

Madrid, March 18, 2020.

ICU PORTABLE 4 BEDS

BROWSER

Introduction:

The objective of this document is to show the technical characteristics, as well as the most common options of the ICU-PACK made by joining prefabricated modules + medical technology installations + medicinal gases + high quality ventilators and monitors. Through industrializing this constructive system we design independent modules with different technical characteristics and modular buildings for ICU use, formed by joining modules in plane or height.

The system offers the advantage of speed, having a totally finished ICU in record time. Whether we use independent modules or modular assemblies formed by the union of several modules we are significantly faster compared to traditional construction or other systems industrialized.

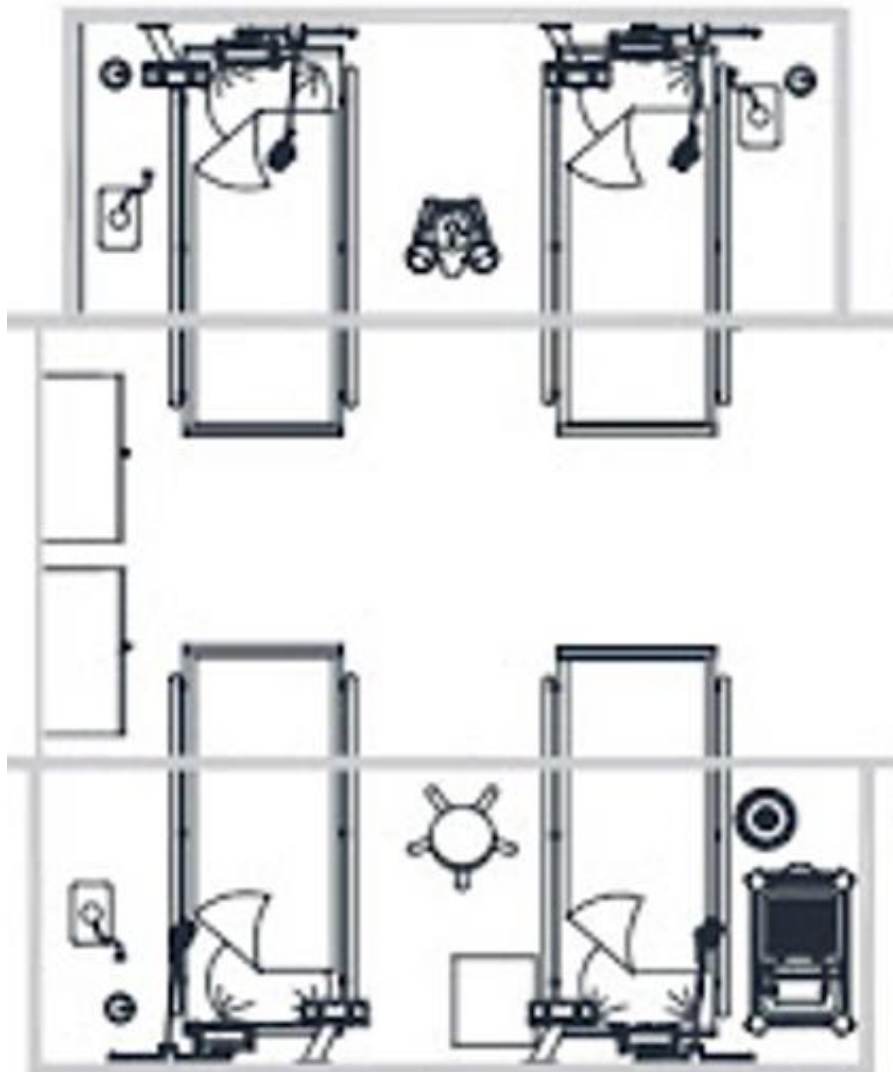
Another of the main advantages of our system is the need of very little foundation, all modules are self-supporting, and the floor structure allows them to be placed on simple supports, even wooden.

Due to these characteristics, the system is designed for ICUs that can be easily moved to a new location if necessary. The system is equally suitable for temporally or permanent ICUs.

We can join modules with any other length, width or height dimension. We also have some standard models with certain interior layouts and features, but we can manufacture custom modules with dimensions, distributions or finishes adapted to the specific needs of the client. We can offer ICUs from 2 beds up to the number of beds required by customer. For example, we have made a design for an ICU with 120 beds.

Finally, our modules are specially designed to facilitate assembly, even by personnel without prior knowledge. The customer himself can easily assemble the modules thanks to the instructions and videos that we supply for each project. In addition, if necessary, we will send our own staff to the address of the assembly and we offer training of local personnel anywhere.

Example of configuration: total 4 beds



About Beds:

The size of the beds is as in every hospital, approximately 2.00 x 1.00 m. We must bear in mind that these beds usually carry "hanging" a lot of equipment, from simple droppers, to respirators, blood pumps, vacuum equipment, trays, monitors, etc.

The space around each bed should be enough for medical and nursing personnel to act. This space is considered to be a minimum of 1.00 m. on both sides of the patient.

At the head of the bed we leave space so that at least one person can be placed and act from behind the patient.

Beds must have the necessary space so that they can be rotated and moved at will, or even removed from the ICU space. We leave some space at the foot of the bed in order to accomplish this.

The separation between beds is done perfectly with curtains hanging from the ceiling.

Installation:

Regarding the installations it has medicinal gases, electrical outlets and air conditioning.

1.- Medical gases:

Medical gas intakes are vacuum, oxygen and medical air.

2.- Electrical outlets:

Sockets connected all, to an uninterruptible power supply, useful for life support equipment to be connected to them.

In addition to general lighting, there are lights above each bed (2 x 2000 lux). In general, the lighting is around 1000 lux.

3.- Air conditioning:

Air conditioning using Split inverter 2.250 frig. Heat and Cold

Total installation made:

- 8 oxygen intakes
- 8 vacuum intakes
- 2 medicinal air intake
- 32 230V / 10A plugs
- 32 equipotential outlets
- 12 double RJ-45 cat 6A sockets
- 12 USB sockets
- SAI 3kw

- Split inverter 2.250 frig.

In the headboard we can find installed technical rails which are usually placed to support small equipment, trays or monitors.

We will add a sink or medical basin with electronic tap to the areas close to the beds, that can be easily operated being at reach at all times.



Surfaces and finishes in general are smooth and free of corners or edges, so that cleaning and disinfection are easier.

The floors are conductive and with insulation panel.

KIT (Flat Pack) System:

The modules are shipped in packages consisting of the roof structure and the floor structure joined with all the materials inside. This system allows to optimize the transport in trucks or containers and also allows a very quick and easy installation (3 hours per module).

Mecano (Disassembled):

Allows further optimization of the transport space when sending the module completely disassembled.

Certifications:

The entire manufacturing process is certified in accordance with the international quality standard ISO 9001 and we have all the approvals and certifications required at European level. We also have an Environmental Management System certified according to the international ISO14001 standard.



As you can see in our header, we are certified as Proser in ISO 9001, ISO 14001 and ISO 13485.

Finally, in the manufacturing process we use top quality materials and we have technical sheets, certificates and /or laboratory tests of the materials used.

Equipments:

For each bed, there is available one ICU ventilator and one monitor as shown:

Monitors and Ventilators:



Technical specification	
Operation mode	Alarm and protection
PCV, SIMV, SPONTICPAP, PSV, SIGH, MANUAL	AC power failure alarm Power failure or no connection
Flow parameter	Internal backup battery low voltage alarm $\leq 11.3 \pm 0.3$ V
Flow (Vt) 0 - 2000 mL	No tidal volume No tidal volume within 6 s
Flow (Freq) 1 min - 100 min	High minute volume alarm 5 L/min - 99 L/min
Flow concentration 21 % - 100 %	Low minute volume alarm 1 L/min - 30 L/min
Flow 4 : 1 - 1 : 8	High airway pressure alarm 20 cmH ₂ O - 100 cmH ₂ O
Flow 0cmH ₂ O - 40 cmH ₂ O	Low airway pressure alarm 0 cmH ₂ O - 20 cmH ₂ O
Flow triggering sensitivity (P _r) -20 cmH ₂ O - 20 cmH ₂ O (based on PEEP)	High oxygen concentration alarm 19 % - 100 %
Flow per sensitivity (P _r) 0.5 L/min - 30 L/min	Low oxygen concentration alarm 18 % - 99 %
Flow control (PC) 5 cmH ₂ O - 80 cmH ₂ O	Continuous pressure alarm (PEEP + 1.5 cmH ₂ O) over 15 s
Flow support (PS) 0 cmH ₂ O - 80 cmH ₂ O	Suffocation warning 5 - 60 s
Flow 0 (off) 1/100 - 5/100	Fan error Show on screen
Flow intubation OFF, 5 s - 60 s	Oxygen deficit Show on screen
Flow limit 20 cmH ₂ O - 100 cmH ₂ O	The maximum limited pressure < 12.5 kPa
Flow parameter	Working condition
Flow (Freq) 0 / min - 100 / min	Gas source O ₂ , Air
Flow (Vt) 0 mL - 2500 mL	Pressure 280 kPa - 600 kPa
Flow 0 L/min - 99 L/min	Voltage 220 V \pm 22 V
Flow 0 cmH ₂ O - 100 cmH ₂ O	Power frequency 50 Hz \pm 1 Hz
Flow compliance testing 1 mL/cmH ₂ O - 1000 mL/cmH ₂ O	Input power 900 VA (With air compressor)
Flow concentration 0 mm Hg - 152 mmHg (0 % - 20 %)	200 VA (Without air compressor)
Flow 15 % - 100 %	
g size	Oscillogram
Dimensions: L 560 * W 560 * H 605 mm	P-T (Pressure-Time)
Weight: 17 KG	F-T (Flow-Time)
Weight: L 670 * W 700 * H 1160 mm	V-T (Volume-Time)
Weight: 46.2 KG	ETCO ₂ -T (End-Tidal CO ₂ -Time)
	P-V Loop (Pressure-Volume Loop)
	F-V Loop (Flow-Volume Loop)
	P-F Loop (Pressure-Flow Loop)

Models for your reference:



Cherish your life, Cherish your health!

ICU Ventilator
ADULT · PEDIATRIC
Friendly Powerful Reliable

