MedFreshe™

UNG
Since 1953

BIOMEDICAL WASTE MANAGEMENT SYSTEM

ISO 9001 Certified

ISO 13485 Certified

CE

GMP COMPLIANCE

MAKE IN INDIA

INDIA

- **Integrated Sterilizer & Shredder (ISS),** is a steam sterilizer with an integrated shredder, designed for on-site conversion of biohazard waste in hospitals and clinics, complying to the EU and WHO recommendations.
- The stainless steel vessel is fitted with a motor driven shaft, with powerful shredding/crushing Blades/cutters that can rotate in two directions to reduce the size and volume of the waste down to 20% (approx.). The motor is sufficient to rotate the blades/cutters for various operations and protect against jam. Shredding is important as it enhances the steam penetration therefore improves the overall sterilization results.
- The steam is internally produced by in inbuilt steam generator, supplied by water purification and draining system. This happens after the pre vacuum stage, which helps in faster heating. The vessel is constructed with internal sprinklers for automatic cleaning.
- The entire process is automatic, including the opening and closing the door, turning and rotating of the vessel and the sequences of shredding and sterilization, unloading of the waste, etc.
- After treated in the ISS, the waste is sterile. The liquid components of the waste are steamed, re-condensed and drained to a municipal sewer. As the waste is dehydrated, there is no risk of contaminated wastewater. The waste is rendered, fragmented, non-toxic, largely solid and dry, unrecognizable and non-reusable and therefore safe to be disposed as regular municipal waste.

1. PRODUCT DESCRIPTION

- The ISS performs both size & weight reduction and sterilization in a single vessel. The vessel is fitted with powerful shredding / crushing blades/ cutters which can rotate in two directions inside the vessel to reduce the size and volume of the waste.
- The ISS operates with saturated steam as a sterilizing agent, and has a temperature/ pressure range, which can be set. The ISS is designed as a Large Steam Sterilizer in accordance with EN285. The device is not intended for use in the presence of flammable mixtures.

2. FEATURES

CHAMBER

- The device is constructed of durable stainless steel (316 L) and is heated by saturated steam supplied by the building control source. All metal parts in the inner surfaces are made of stainless steel.
- The vessel is supported by two arms, which are also used to rotate the vessel for loading (45°), treatment (0°) and unloading (180°) positions, if required.
- The chamber is constructed with internal sprinklers for an automatic cleaning process.

Door

- The ISS's chamber is equipped with one door, provided with an automatic locking mechanism, activated by compressed air, preventing the opening of the door by a safety lock.

Shredder

- The vessel(s) is equipped with a multipurpose multidirectional shredder/crusher blades/cutters on the bottom, to ensure use of the full volume of the vessel(s). The blade is made of SS and high carbon steel with hardened cutting edges.

Control System

- A microprocessor based control system, state of the art "Freescale" technology, automatically controls all programs including the sterilization cycle. The system includes a digital touch screen graphic display, communication, self and remote diagnosis and PC connection for external documentation and printing. It ensures a reliable, safe and user-friendly operation. While the power is off, the non-volatile memory keeps the status of the Sterilizer, and the real-time clock, driven by its own back-up battery, keeps running the date and time.

Energy Saving Mode

- The ISS is equipped with an Energy Saving Mode which is activated when the unit is not used after a certain period of time. This Mode saves energy and ensures safety of operation and is thus environmental friendly.

Alarms

- Depending on the state of the input and of the installed accessories, the controller is capable of providing various audio/visual alarm.

Sterilization and Test Cycles

- There are specific factory set cycles and can also have user-specified cycles on request.

Cycle Documentation (Printer)

- For documentation of processes, inbuilt printer is provided.

Steam Generator

- The steam generator is built-in into the housing and automatically controlled by the electronic system.

3. SILENT FEATURES

Reverse-Osmosis

- This water purification system uses a high quality booster pump, which can provide water even under low water pressure area.

Data Collection

- Sterilization cycles' data can be collected on a SD Card/USB through an optional slot.

Air Compressor

- The Compact model features a special soundproofing system made up of a metal soundproof panel, painted with epoxy paint, which guarantees remarkably low noise levels plus the total elimination of vibrations.

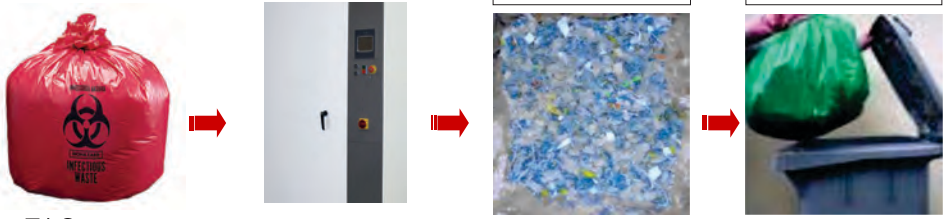
Advantages:

- Cost Effective: reducing cost of transport, reducing cost for treatment and maintenance.
- Unrecognizable waste after treatment.
- Shredding and Sterilization can also happen at the same time, therefore high level of sterilization.
- No harmful effect or reject.
- Automatic door prohibits unauthorized interruption.
- Reduces volume up to 80-85%.
- No Unpleasant Odors.
- No Toxic Chemicals.
- Full destruction of Sharps and Containers.
- Single step Loading, Cutting, Sterilization and Unloading.

THE PROCESS:

ISS performs both shredding and waste steam sterilization in a single vessel.

- **LOADING**:
  Waste can be loaded into the chamber without opening the bags. Select the required waste cycle.
- **CREATING VACUUM:**
  The air is removed from the chamber through the biohazard filter with the help of the powerful vacuum pump.
- **SHREDDING:**
  The chamber/vessel is fitted with a shredder that can rotate in two directions to reduce the size of the waste. Shredding is important as it enhances the steam penetration.
- **HEATING UP TO STERILIZATION:**
  Steam is introduced into the chamber until the sterilization temperature is reached.
- **STERILIZATION, EXHAUST AND DRYING:**
  When the unit reaches sterilization temperature, it starts sterilizing for the desired time. During the exhaust stage, the steam is being removed from the chamber and the drying is done by pushing air inside.
- **UNLOADING THE WASTE:**
  The fragmented and non-toxic waste is unloaded from the chamber.



Technology approved by:

Central Pollution Control Board (CPCB)

• Paper • Plastics • Linen • Metals
• Glass • Gauze • Needles/Syringes/Sharps
• Liquids • Dialyzers, Etc.

FAQ:

S. No.	Question	Answer
1	If it can handle all types of hospital waste?	Yes, including: A) Plastics, B) Needles and Syringes, C) Cotton items, such as Gauge, Cotton, Blood Soaked, etc. D) Sharps of all kinds, E) Small glass items, F) Linen, etc. Radioactive waste, Heavy metals & glass (big size)to be excluded. Human body parts can also be treated if law permits.
2.	Is segregation required?	No special segregation is required, but if required by local authority rules and terms should be adhered to and as per user manual.
3.	Normally plastic is processed for reusing. If we put all the waste together, how would we reuse the plastic?	We suggest segregating the waste and processing accordingly. If only plastic is treated in a cycle the output is plastic, hence can be used for recycling.
4.	What is the frequency of replacement of blades?	6 months to 1 year depending on the duration of shift and loading material.
5.	What is during of each cycle?	The duration time of the cycle can be customized as required by the user it also depend on the capacity of the machine. It ranges from 20min - 45min.

ISS AC 575

ISS AC 575(2X)

ISS AC-575 Premium

ISS 300L/500L

- Data, specification & size given are approximate and for guidance only. • Due to continued R&D we reserve the right to change them without prior notice.
- Pictures shown here are for illustration purpose only.

ISS 25L

Different models available of size ranging from 25 ltrs - 1500 ltrs

SPECIFICATIONS:

Model ISS	ISS 25L	ISS AC-575	ISS AC-575 Premium	ISS AC-575 (2X)	ISS 300L	ISS 500L
Chamber volume	25 L	150 L	150 L	300 L	300 L	560 L
External dimensions W x H x D	1020 x 900 x 680 mm	1290 x 2150 x 2039 mm	1290 x 2150 x 2039 mm	2600 x 2150x 2050 mm	2000 x 2150 x 2000 mm	3000 x 2000 x 2000 mm
Chamber door	Automatic door with advanced locking and safety features					
Sterilization Temperature	upto 140°c					
Steam Source	Built-in steam generator (with a possibility of external steam connection)				Stand alone steam generator (with a possibility of external steam connection)	
Steam Pressure (Relative)	2.76 Bar (Can be set as required)	3 Bar (Can be set as required)				
Compressed Air	6.0-8.0 Bar (87-116 psi)					
Water Source	Filtered Tap Water {RO provided with system (Integrated)}					
Water Pressure	1.0-6.0 Bar (14.5-87 psi)					

Product description:

- The inner shell, door and jacket are designed for a working pressure and full vacuum.
- It has pre vacuum system to ensure maximum efficiency.
- During the sterilization cycle the control system measures, controls and shows in digital display: current time, selected cycle, start time, chamber temperature, chamber pressure, cycle stages, end time and cycle / sterilization status, etc. All this information is also printed automatically or can be stored in an external storage device.
- Multiple loading points is one machine can be used in combination or individually.
- Alarms: Door Unlock, Temperature/Pressure Error, Low/High Temperature, Low/High Pressure, etc.
- Temperature range: Can be set upto 140 degree Celsius / 136 for 25L..
- Pressure range: Can be adjustment or recommend.
- There can be upto 20 user specified cycles on request.
- Printer is integrated.

Standard Accessories:

- RO System.
- Integrated Printer.
- Silent Air Compressor.
- RS 232 Communication Port.
- Cart for collection of treated waste (not for 25L).
- Bag handle for collection of treated waste (not for 25L).

Optional Accessories:

- SD Card & Reader.
- HMI Software.

Required Utilities:

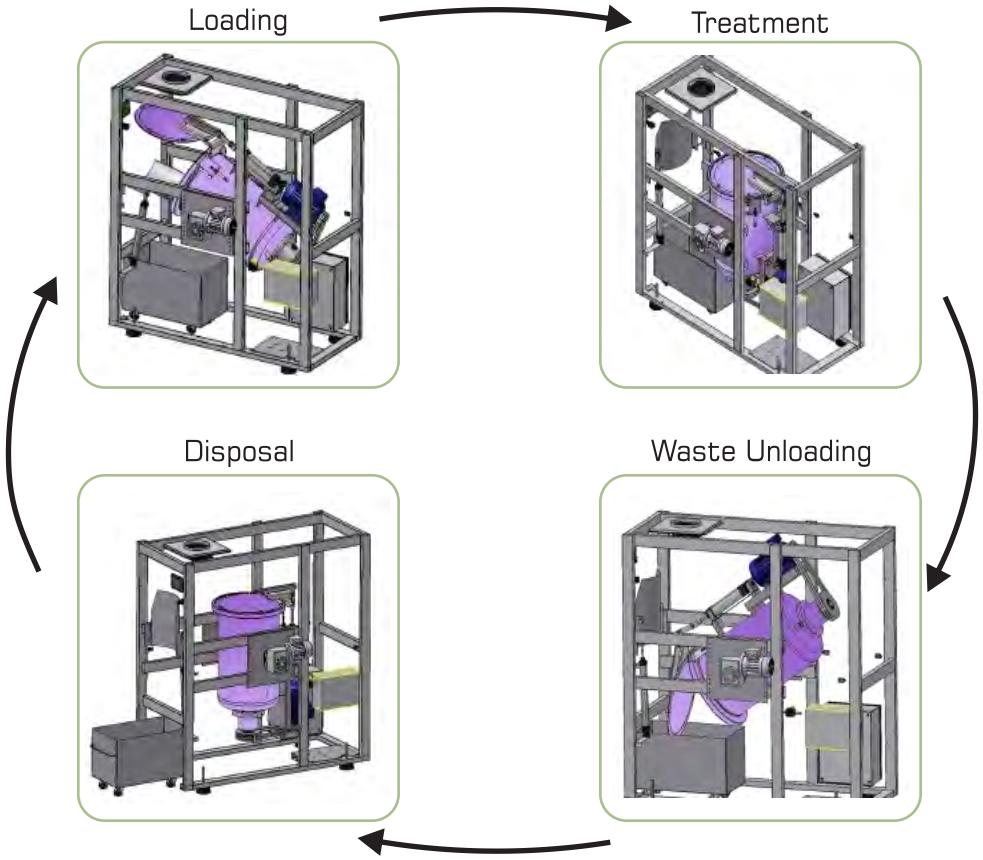
- Electrical: 400V-440 V | 50/60 Hz | 3 Phase.
- Water: Cold water - ½ '' connection.
- Drain: 2"-4".
- Compressed Air: 6 bar (Provided with the System).
- HVAC: Standard computer environment, 10 air exchanges / hour in room.
- Connection to building ventilation.

Communication System

PC Software is available in order to collect and document the sterilization programs and results.

Standards:

- Spore Test Certification.
- Machinery Directive 2006/42/EC.
- Pressure Equipment Directive PED 97/23/EC.
- EN 60204-1 Safety of machinery- Electrical equipment of machines - General requirements.
- EN 61010-1:2010 + IEC 61010-1 : 2010 + Corr1:2011
- EN 61000-6-2 Electromagnetic compatibility.
- ISO 9001 & ISO13485– Quality Management System.
- European CE from Notified Body.



Waste Collection & Segregation

Waste Treatment in integrated Sterilizer & Shredder (ISS)

Disposal of Treated Waste

UNG
Since 1953

OUR SOLUTIONS

• Pneumatic Waste & Laundry Collection System (PWLCS) • Pneumatic Tube System (PTS) • **Bio-Medical Waste Treatment System (ISS)**
• Central Sterile Supply Department (CSSD) • Modular OT / ICU / Emergency Room / OT Integration • Medical Gas Pipeline System (MGPS)
• Oxygen Generation System (OGS) • Nurse Call System (NCS) • Automated Storage & Retrieval System (ASRS) • Burns Ward & Equipment
• Hospital Furniture / OT Table & OT Lights • Curtain Track / IV Track / Wall Guard • Smart Bin System (SBS) • Electric Track Vehicle (ETV)
• Automated Pharmacy Dispensing System (APDS) • Hospital Consultancy & Designing on Turnkey Basis

Manufacturing Divison:

MedFreshe Pvt. Ltd.

UNG Tower, 3rd Floor, Building No. 2, Central Market,
Punjabi Bagh West, New Delhi - 110026, INDIA
Phone : (+91-11) 4545 9999 (Hunting Line)
E-mail : info@medfreshe.com, sales@medfreshe.com
Website : www.medfreshe.com
MedFreshe | MedFreshe
MedFreshe | unisonnarulagroup

Exports Divison:

Närulä Exports

(Government Recognised Star Export House)
An ISO 9001:2015 / ISO 13485:2016 Certified Company
UNG Tower, 2nd Floor, Building No. 2, Central Market,
Punjabi Bagh West, New Delhi-110026, INDIA
Phone : (+91-11) 4545 9999 (Hunting Line)
E-mail : marketing@narulaexports.com
Website : www.narulaexports.com
NarulaExports | narulaexports
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