certificates under the following directives:  
ISO 9001,  
ISO 13485,  
ISO 14001 Quality Management System,  
MDD 93/42/EEC Medical Devices Directive,  
PED 97/23/EEC Pressure Equipment Directive





## Our Vision

To make the Serilmed brand a global brand to make our Firm remembered first in the sector.

## Our Mission

Our main task is to create designs with competition power in the global sense by taking the priorities of the sector into consideration and being respectful to the environment and people and giving the first priority to the wishes and expectations of customers, and also to produce innovative technological medical products by meeting all the national and international legal requirements.

## Our Basic Values

**We are bound up with the Medical Ethical Rules,**

**We are people-oriented,**

**We respect environment,**

**We are creative,**

**We are customer-oriented,**

**We are innovative,**

**We are pro-active,**

**We believe in the team spirit.**



# Steam Sterilizers

Sterilmed Medical SMA and SMB series steam sterilizers are able to sterilize all materials that are heat and moisture resistant, packaged and unpatterned, which can be sterilized by pressurized saturated steam.



## General Features

Materials :Sterilization chamber, jacket, generator AISI 316L chamber 6mm.  
Jacket and generator Min. 3mm.  
Doors :AISI 304 L or 316L 10 mm.  
Inner surface chamber cleaning against collosion danger; Glass shered sandblasting or elektropolisaj method.  
Outer covering:AISI 304L or 316 L  
Gasket channel monoblock groove and cover hinge-pin bracket, minimum thickness 50 mm AISI 304L or 316L stainless steel.

## Usage areas:

- Operating theaters and laboratories of hospitals,
- Universities are required to attend faculties of science,
- Veterinary medicine, agriculture, dentistry and pharmacy,
- Medical waste treatment plants,
- Microbiology and research laboratories of industrial establishments
- Food, medicine, cosmetics etc.





## Cover and Safety System



Implemented Quality Management System, Standards and Directives:

- ISO 9001: 2008
- ISO 13485:2003
- EN ISO 14971:2012
- MDD 93/42AT
- EN 61010-1
- EN 285+A2
- EN 61010-2-040
- 2014/68/EU
- EN 62366







## Steam Generator



## Door and Safety System



The door is resistant to extreme pressure.

Heat insulation materials needed for heat losses are covered.

The movement of the door is a vertical axis (down-up) and it works extremely quietly with the pneumatic system.



When the door is closed, there is a safety system that prevents any hands injuring and allows the door to move in the opposite direction. Pressure and vacuum sealing of the door is provided by silicon based seal which is resistant to the temperature of the device and door sealing is provided by applying vapor pressure to the gasket channel.





The door sealing gasket can be easily replaced without having to remove any part of the device and the gasket is a maintenance-free type. The door seal's replacement time is automatically displayed on the "video graphic touch screen LCD. In addition, the sterilization room can not open the door without the pressure of the press.

On both sides it is equipped with mechanical control manometers for pressure visualization and LCD screens.

Easy loading and unloading operations are carried out with the door which leaves the whole of the sterilization chamber of rectangular shape prism open. In addition, with the safety system preventing sudden opening of the door, the door is prevented from operating without closing the door.

## Control Panel

Full automatic, microprocessor controlled with PLC

Visual, written and audio warning system monitoring

Pressure error (vacuum), steam error (heat)

Power cut (audio and visual warning)

UPS or Battery System

Alarms: power failure, low/high temperature, sterilization cycle failure

Overheating temperature protection



Programme name and number  
Sterilization phases and graphics  
Chamber, jacket, generator pressures  
Chamber temperature  
Total sterilization time and remaining time  
Sterilization pressure and heat measurements  
Sterilization counter  
Sterilization steps  
Errors and cause of error  
Full automatic, PLC control  
Optional remote access via ethernet  
USB port RS232 /RS485 ETHERNET module  
Emergency stop button rotary Switch 2 Positions with lock

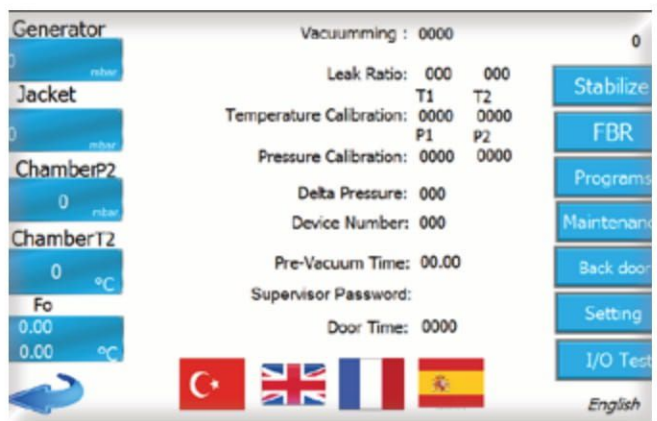
### PLC Micro computer







## Programme Phases



Languages: English, Russian, Romanian

The device can be started manually after the password is entered  
Manual Vacuum, Steam, Air etc..

All pressure and temperature values can be seen from touch panel



**Touch Panel USB and Ethernet**

## Touch Panel and Software

- \* Date-time
    - The name and the name of the program being run
    - Pre-vacuum time and phase number
  - \* Preheating temperature
    - Sterilization chamber temperature
    - Sterilization chamber pressure
    - Sterilization time
  - \* Drying time
    - Error messages that may occur in the system
    - Date, time and total time information at the end of the sterilization process
    - User signature repository at the end of the process.
- System diagnostic and testing program

Settings are selected from the main menu.

### Touch Panel Save Programme Data

0 Catch % AFH76 00:00 00/00/0000

P1 P2 P3 P4 P5 P6 P7 P8

Pre-Vacuum 0 Piece

Temperature 0 °C

Sterile Time 0.00 min

Drying Time 0.00 min

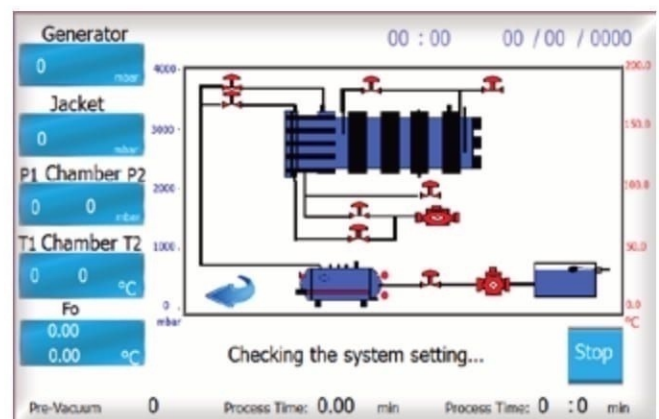
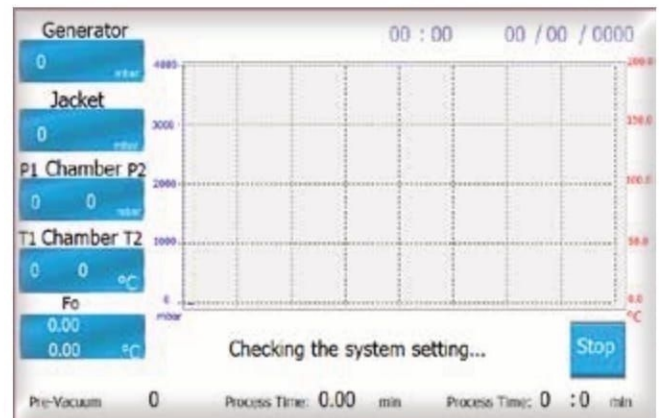
No Water Supply

Look Test Start Custom

	Time	Temperature	Pressure
Pre-Vacuum:	0 0	0	0
Pre Heat:	0 0	0	0
Sterilizing:	0 0	0	0
Sterilizing:	0 0	0	0
Drying:	0 0	0	0
Drying:	0 0	0	0
Cycle End:	0 0		
Date	0 / 0 / 0		

Navigation icons: back, up, down, USB, print

### Touch Panel Sterilization Graph







Time date settings can be made Password is entered from the password menu.  
(password for manual use)

00 : 00 00 / 00 / 0000

Time Date Year

10 34 11 10 2019

Admin password

0 1 2 3 4 5 6 7 8 9

Generator	Condenser	2.PT100	2.Pressure	Gasket
0	OFF	OFF	OFF	OFF
Jacket	Drain valve	Liquid PT100	GRAVITY	
0	OFF	ON	OFF	
P1 ChamberP2	Door Oto. Manual	Door Double Single	Gen Dry Man. Oto.	
0 0	OFF	OFF	OFF	
T1 ChamberT2	Gen. Jacket	F0	Test	
0 0 °C	OFF	ON	OFF	
Fo	Password	Eco Mode	Door Opening	
0.00 °C	ON	ON	OFF	

SUPERVISOR PASSWORD MENU:

User Name: Password:

User 1 Password: 0000

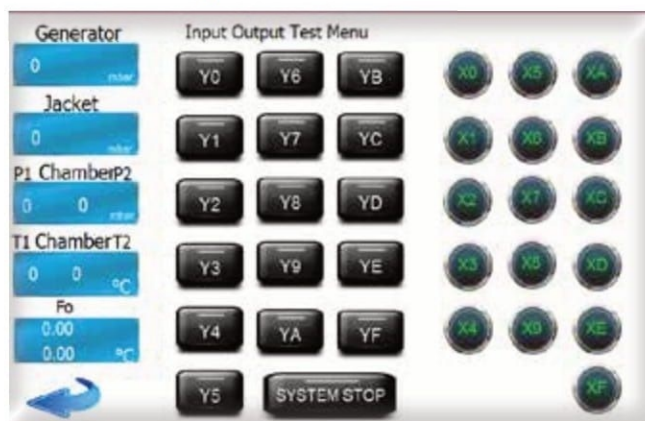
User 2 Password: 0000

User 3 Password: 0000

P1		0	000	00.00	00.00
P2		0	000	00.00	00.00
P3		0	000	00.00	00.00
P4		0	000	00.00	00.00
P5		0	000	00.00	00.00
P6		0	000	00.00	00.00
P7		0	000	00.00	00.00
P8		0	000	00.00	00.00

## Technical Details

Pressure measurement:  
 -1.0...+5 Bar ( $\pm 0.001$  bar)  
 Temperature measurement:  
 0°C.... 150°C ( $\pm 0.1$  °C)  
 Sterilization time 0.... 120min. ( $\pm 1$ min.)  
 Visual, written and audio warning  
 system monitoring Pressure error  
 (vacum)  
 Generator overheating protection,  
 steam error (heat)  
 Power cut (audio and visula warning)  
 Ability to watch the programme phases  
 on computer  
 Data recording of work done.



121 °C rubber,  
 121 °C liquid,  
 134 °C solid,  
 134 °C textile,  
 Bowie & Dick Test,  
 Leakage test,  
 Optional programming,  
 Ability to add user programme,  
 Ability to see all pressure and  
 heat sensors on  
 Programme and calibration,  
 Sleep mode and power saving mode,  
 Automatic start upon user preference.



**Pressure Sensor**

**Temperature Sensor**







### Thermal Printer



The thermal type printer located in the control unit is supplied with the following values as the cast:

- Data
- Sterilization Time for each cycle
- Sterilization Pressure for each cycle
- Sterilization Temperature
- Sterilization program
- Bar-code
- USER name



## Technical Details

Water pump : Imported 0.75 hp pipe part 304L or 316L stainless steel

Steam installment pipes : 304L or 316L stainless steel

Water installment pipes : 304L or 316L stainless steel

Air installment pipes : 304L or 316L stainless steel

Vacuum pump : Imported flow speed 2900 cycle/minute

The discharge of the device is by the heat exchanger system.

Optional materials : Stainless steel trolley

Stainless steel loading trolley

Software controlled water saving system



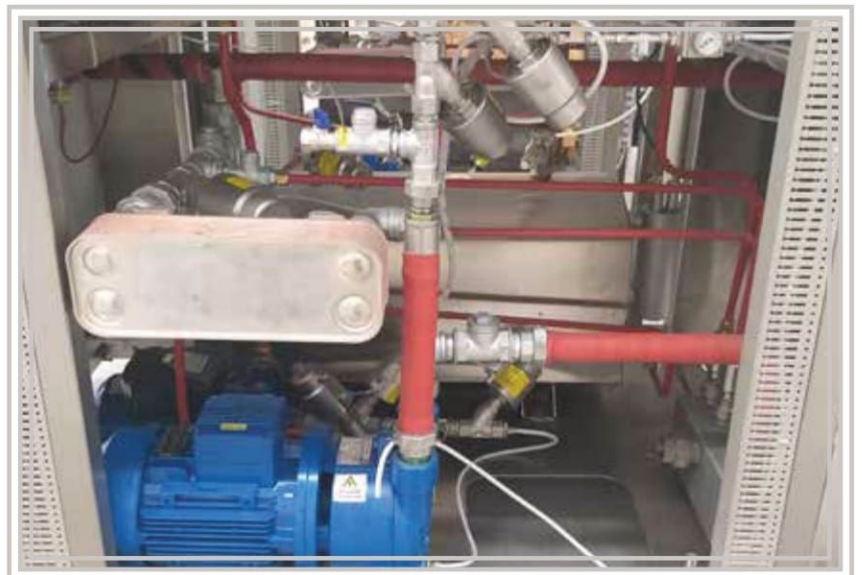
**Water Pump**



**Heat Exchanger**



**Vacuum Pump**



**Steam installation view**





All Components Of Steam Installment Are 304 or 316 L Stainless Steel



**Steam Trap**



**Hepa Filter**

Pneumatic solenoid valve : Imported 304L or 316L stainless steel

Steam trap : Imported 304L or 316L stainless steel

Safety valve : Sterilization chamber, jacket, generator 304L or 316L stainless steel

Hepa filter: 0.01  $\mu$ m 99.999%

Check Valve : 304L or 316L stainless steel

**Safety Valve**



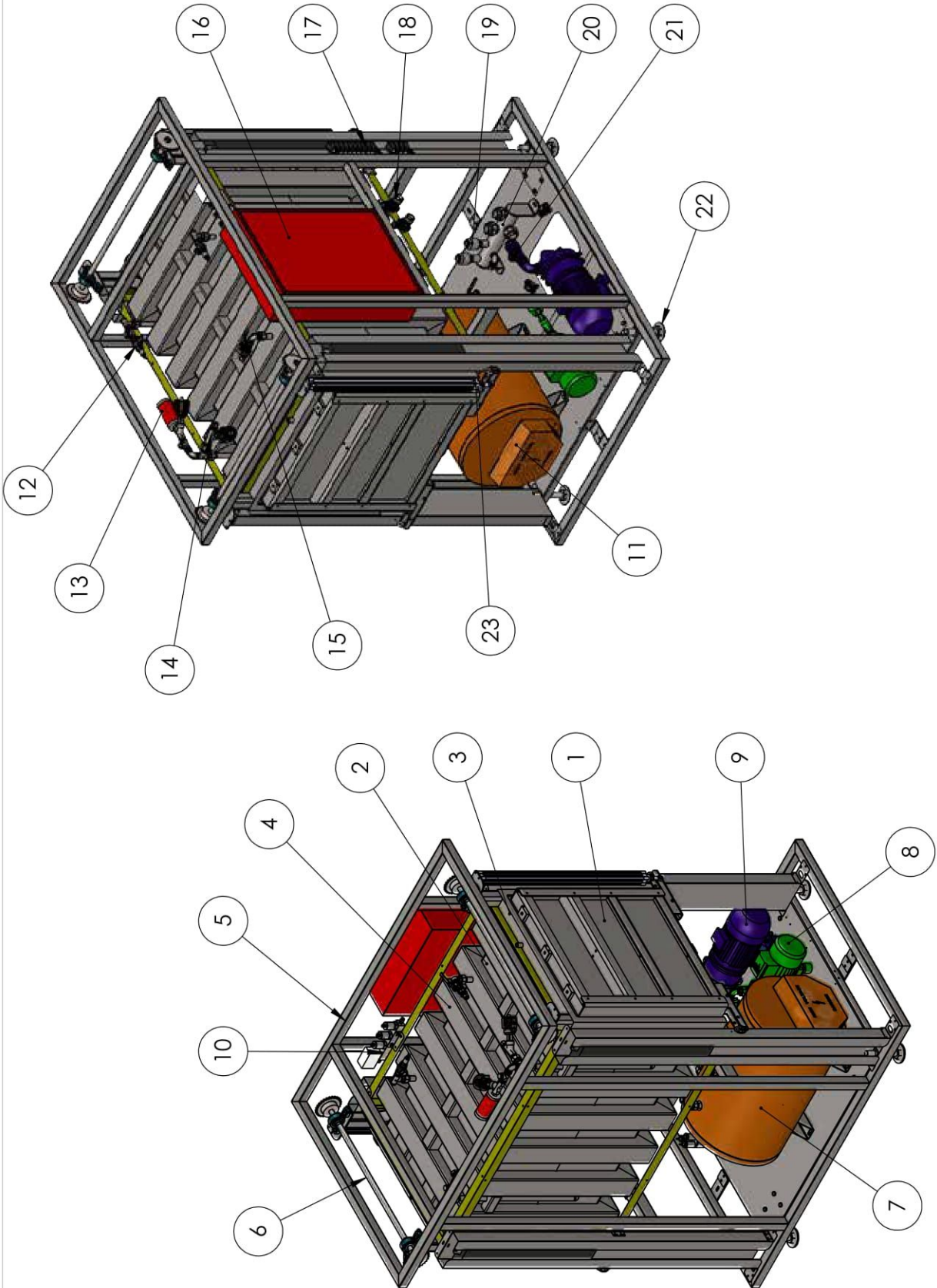
**Pneumatic Valve**

**Check Valve**











## Sterilmed SMB Steam Sterilizer Specifications

DSD: DOUBLE SLIDING DOORS

SSD: SINGLE SLIDING DOOR

CHAMBER DIMENSION

DEVICE DIMENSION

GENERATOR

REQUIREMENTS FOR INSTALLATION

	MODELS	LITER	STU	CHAMBER DIMENSION			DEVICE DIMENSION			GENERATOR			REQUIREMENTS FOR INSTALLATION	
				WIDTH	HEIGHT	DEEP	WIDTH	HEIGHT	DEEP	WIDTH	HEIGHT	DEEP	STEAM GENERATOR LITER	POWER KW
SMB-DSD DOUBLE DOORS	SMB-DSD-160	160	1	400	400	1000	870	1650	1350	50	20			
	SMB-DSD-200	200	1.5	500	500	800	970	1750	1150	50	30			
	SMB-DSD-250	250	1.5	500	500	1000	970	1750	1350	50	30			
	SMB-DSD-300A	300	2	500	500	1200	970	1750	1550	50	30			
	SMB-DSD-300	360	4	670	670	800	1140	1900	1050	50	30			
	SMB-DSD-450	450	6	670	670	1000	1140	1900	1400	50	40			
	SMB-DSD-540	560	8	670	670	1250	1140	1900	1600	79	40			
	SMB-DSD-675	695	10	670	670	1550	1140	1900	1900	79	50			
	SMB-DSD-810	830	12	670	670	1850	1140	1900	2200	89	50			
	SMB-DSD-945	965	14	670	670	2150	1140	1900	2500	89	60			
SMB-SSD SINGLE DOOR	SMB-VD-75	100	1	400	400	625	870	1650	950	50	20			
	SMB-SSD-160	160	1	400	400	1000	870	1650	1350	50	20			
	SMB-SSD-200	200	1.5	500	500	800	970	1750	1150	50	30			
	SMB-SSD-250	250	1.5	500	500	1000	970	1750	1350	50	30			
	SMB-SSD-300A	300	2	500	500	1200	970	1750	1550	50	30			
	SMB-SSD-300	360	4	670	670	800	1140	1900	1050	50	30			
	SMB-SSD-450	450	6	670	670	1000	1140	1900	1400	50	40			
	SMB-SSD-540	560	8	670	670	1250	1140	1900	1600	79	40			
	SMB-SSD-675	695	10	670	670	1550	1140	1900	1900	79	50			
	SMB-SSD-810	830	12	670	670	1850	1140	1900	2200	89	50			
	SMB-SSD-945	965	14	670	670	2150	1140	1900	2500	89	60			

a: the device necessary for water (the reverse osmosis system at least 3 bar pressure 3/4 " )

b: the expense of the device connection (at least 2" pipe or galvanized pipe resistant to 150 degrees)

c: the air necessary for the device (1/2" minimum 6 bar, dry air)



## GENERAL FUTURES

		Standart	Optional
General Futures	Chamber	6 mm 316 L Stainless Steel	6 mm 316 L Stainless Steel
	Jacket	3 mm 304 L Stainless Steel	3 mm 316 L Stainless Steel
	Generator	3 mm 304 L Stainless Steel	3 mm 316 L Stainless Steel
	Cover	10 mm 304 L Stainless Steel	10 mm 316 L Stainless Steel
	Chassis	3 mm 304 L Stainless Steel	3 mm 316 L Stainless Steel
	Gasket Channel and Cover Bearings	50 mm 304 L Stainless Steel Monolithic System	50 mm 316 L Stainless Steel Monolithic System
	External Material	1 mm 304 L Stainless Steel	1 mm 316 L Stainless Steel
	Troyler	304 L Stainless Steel	316 L Stainless Steel
Control Systems And Programme	Control System	PLC Microprocessor	PLC Microprocessor
	Display	7" Colourful Touch Screen	5", 6" or 10" Colourful Touch Screen
	Printer	40 Column Thermal Printers	40, 60 or 80 Column Thermal and Cartridge Printer
	No of Preset Programs	7	20
	No of Test Programs	2	2
	No of Free Programs	20	50
	Minimum Vacuum Level	70 mm bar	70 mm bar
	Remote Control	No	have remote control via ethernet
	Port	Usb Ethernet Rs232 And Rs 485	Usb Ethernet Rs232 And Rs 485
Mechanical Installation	Hepa Filter	0.01 µm %99.999	0.01 µm %99.999
	Vaccum Pump	2,2 Kw 2900 cycle/minute	Stainless Steel pump 2,2 Kw 2900 cycle/minute
	Safet Valve	1/2" Brass Stainless Steel adjustable	1/2" Stainless Steel adjustable
	Control Valve	1/2" And 1 " 304 L Stainless Steel	1/2" And 1 " 316 L Stainless Steel
	Check Valve	1/2" And 1 " 304 L Stainless Steel	1/2" And 1 " 316 L Stainless Steel
	Exchanger System	-	With Exchanger
	Water Level Control	With Stainless Prob	With Magnetic Sensor Or Flap