

**EUROWASHER**  
Instruments washer disinfector VSD  
Medical device



## Series: 10, 15 e 18 with



Series 10.250



Series 15.350

## Compact dimensions

## Technology

The Eurowasher MD.WSD range is a series of new generation steam sterilisers, result of the most advanced design by Schlumbohm & Angelantoni Life Science, Leader in the world of Infection Control.

German technology combined with Italian design and creativity, together with the Corporate Know-how matured over decades of activity in the sector, have supported the development of equipment based on the concept of "total quality", able to meet the requirements of an Elite market requiring total safety assurance, absolute reliability and sterilisation processes that can be repeated in time, without burdening operators with the risk of assessment.

Total quality to produce medical devices with high construction standards, advanced techniques and innovative solutions.

Total quality for an environmentally-friendly project with almost zero impact on the environment by water consumption, and extremely low for electricity and heat dissipation..

**Synergy**  
**Know-how**  
**Experience**  
**Ability**  
**Customer support**

vertical slider doors.



Series 18.400

versatility and rapidity

## Savings

The constant research for greater productivity and efficiency distinguishes and accompanies us on a design journey aimed at "Safety", "Total quality" and "Savings".

«Savings» is one of the aims that we set ourselves in the design phase:

- savings in operating consumption,
- savings of maintenance with devices, solutions and components of high quality and reliability and long service life.

## Use

In a medical device manufacturing process, the instrument washing and disinfecting appliance plays a critical role, being a fundamental step to first bring down and then stabilise the microbial load and assure repeatable reduction over time.

The appliances of the Eurowasher MD.WSD instrument wash and disinfect range have been designed to be installed in the sterilisation stations and are second only to the steriliser for the intended use, which is to produce surgical instruments washed perfectly and with a significant SAL.

**+50%**  
Service life



## Automatic wash

The automatic wash allows contamination risks to be reduced, accelerates washing times, reduces costs and means the washing cycle can be validated.

In order to ensure that the process remains constant over time, the equipment in the Eurowasher MD.WSD range is fitted with devices and sensors to verify and confirm data and prevent any kind of error.

In fact, after experimental tests, constant monitoring of parameters is carried out. These parameters can affect the result and/or make it inconsistent over time, such as: water pressure, water temperature, water jet moving speed, water jet mechanical action and added chemical.

The appliances in the Eurowasher MD.WSD range have been tested in compliance with the standard of reference as well as similar ones to assess washing quality.

## Disinfection

As well as perfect cleaning of the instruments, it is essential to achieve a substantial reduction of the microbial load at the end of the washing and disinfection process.

Furthermore, a constant value should be obtained at the end of the process with a final SAL of  $10^{-2}$  in order to be able to ensure an SAL of  $10^{-6}$  after sterilisation. Constant and precise monitoring of the “bioburden” allows the validity of disinfection, and the trend over time, to be assessed.

The thermochemical energy released by the chemical solution diluted in hot water allows a double effect to be obtained by attacking the micro-organisms with two different activities in order to overcome their resistance. In order to ensure the process as well as the final result remain constant over time, the equipment in the Eurowasher MD.WSD range is obviously fitted with devices and sensors to verify and confirm data and prevent any kind of error.

As a matter of fact, after experimental tests, constant monitoring is carried out of parameters that affect the result and/or make it constant over time, such as: detergent and disinfectant dosage, checking PH on discharge, water temperature, contact time of water at temperature with the surface of the instruments (A0) and chemical residue after rinsing. The appliances in the Eurowasher MD.WSD range have been tested in compliance with the standard of reference as well as similar ones to assess disinfection quality.

## Washing and disinfection cycles

The Eurowasher MD.WSD line is configured with the following cycles:

- 1** - Thermo-chemical washing and disinfection for surgical instruments at 93°C for 10 minutes
- 2** - Thermo-chemical washing and disinfection for containers at 93°C for 10 minutes
- 3** - Thermo-chemical washing and disinfection for surgical microinstruments at 93°C for 10 minutes
- 4** - Thermo-chemical washing and disinfection for basins at 93°C for 10 minutes
- 5** - Thermo-chemical washing and disinfection for anaesthesia material at 65°C for 10 minutes
- 6** - Thermo-chemical washing and disinfection for glass ware at 93°C for 10 minutes
- 7** - Thermo-chemical washing and disinfection for clogs at 65°C for 10 minutes
- 8** - Equipment washing and self-disinfection

## Quick cycles


The Eurowasher MD.WSD line has a series of features that make the washing and disinfection cycle faster, compared to the classic instrument washer.

The care in the details of plants, components and devices affecting and intervening in the washing and disinfection cycle performance, has allowed phases to be sped up and times to be reduced, thus increasing the production capacity.

In particular:

- a)** the reduced amount of water per phase,
- b)** the shape of the chamber to take water back to the pump quickly,
- c)** water preheating,
- d)** quick water loading,
- e)** the high performance recirculation pump,
- f)** the quick water discharge and turbulent flow drying through the impeller blades of the trolley and the diffusers in the lower part of the chamber opposite the suction,

allow phases to be sped up and make execution of the cycle quick, up to a maximum cycle time of 30 min.

 **-40%**  
Energy  
consumption

# Ergonomic loading

The Eurowasher MD.WSD range features an ergonomic loading height enhanced by the door(s) horizontal sliding. This makes it possible to easily reach all loading planes as well as making the arrangement of instruments, baskets, containers, glassware, micro surgical instruments and clogs safer, reducing the risks of incidents due to operators' visibility.

# Environmental impact

The Eurowasher MD.WSD line has been developed by applying environmentally friendly design with the aim of preserving the environment in which we live; adopting innovative technical solutions and high quality components, in order to significantly reduce consumption and, therefore, reduce pollution throughout the entire life cycle. Building on the idea of producing sustainable consumption equipment, reducing environmental impact, significant and measurable objectives have been reached that enhance the Eurowasher line in view of the performances it reaches.

Highlighted aspects are:

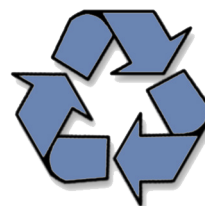
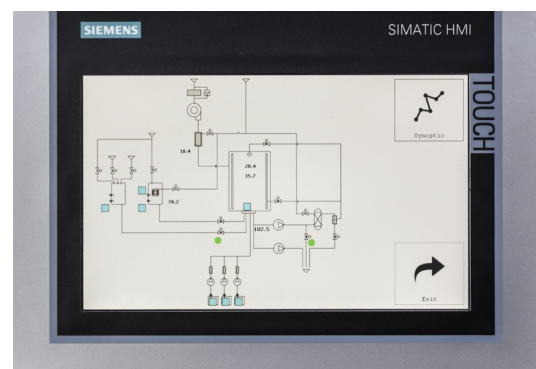
- **water consumption**
- **energy consumption**
- **recycling**

# Industrialisation

The position of the components, main units and operational phases to facilitate pre-assemblies and general assemblies, are analysed since the design phase, to significantly reduce times and costs in a serial production. The reduction of phases and the repetition of assembly operations, together with the optimisation of the semi-finished products, support the industrialisation of the production process and constant preservation of high quality standards of the finished product.

# Validation

Validation is one of the most important operations as it allows verifying, after installation, whether design conditions are respected. In particular, for the load object of the validation, we can verify that temperature, doses of chemical solutions and time fall within the correct parameters to ensure the effectiveness of the washing and disinfection process in compliance with the reference standard UNI EN ISO 15883-1.



**100%**  
Recycling



**-25%**  
Total cycle time

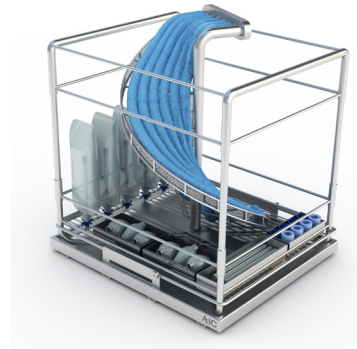




**5-LEVEL WASHING TROLLEY**



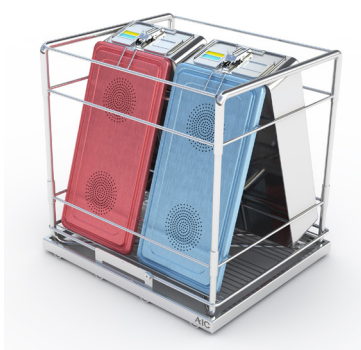
**MINI INVASIVE AND TUBULAR SUR-  
GERY WASHER TROLLEY**



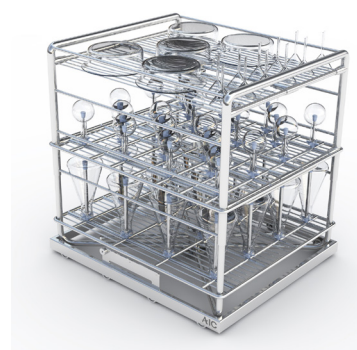
**ANESTHESIA TROLLEY**



**SHOES WASHER  
SUPPORT STRUCTURE**



**TROLLEY FOR  
CONTAINER WASHING**



**TROLLEY FOR LABORATORY  
GLASSWARE WASHING**

## Bioseal

The modern concept of a sterilisation unit calls for equipment, flows, paths, procedures, checks and traceability that must be implemented in order to consider instruments' "re-processing" safe. Specifically, the separation of clean and dirty environments is thus essential to reduce contamination risks.

Hence the need to create a barrier inside the instrument wash and disinfect appliance, between clean and dirty, that prevents contact between the areas.

The Eurowasher MD.WSD line is produced in order to fully meet this need through complete separation of the equipment on the sterile side - the so-called "Bioseal", which is aligned and sealed with the wall.

## Directives, Certificates, Quality and Construction Standards

The Eurowasher MD.WSD line equipment is CE marked with the identification number issued by the Notified Body according to European Directive 93/42/EEC and 2007/47/EEC as a Medical Device and with European Directive 2009/125/EEC (eco-design).

They also comply with European Directives: 2006/95/EEC for Low Voltage, 2004/108/EEC for Electromagnetic compatibility and 2006/42/EEC for Machinery.

Construction is done in compliance with the European Standards of reference UNI EN ISO 15883-1-2:2009 (washing and disinfection) and those related to it. UNI EN ISO 17665-1 (development, validation and routine testing), CEI EN ISO 61010-1 (electrical safety), CEI EN ISO 61010-1-040 (electrical safety), CEI EN ISO 61010-2-041 (electrical safety) CEI EN ISO 60204-1 (electrical equipment), UNI CEI EN ISO 17050-1:2005 (conformity assessment), UNI EN ISO 14971-1:2000 (risk analysis), EN IEC 62304:2006 (software validation) and EN IEC 62366:2008 (human-machine interface). All of that within a UNI EN ISO 9001 Quality System (quality certification) and UNI EN ISO 13485 (medical quality certification).

# Main construction features

- 1 Supporting structure, front and side panels in AISI 304 stainless steel
- 2 AISI 316L, 1.5mm-thick stainless steel washing chamber
- 3 Chamber bottom with central drain and filtering
- 4 Door/s in double thermal glass with internal high resistance argon/krypton
- 5 Vertical door sliding device
- 6 Pneumatic door seal device
- 7 AISI 304 stainless steel pre-heating tank
- 8 Drying unit fitted with bacteriological filter, turbo fan and electric heating elements
- 9 Water condensation unit with total vapour removal
- 10 Washing impeller blades only on the specialised trolley
- 11 Perfectly drainable and cleanable chamber
- 12 High delivery performance single pump
- 13 Ergonomic loading height
- 14 Double data detection systems
- 15 Siemens Simatic ET200S integrated safety, programmable electronic controller
- 16 Siemens TP900 Comfort colour, high resolution touch screen monitor
- 17 Alphanumeric printer on board the machine
- 18 Remote connection-ready
- 19 Modular universal trolley with specialised kits
- 20 Automatic connection between universal trolley and machine

## Range of products EUROWASHER

| Series | Model                         | Capacity (l) | Capacity (trays 1 DIN) | Chambers dimensions (WxHxD mm) | Overall dimensions (WxHxD mm) |
|--------|-------------------------------|--------------|------------------------|--------------------------------|-------------------------------|
| 10     | MDWSD.10.250.1/2VSD.E/SE/E-SE | 258          | 10                     | 575x670x670                    | 1050X2000X812                 |
| 15     | MDWSD.15.350.1/2VSD.E/SE/E-SE | 354          | 15                     | 575X670X920                    | 1050X2000X1062                |
| 18     | MDWSD.18.400.1/2VSD.E/SE/E-SE | 420          | 18                     | 575X795X920                    | 1050X2000X1062                |

### Definition of the model code:

EUROWASHER range for Medical Devices:

Type of equipment - surgical instrument washing and disinfecting appliance

Medical Device - "MD": Hospital Application

Thermochemical - "WSD": Washing and Disinfection Medium

Series - "10, 15, 18": DIN tray loading capacity (dimensions 480X240x50 mm)

Volume litres : Chamber capacity in litres

Execution - "1 or 2": Number of Doors

Door Movement - "VSD": Automatic vertical sliding door

Heating - "E/S/ES/SE": Internal Electric Steam Generator / Steam Exchange / Combi

Example. Model MD.WSD.10.250.2VSD.SE

Medical Device

Thermochemical

10 DIN baskets

250 litres

2 Vertical sliding automatic doors

Internal electric heating and connection for centralised steam line



## Our skills and basic services for total customer satisfaction:

- Training, either at our premises or at the customer's premises
- Testing and quality control
- Process Validations (IQ-OQ-PQ)
- Design for Central of sterilization (CSSD) and central of disinfection (CSDD).
- Management of traceability and remote control of the equipment
- Certificate tools SIT Calibration
- Service contracts "full risk"
- Extended warranties
- Research and development
- Production and Assembly
- Installation and commissioning
- Preventive maintenance
- Market analysis and advice
- Special applications

# Angelantoni Life Science

Angelantoni Life Science (ALS) is sub-wholly-owned holding company Angelantoni Industrie, is among the internationally leading supplier of refrigeration equipment and designing technological solutions in the biomedical field, with a constant commitment to innovation and safety, environmental or biological.

Research centres, hospitals, laboratories, universities, industrial companies of chemical and pharmaceutical sectors are the target Customers of ALS, which covers all the requirements of refrigeration, control of infection (Infection Control) and microbiological safety through a wide range of standard and special products.

Angelantoni Life Science is present in more than 40 countries and can be an ideal partner in Science and Technology.

Angelantoni Life Science, with agents and distributors in over 40 countries, is the ideal partner for the health sector and scientific research. Angelantoni Life Science has a long presence in refrigeration applied to biomedical field, both in research and industrial sectors within the cleaning, disinfection and sterilization with a complete range of equipment and services to meet the needs of sterilization (CSSD), disinfection stations (CSDD) and special applications BSL3 laboratories-BSL4 and treating infected waste (Biohazard).

Our strength comes from the expertise of engineers and handed experience that they have acquired in the design, by the professionalism of the technicians in the production and service, from coordinating manager who complete our team.

Each team member brings their enthusiasm and their scientific and industrial knowledge, in a working environment that stimulates innovation and development.

Angelantoni Life Science invests more than 10% of its turnover in research and development, which involved a multidisciplinary team of scientists that provides clients with cutting-edge solutions in terms of quality, reliability and innovation



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