INHALATION THERAPY PLANT

Mod. IMT19

Medical device intended to carry out individual thermal treatments according to the consolidations and traditional inhalation and irrigation methods defined by the UNI 10865:2000 Standard “Thermal treatments. Service”requirements. The IMT19 is formed by modular stations and enclosed within it the components for intercepting, controlling and regulating the water and pneumatic carriers for the delivery of therapies.

Each implant can be customized for the following aspects:

- **Type of therapy**
- **Combination of two or three different therapies on each individual treatment site**
- **Programmable duration of therapies with 5 different times**
- **Creation of the modular system with care places on a single side or two sides**
- **Number of seats making up the entire system**
- **Therapy management system (manual or automatic)**
- **Number of thermal waters**

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The load-bearing structure is made of 304 stainless steel and the covers are made of thermoformed plastic material (PMMA+ABS) resistant to heat and corrosion, with integrated sink and separators between the care places to guarantee confidentiality between patients. The doors of each care station are hinged to the frame and can be opened from right to left and the separators can be removed. This allows inspections and maintenance and cleaning operations to be carried out in a short time and without hindrance.
Modular construction facilitates installation, verification and maintenance operations and reduces plant engineering costs and of the related necessary masonry works.
Each care place has a sink, where the drains of thermal water resulting from the delivery of therapy are collected. The washbasin is carried out through three nozzles with mains drinking water (pp pipe) and managed automatically, via solenoid valves (one for each treatment station), at pre-established intervals during and at the end of the treatment or can be activated manually by the patient himself via button of dispensing.

The thermal water pipe is made of PVDF material that can be entirely sanitized with steam and is suitable for food contact. Polycarbonate balancing vessel with automatic loading and unloading managed by a capacitive sensor, not immersed, with automatic restoration. The vessel is inspectable for possible cleaning and houses a temperature probe on the lid. Derivatives with venturi system for each type of treatment. Continuous recirculation of thermal water, to ensure that the required temperature is maintained and to avoid water stagnation. (For systems fed with different thermal waters, the pipes described above are one for each type of water).

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The steam pipe is made of AISI 316 stainless steel, insulated, equipped with a delivery filter and a condensate drain on the return. There is a sanitization and pipe washing solenoid valve and solenoid valves serving each CU type care place. All solenoid valves are equipped with a shut-off tap to avoid completely closing the system during maintenance.

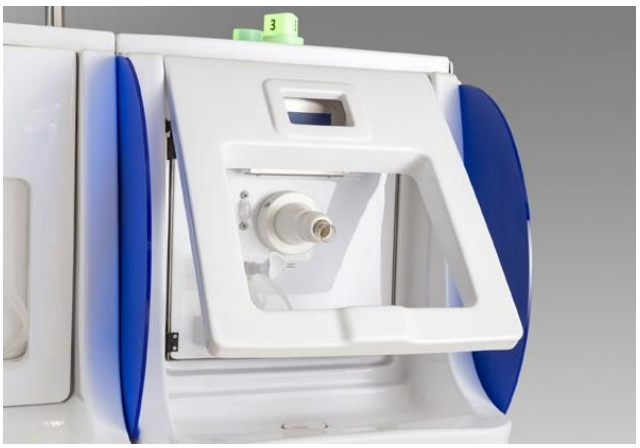
The compressed air line is made in RILSAN piping with pressure reducer and pressure gauge, and solenoid valves serving each therapy that uses the compressed air carrier on site care.

The drain pipe is made of self-extinguishing PP material and includes both the flushing of washing water and thermal water used for treatment.
The device is managed by an electronic board called master positioned at the head of the module, which manages the switching on and off of the device, the sanitization cycle, the filling and emptying of the internal pipes. The master card communicates, through a data line, with the electronic cards of the individual care stations. The latter manage the at-tuations and thus the delivery of treatments. The care place management framework consists of a microprocessor board with an alphanumeric display (16 characters by 2 lines visible area 99x24), a membrane keyboard with four keys and a magnetic command for manual enablement of the type and time of care. The display shows the operation status of the care place and, during the execution of the therapy, the remaining time. Each care station is connected to an LED board, housed in a numbered beacon, which takes on different colors based on the operating status of the care station: free, booked, occupied, washing, sanitization.
You can connect the device to a PC, via serial line, and install the CICO_INALA software in order to allow the automated remote management of the inhalation department. With such management, the software allows:

- **The reservation of the first available treatment place for the therapy and for the required duration, using an algorithm that evaluates the working time of each place, in order to align the operation of the equipment in a homogeneous way.**
- **The display on the monitor of the situation of free, booked and occupied care places.**
- **The on-site light signaling takes care of the booking with automatic shutdown at the start of the treatment.**
- **Preparation of statistics relating to the use of care places and workflow.**

Sanitization and washing

Each system has an automatic management system inside for washing and steam sanitization of thermal water pipes, from the inlet shut-off valve to the terminal of use. Thermal elevation of all parts via forced circulation of steam at low pressure for a set time, reduces any bacterial colonies present in the thermal water to values below the legal limits. The temperature expressed in °C reached inside the thermal water circuits of each module, constituting the inhalation equipment fleet, is visible on the monitor via graph.
The program stores the data with graph storage indicating the day and time when sanitization was carried out, as well as the temperature value reached in degrees °C by each module. The program involves carrying out the washing cycle and the sanitization cycle individually. Programming on a PC allows you to set per-sonalized times for the activation of the various phases which are constantly displayed on the service monitor. The flexibility of the system allows the cleaning and hygiene of the system to be managed with better results according to the needs of the customer.



TREATMENTS EXECUTABLE

Thermal aerosol (AT)

Thermal aerosol is an inhalation technique whose main components are flowing thermal water and compressed air.
The crushing of water takes place in a spray chamber (ampoule) by a jet of compressed air at a pressure of 1.5 bar, which generates a colloidal suspension whose grain size ranges from 2 µm to 10 µm. Diameter particles greater than 3-5 µm stop in the upper airways, while the lower ones reach the lower respiratory districts. Each AT-type treatment place has a consumption of 13 l/min of compressed air at a pressure of 1.5 bar and 1 liter of thermal water for 10 minutes of therapy.
The care place is complete with a thermal water nebulizer made of material suitable for steam sanitization, a fog humidity regulator, an air-water pisper made of removable non-toxic material and a silicone nebulizer-tore-mask connection tube.

Wet Hot Inhalation (CU)

Wet hot inhalation is an inhalation technique whose main components are flowing thermal water and saturated water vapour.
The steam-water mixture is projected towards the patient (direct jet) placed with his mouth open in front of the appliance at a specific distance (recommended distance from 25 cm to 30 cm). The hot fog (between 35°C and 50°C) due to the size of the particles (from 10 µm to 100 µm) reaches the upper airways, the trachea and the large bronchi.
Each CU type treatment place has a steam consumption of approximately 1 kg/hour at a pressure of 1.7 bar and 1 liter of therma l water for 10 minutes of therapy.
The care station is complete with steam conveyor in non-toxic plastic material with adjustable glass terminal and internal channel for condensation and exhaust recovery, support with fog regulation ring (wet or dry), steel pisper and venturi effect cap made of non-toxic vapor-resistant material.

Sonic Thermal Aerosol (ATS)

It is an inhalation technique used with the aim of increasing the penetration power of the aerosol into the airways, especially the upper ones; in practice, a vibrator is added to the classic equipment which gives the particles oscillations at a frequency of approximately 100 Hz.
The consumption of thermal water and compressed air and the equipment are the same as the AT care station, in addition a macro vibration generator is inserted.



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Ionic Thermal Aerosol (ATI)

The particles produced in the aerosol receive a negative electrical charge from a generator placed at the outlet which, in addition to being a carrier, is also used for therapeutic purposes. This technique allows for greater particle penetration.

Consumption of thermal water and compressed air and the equipment is the same as that of the AT care station, in addition a negative ion generator and a negative ion emission device with a special handle are inserted.

Nasal irrigation (IN)

Nasal irrigation is a treatment technique that consists of washing the nasal passages practiced using a nasal olive to which the thermal water reaches by gravity. Its effect, both mechanical and healing, is exploited in cases where an important cleansing and washing action of the nasal passages becomes necessary. Each IN type treatment place has a thermal water consumption of 1 to 6 liters in 10 minutes of therapy and a maximum delivery pressure of 10 kPa.

The care place is complete with glass thermal water container vessel suitable for sanitization, nasal olive and silicone vase-olive col-ligament tube.

Humage (HU)

Humage is an inhalation technique that consists of making the patient take in the gaseous content of particular thermal waters.

The diffusibility of the gas allows even the most peripheral airways to be reached with this technique.

Each HU type care place has a consumption of 18 l/min of compressed air at a pressure of 1.5 bar and a maximum of 18 litres/hour of thermal water.

The care station is complete with a polycarbonate container vessel suitable for sanitization and equipped with an automatic drain solenoid valve, bubbler for dissociating gas from thermal water, adjustable terminal for use and silicone vase-mask connection tube.

Medical aerosol (AM)

Medical aerosol is an inhalation technique that uses a specific water-soluble medicine, administered under a prescription. The device is connected to the compressed air system. At the start-up command, air flows through an aerosol therapy nebulizer which breaks down the previously prepared medicine into micro particles.

Each AM treatment place has a consumption of 13 l/min of compressed air at a pressure of 0.6 bar and 2-3 ml of drug for 15 minutes of therapy. The care place is complete with bagged aerosol kit, use terminals and silicone connection tube.

OPTIONAL ACCESSORIES

Height-adjustable care seat armchair, with 5-spoke plastic base and swivel wheels. The seat and backrest are in 8 mm thick cast plexiglass, blue in color and satin finish.

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TECHNICAL DATA

Power supply: 24 Vac ± 10% - 50Hz

Operating mode: continuous

Nominal absorption: depending on the configuration of the installed care stations

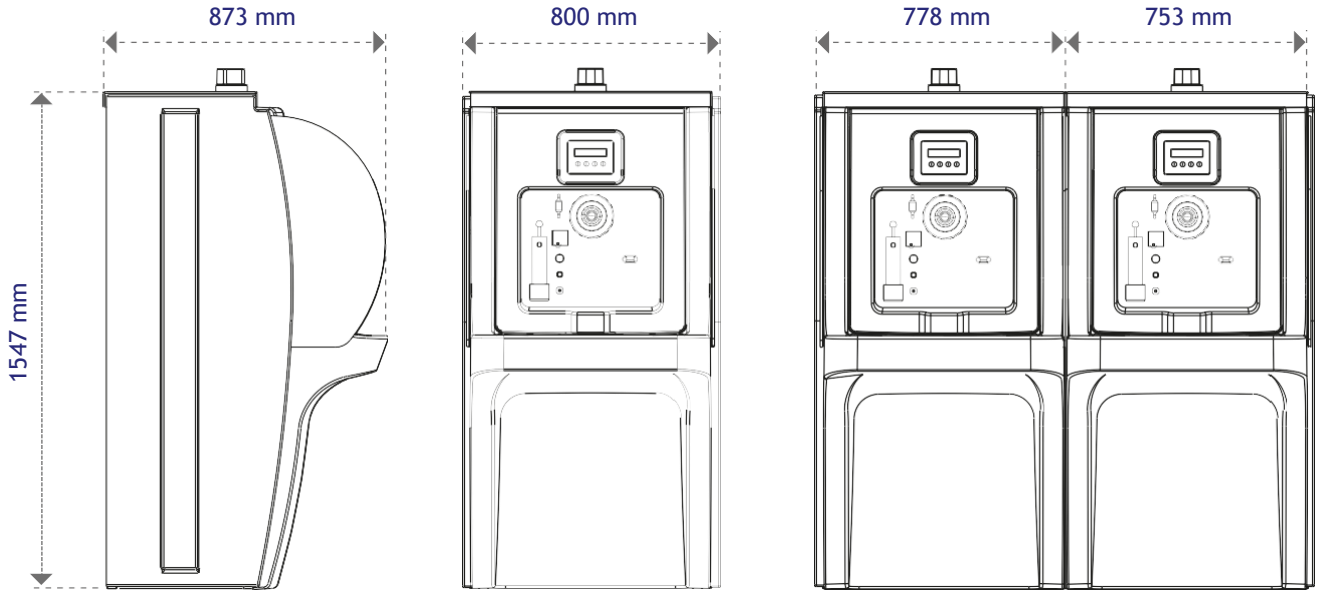
Electrical protection: fuses Ø 10x38 type Gg XXA and Ø 5x20 TXXA
where XX is the value to assign based on the configuration

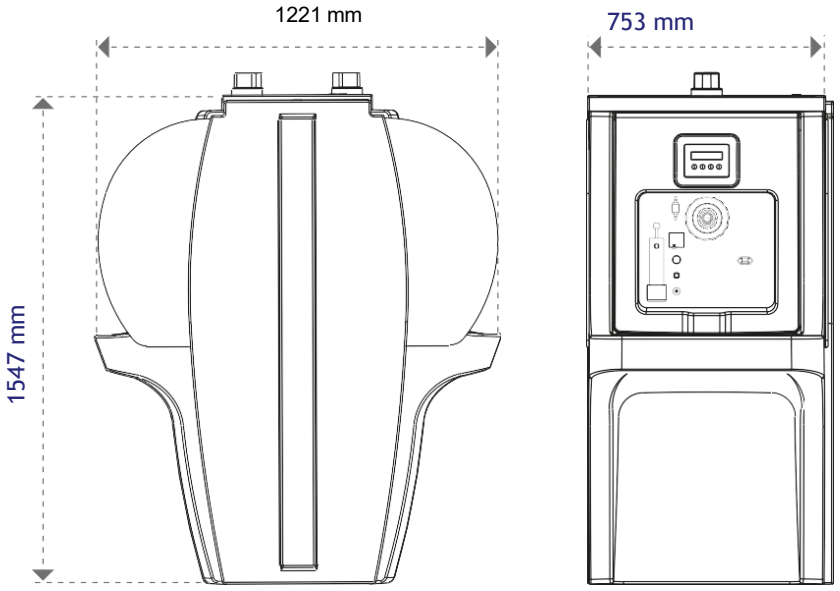
Safety class: I type B

Weight: from 25 kg to 35 kg per care place depending on the configuration

Sound level: <70 dB (A)

Degree of protection: IP20





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