

The network of specialists, for **AM professionals**



UK

SURF PRO

ECOSONIC - ECS

ECOSONIC CLEANING
THE INNOVATIVE
ULTRASONIC CLEANING

INTEGR^{AM}





SURF PRO ECS

ECS RODS: 20 25 30 40 Khz - Max.3000 W

System type EcoSONIC	Nom. cap. bowl dm ³	Number of sonotrodes	Freq. Khz	Overall sizes max.: WxDxH mm.	Ultrasonic Generator
SurfPRO-25-ECS-1	25	1	20 ÷ 40	1500x700x1800	Titako Top Mini Single 400W 230 VAC 1PH
SurfPRO-50-ECS-1	50	1	20 ÷ 40	4000x2400x2400	Titako Top Mini Single 400W 230 VAC 1PH
SurfPRO-60-ECS-1-SP	60	1	20 ÷ 40	4000x2400x2400	Titako Top Mini Single 400W 230 VAC 1PH
SurfPRO-120-ECS-1-SP	120	1	20 ÷ 40	4450x2650x2400	Titako Top Mini Single 400W 230 VAC 1PH
SurfPRO-120-ECS-2-SP	120	2	20 ÷ 40 + 20 ÷ 40	4450x2650x2400	Titako Top Mini Double 400Wx2 - 230 VAC 1PH

Indicative measurements – subject to modification;

All sonotrodes fitted as standard are: TITANIUM BOOSTER/ROD GETWAVE 20 KHZ Ø52 H223mm

Final extension «-D» complete with drying option «Dry»

The transducers or «**ECS RODS**» made of titanium, are designed to offer maximum power with a small footprint. The high efficiency and radial sound uniformity generated by this brand new transducer, ensures maximum cavitation and washing performance, in a very short time.

Final letters: - ADR **Automatic Demineralized water refill.**
Only for version - SP

Final Letters: - DSS Dry Saturated Steam version, with SurfPRO **phases and PRE-WASH supported by dry saturated steam, only for version - SP**

SURF PRO **ECS** ONE RANGE OF 4 STANDARD MODELS WITH 3 CYCLE PHASES

WASHING

RINSING

DRYING

All SurfPRO ECOSONIC ECS systems offered by **IntegrAM** can work on component loads combined with special QF finishing vectorial "media" that allow three-dimensional movement within the working bowl. The use of QF "media" is particularly useful in all cases where the components are particularly delicate or cannot be processed in "piece by piece" mode.

Thanks to a carefully designed software, the automatic washing processes can be carried out using previously programmed recipes, according to specific needs - the parameters that can be managed are therefore, for each phase (optional "-D" drying): ultrasonic frequencies, vibratory frequencies tank, A/ R tank vibratory sense, times mode (Stop & Go or continuous), times / intervals, temperatures, and more;

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SURF-PRO-25-ECS



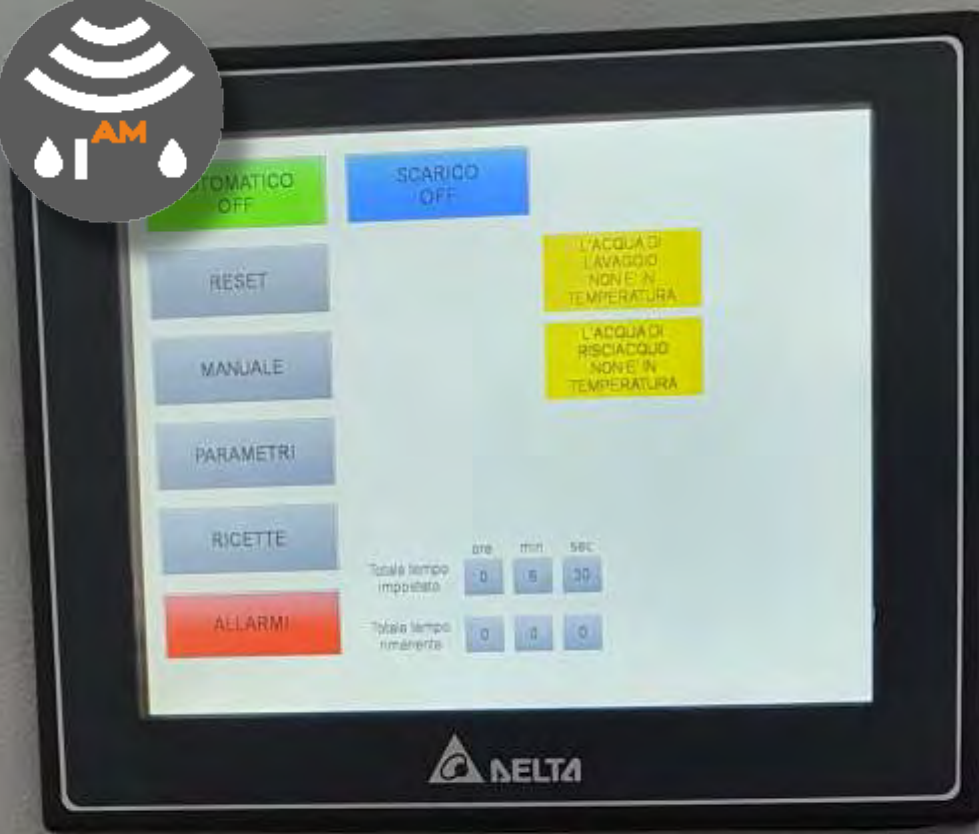
ECO SONIC

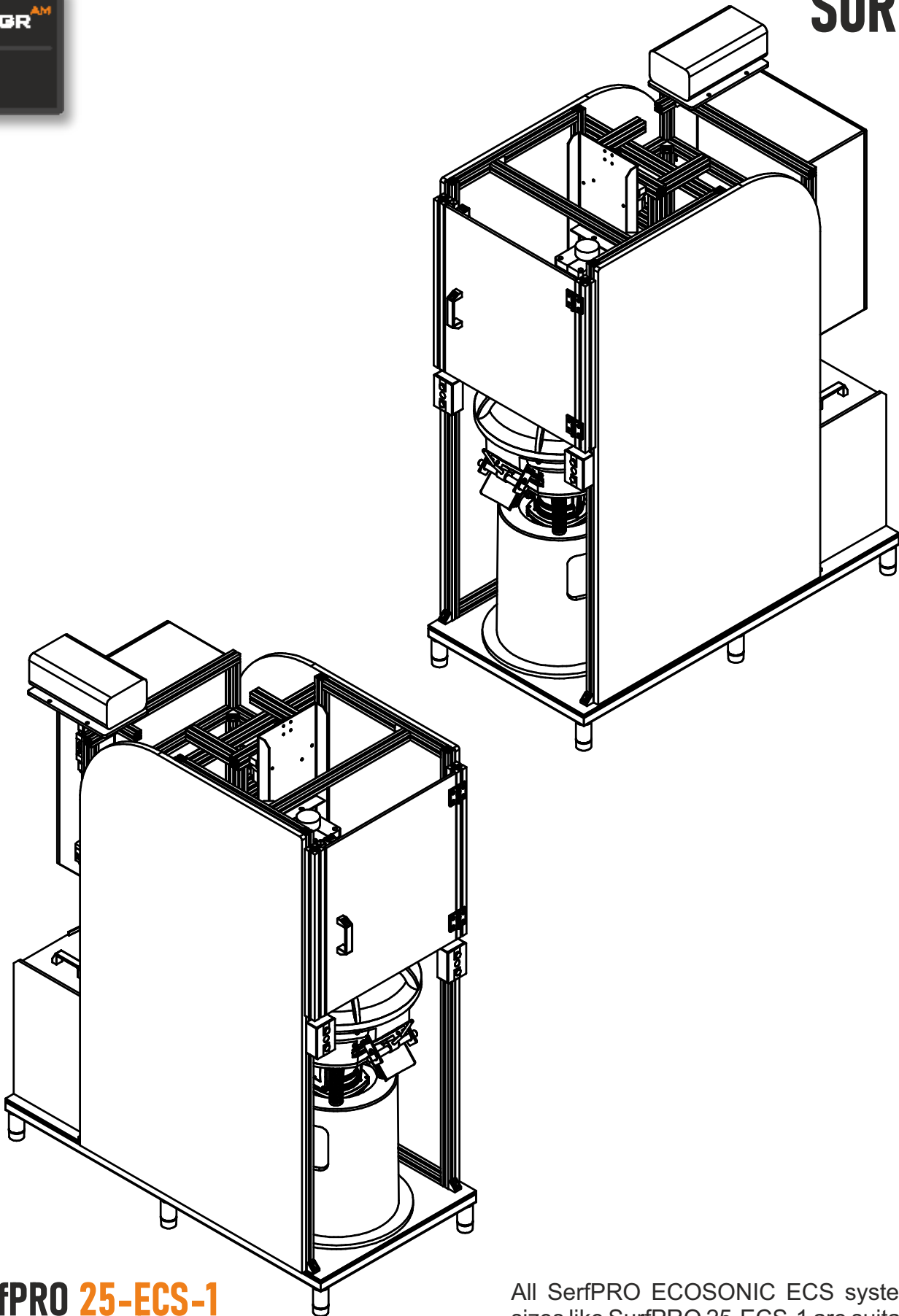
SURF-PRO



PATENTED

SURF PRO ECS





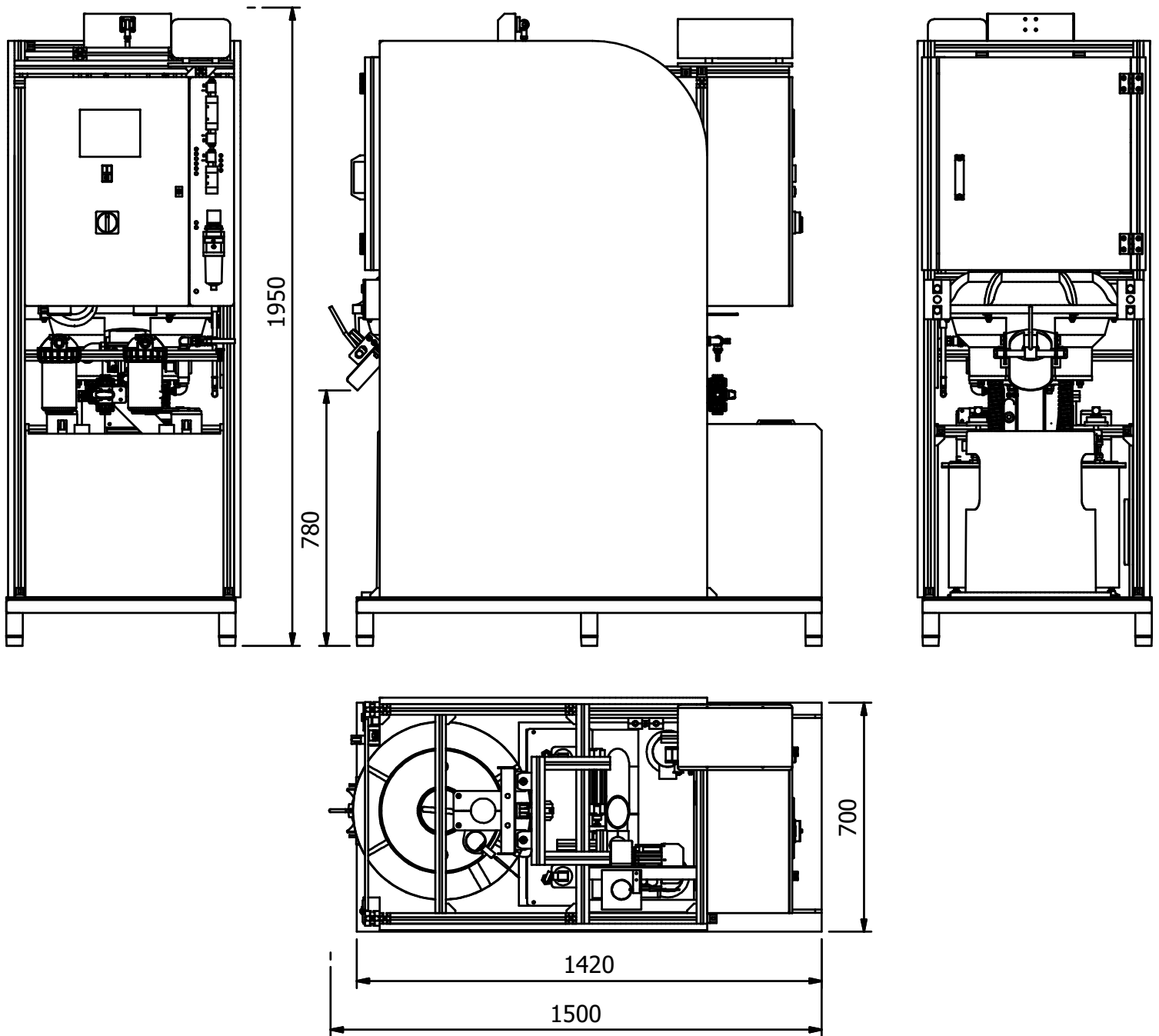
SurfPRO 25-ECS-1

All SurfPRO ECOSONIC ECS systems of small sizes like SurfPRO 25-ECS-1 are suitable for those who are looking for a washing solution that takes up a minimal space.



SURF PRO

ECS



SurfPRO 25-ECS-1

Indeed, thanks to the separate heated washing and rinsing tanks, to the pumps system and the intelligence of the control software, the small 25-litre machine is able to perform important daily tasks, carrying out a fair series of work cycles with outstanding efficiency.

SURF-PRO ECOSONIC ECS
DUAL-FREQUENCY
AN ADDED VALUE
WITH PRE-WASH + DSS SANITIZATION

PRE-WASH

WASHING

RINSING

D.S.STEAM
SANITIZATION

DRYING

Only the SurfPRO ECOSONIC ECS systems offered by **IntegrAM** with DUAL-FREQUENCY and dedicated recycling tank have a hedge over any classic washing system.

Indeed, taking advantage of the specific elastic and vectorial «QF» media, these systems are able to perform a «Surf-Pro» pre-wash on components with pre-treatment needs and where the waste generated can be relaunched to a collection point external and unrelated to the washing and rinsing tanks.

This allows to manage alternative, more complex and complete processes than just washing and rinsing, including, where required, the ultrasonic cavitation action, with obvious advantages in surface treatment strategies. **Last but not least, the dry saturated steam sanitization, with the aid of 2% H₂O₂, assures 99,999 sanitization properties to the final clean surface.**



SURF PRO ECS



All SurfPRO ECOSONIC ECS systems offered by **IntegrAM** can be customized and get from the considerable portfolio of solutions adopted and presented in this brochure.

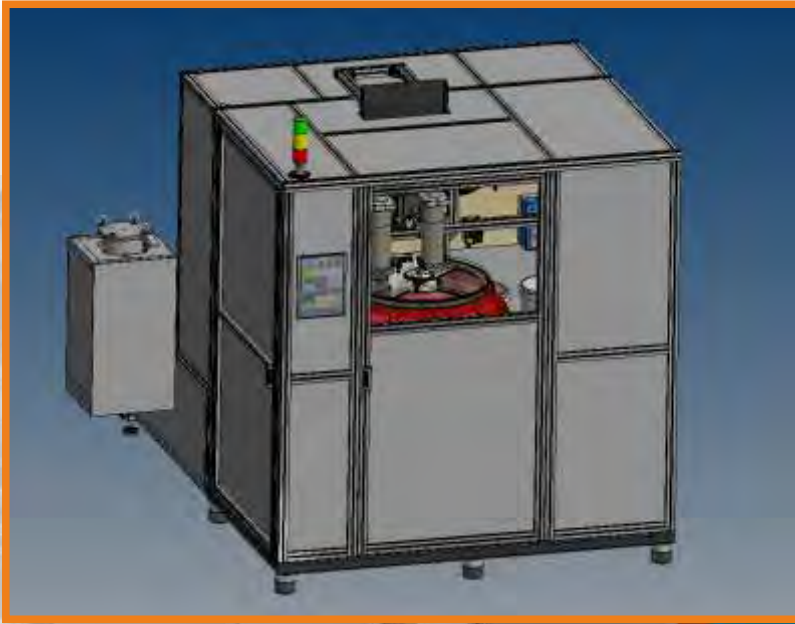
The standard capacities can be increased with larger toroidal tank models.

The used ultrasonic frequencies can be customized according to the specific cavitation needs, [spacing from 20 to 40 kHz - max. 3000 W](#).

Every new challenge inspires us to offer competitive, efficient and innovative solutions.

Our test laboratory is available to evaluate new benchmarks and solutions.

Let's talk about!



SurfPRO 120-ECS-2

All SurfPRO ECOSONIC 120-ECS-2 systems offered by IntegrAM are equipped with two sonotrodes, respectively 20 and 40 kHz, connected to an integrated generator in the mainboard and in the management software, in order to be able to use, in the various phases of the process, one or the other cavitation frequency. Ultrasonics can be used both in the pre-wash and in the washing and rinsing phases with clear operational advantages on components with pendulous micro-burrs or even in threaded holes or blind holes - subject to evaluation by means of specific process tests.

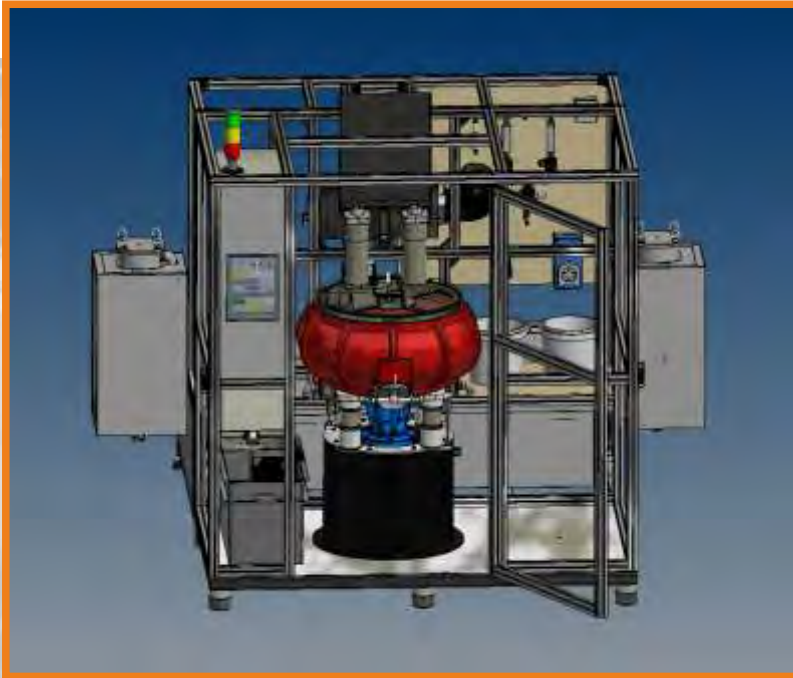


SurfPRO 120-ECS-2

All SurfPRO ECOSONIC 120-ECS-2 systems offered by **IntegrAM** are equipped with two heated and filtered tanks, one for washing and the other for rinsing - each of them with the following characteristics:

200 litre water tank made of 20/10 stainless steel complete with:

- Drawer pre-filter. 2 mm diameter filtration for the water that returns to the tank
- Micro-filtration on the delivery pump, bag filter, filtration degree 50 μ
- 0.75 kW vertical pump with immersed stem
- N.3 electric heaters 4 kW each, maximum water temperature 60°C
- PT100 probe for temperature control
- Minimum level probe
- Inspection manhole cover for tank bottom cleaning
- Water loading with ½" manual valve
- Water unloading with 1" manual valve

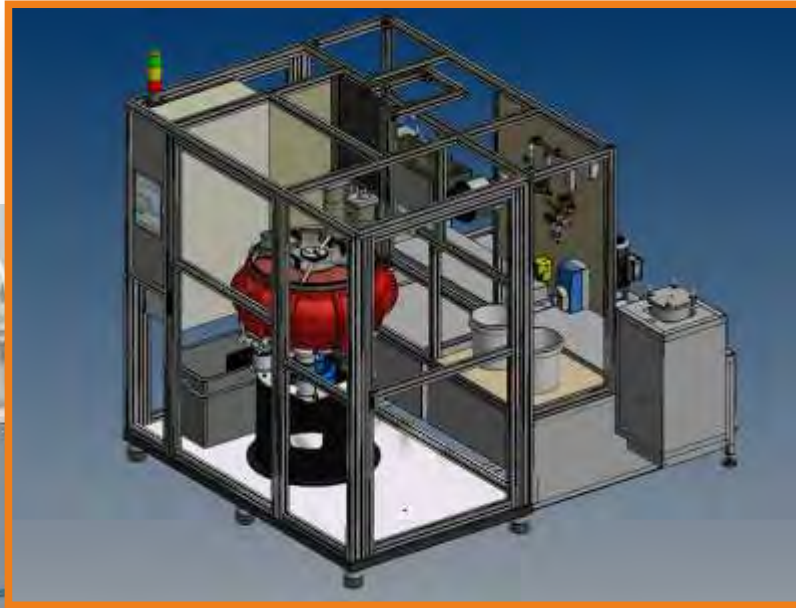


SurfPRO 120-ECS-2

All SurfPRO ECOSONIC 120-ECS-2 systems offered by **IntegrAM** are equipped with recycling tank for the wastewater coming from the pre-wash process. This allows not to pollute the washing and rinsing tanks in vain, in order to ensure the maximum output and duration levels, while the greater polluting can be taken away from the components treated in the system before reaching more refined phases of the automatic process.

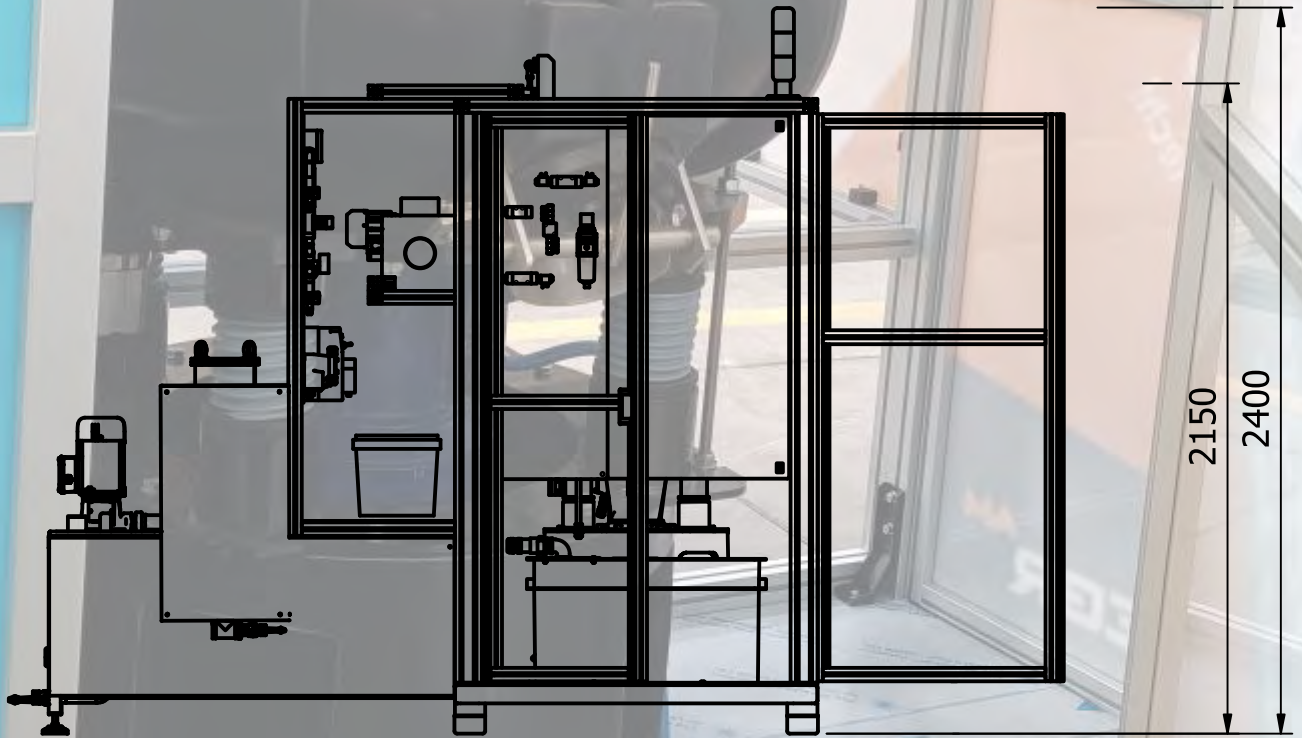
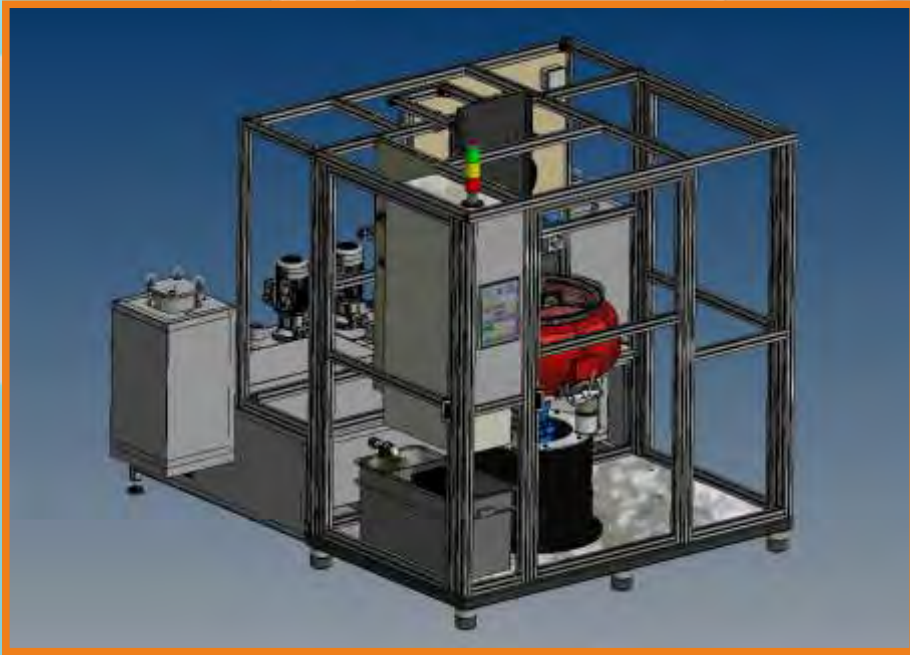


SURF PRO ECS



SurfPRO 120-ECS-2

All SurfPRO ECOSONIC 120-ECS-2 systems offered by **IntegrAM** are complete with a cabin with the dual purpose of soundproofing the process and simultaneously isolating the main system from the outside.

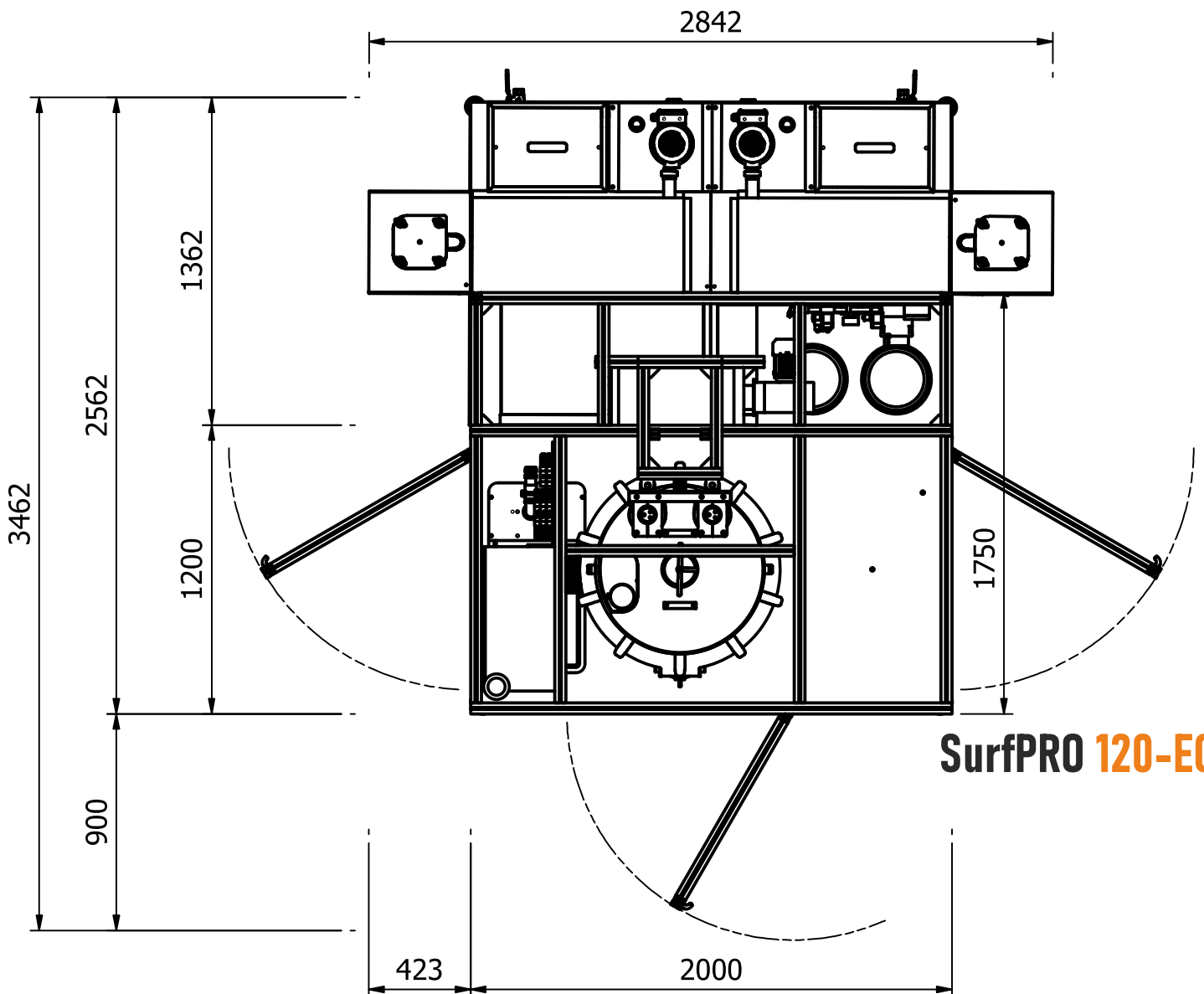
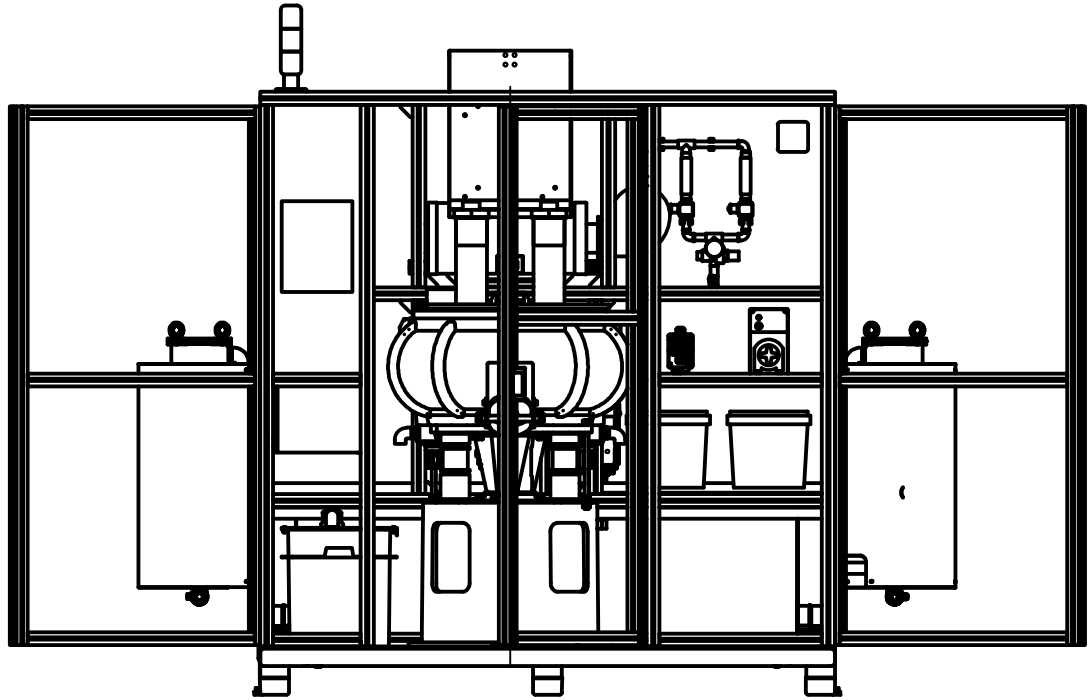


SurfPRO 120-ECS-2

All SurfPRO ECOSONIC 120-ECS-2 systems offered by **IntegrAM** are complete with internal control board and external HMI touch panel.



SURF PRO ECS



SurfPRO 120-ECS-2

IsoPROPULSIVE LAB TEST **PROTOCOL 1.0**

Process Steps

Pre WASH

WASHING

RINSING

SANITIZATION

Type of additive
IsoPROPULSIVE

RFC-120

BIO-PROP-120

BIO-GEL-120

RFC-120-IP

RFC-120-IP-H

RFC-120-IP-M

RFC-120-IP-L

IsoPROP-H

IsoPROP-M

IsoPROP-L

HP 2

The **KEY FACTOR** of a preliminary LAB TEST on components, like in this example, produced in SLS process with Additive Manufacturing, is to follow a precise **PROTOCOL**.

The LAB TEST **PROTOCOL** must assure the preliminary set of experiments to:

1. determine how many cleaning steps may be required for the kind of components;
2. which kind of **CLEANING ADDITIVES** and their correct dosage;
3. how long each phase must be active;
4. does the cavitation acts the required cleaning action on the surface? At wich power?

To provide almost all the main replies and the guideline to the definition of the EcoSONIC System hardware required for each family of products - the LAB TEST is very helpful.



IsoPROPULSIVE LAB TEST **PROTOCOL 1.0**



WASHING LAB TEST

Example of guideline, with dental components

The cleaning and sanitization criteria for dental components with ultrasonic systems, in accordance with **ISO/UNI** standards and in environments such as grey rooms, are very important to ensure safety and quality in the dental sector. Here are some key points to consider:

General principles:

- **Dirt removal:** The main objective is to effectively remove organic and inorganic residues from dental instruments or components before sterilization.
- **Corrosion prevention:** It is essential to use cleaning solutions compatible with the materials of the dental components to avoid damage.
- **Process effectiveness:** The cleaning and sanitization method must be validated to ensure a significant reduction in the microbial load.

Ultrasonic systems:

- **Specific cleaning solutions:** Specific solutions for ultrasonic cleaning are used, often at neutral or slightly alkaline pH, formulated to remove dirt without damaging the components.
- **Times and temperatures:** Ultrasonic cleaning cycles must follow times and temperatures recommended by the ultrasonic tank and detergent manufacturer to ensure effectiveness.
- **Tank maintenance:** The ultrasonic tank must be cleaned and sanitized regularly, following the manufacturer's instructions. The cleaning solution must be changed frequently.



Example of standards, with dental components

ISO/UNI standards:

- **ISO 15883:** This European standard specifies the requirements for thermal cleaning and disinfection systems for medical devices. It establishes treatment cycles, quality controls and process validation.
- **UNI EN ISO 17664:** This standard provides guidance for the preparation of medical instruments for reprocessing, including cleaning. It indicates the importance of following the device manufacturer's instructions.
- **UNI EN ISO 17665-2:** This part of the standard focuses on the requirements for moist heat sterilization and emphasizes the importance of the previous cleaning phase.

Grey Room Type Rooms:

- Grey rooms are controlled environments to minimize particle contamination. Although not as sterile as cleanrooms, they do require rigorous cleaning procedures.
- Surface cleaning: Grey room surfaces should be cleaned regularly with specific detergents and low particle wipes.
- Environmental control: Parameters such as particle count are regularly monitored to ensure the environment remains within established limits.

In summary, to clean and sanitize dental components with ultrasound in compliance with standards and in a controlled environment, it is necessary to:

1. Use compatible cleaning solutions and follow the manufacturer's instructions for times and temperatures.
2. Ensure correct maintenance of the ultrasonic tank.
3. Follow the guidelines of the relevant ISO/UNI standards, in particular ISO 15883 for the cleaning and disinfection process.
4. Maintain a clean and controlled environment such as a grey room, with regular cleaning procedures and environmental monitoring.

It is important to consult the specific regulations and recommendations of the equipment and detergent manufacturers to implement correct and effective procedures.



DSS SANITIZATION LAB TEST

IsoPROPULSIVE LAB TEST PROTOCOL 1.0



About our TEST LAB and SYSTEM DEMO TRIALS

On one hand, there is the TEST LAB

Here we are not in a grey room, but aiming to have a laboratory with high level of cleanliness, and prior to start any trial with a new component, we act a sanitization of all the laboratory by means of saturated dry steam + 2% of H_2O_2 . In other words, all the objects and surfaces that become in contact with the components to be cleaned, are sanitized with DSS+2% of H_2O_2 [Italian Ministry of Health prescription (1) to get 99,999% sanitization].

- Unlike it happens in the real cleaning EcoSONIC System, the laboratory sonotrode has just one frequency to generate cavitation, corresponding to 20 kHz - that may be adjusted to the required power and time.
- Unlike it happens in the real cleaning EcoSONIC System, the laboratory trials are normally made at environment temperature, not with controlled heated tanks;
- Unlike it happens in the real cleaning EcoSONIC System, the trial in a glass beaker of 0,5 to 1 liter volume, is static, whilst in the working bowl of the EcoSONIC System, the operative dynamics are moving threedimensionally the components continuously in clockwise sense, to be exposed periodically to the CAVITATION ENERGY of one or the other (Dual Frequency) of the two **ECS-RODS** available, for example, in the **SurfPRO-120-ECS-2-SP-DSS** model;
- Unlike it happens in the real cleaning EcoSONIC System, the LAB TEST condition depends on a cavitation at 20 kHz, whilst in the real cleaning EcoSONIC System, for example, in the **SurfPRO-120-ECS-2-SP-DSS** model, we can alternatively use one **ECS-ROD** of 20 KhZ or the second **ECS-ROD** of 40 kHz in every phase of the cycle and/or the recipe;
- Unlike it happens in the real cleaning EcoSONIC System, the LAB TEST condition depends on an «environment» temperature between 20°C and 25°C, whilst the washing and rinsing tanks are heated up to 60°C.
- Also the DSS Sanitization Lab Test happens with an open beaker, whilst in the system the bowl is closed.

In conclusion, when the surface achieved on a few samples by the LAB TEST is compliant, the conditions inside the EcoSONIC System, to work with biggest volumes of parts, are always much better, thus assuring the best possible dynamics to achieve a TOP QUALITY CLEANING!

(1) Circular from the Ministry of Health - 05_22_2020 - Prot. n. 17644 - Sanitization procedures

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This brochure is for guidance only. Its content can change depending on the development of the product.
La presente brochure è da considerarsi puramente orientativa. Il contenuto potrà variare in conseguenza dell'evoluzione dei prodotti.

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