

Activ Cryo V2

User's Manual

11/2021



Thank you so much for purchasing our cryotherapy chamber Activ Cryo V2.



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Description

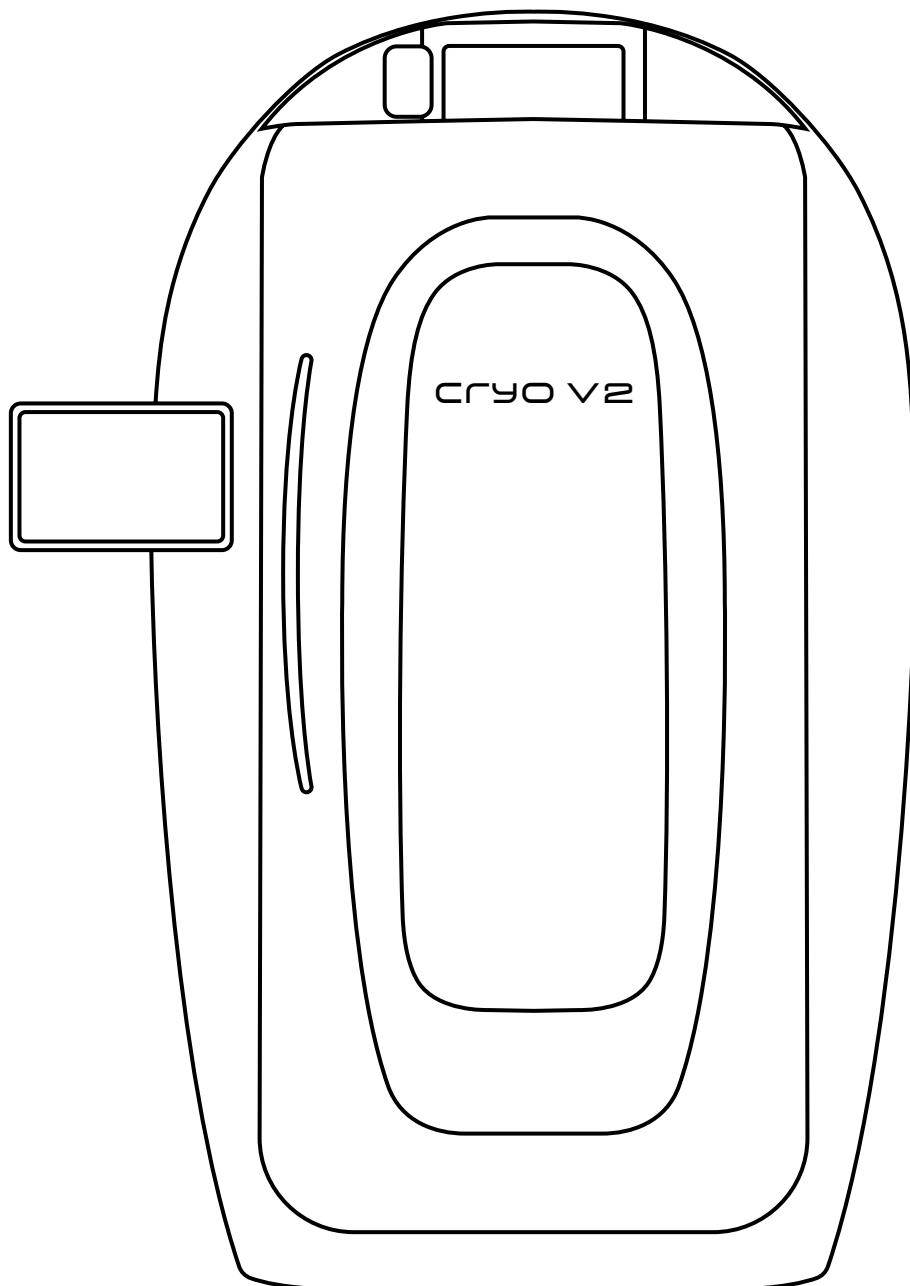
Activ Cryo V2 device is intended for hospitals fitness centres, spas, rehabilitation and wellness, as well as individual customers for execution of individual systemic cryotherapy.

The source of cold in Cryo cabin is liquid nitrogen supplied from cryogenic tank. The cryosauna is equipped with moving floor that adjusts its position to the height of the patient, so that the person is submerged to the shoulders, with head above the layer of cold gas, allowing for breathing the air from the general room.

The operation of the device is based on the liquid nitrogen evaporation system that supplies the nitrogen to the cabin in volatile form in order to produce and maintain low temperatures. Activ Cryo V2 is operated using a built-in automatic system, controlled using LCD touch panel.

The temperature is adjusted by the operator during the treatment within the range of -120°C to -180°C , the treatment time is also adjusted to the duration of up to 3 minutes. The operator may select any treatment time and temperature individually for each patient.

Regular daily treatments, initially 25 sessions, and then 20, 15 and 10 every 6 months, are recommended.



Technical parameters

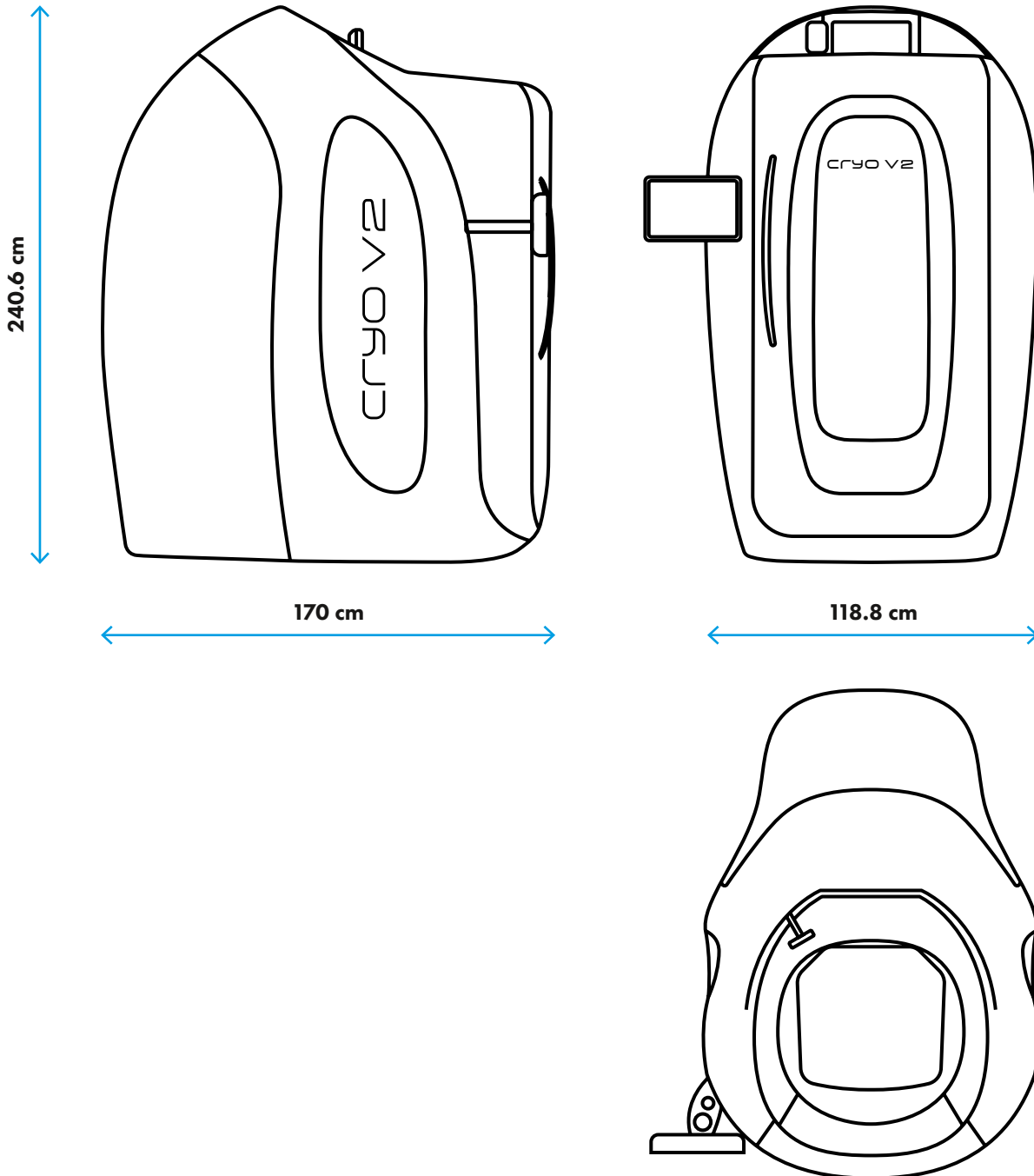
Overall dimensions of Activ Cryo V2	
Width	1,188 mm
Length	1,700 mm
The total height (with the counter)	2,046 mm
The total height (without the counter)	1,800 mm
Height of the participant of the treatment	min. 150 cm
Weight of the participant of the treatment	max. 180 kg
Electrical parameters	
Nominal electrical energy consumption	1.5/2 kW
Power supply	230/50 V/Hz

Technical parameters	
Temperature range in the cabin of CRYOSAUNA during a session (adjusted)	-120°C to -180°C
Freezing time of the cabin of CRYOSAUNA (start-up)	4 to 8 min
Single session time (adjusted by the operator)	1 to 3 min
Nominal time of a single session	90 sec
Maximum time of a single session	3 min
Maximum interval between subsequent sessions	3 min
Nominal nitrogen consumption	
Cryosauna cabin freezing depending on the room temperature	~ 4 ÷ 7 kg
During sessions	~ 1 ÷ 2.5 kg/min

Specification

Description item				
S. No	Item Name	Specification	Compliance Yes/No	Remarks
1.	Activ Cryo V2	Weight of Cryo sauna does not exceed 350kg	Yes	
		Power consumption no more than 1.6 kW	Yes	
		Acoustic pressure - less than 70 dBa	Yes	
		Temperature range during session -120°C to -180°C	Yes	
		Liquid nitrogen consumption for the procedure from 1-3 kg	Yes	Subcooling around 4 kg 1 sessions up to 2,5 kg
		Automatic drying of the cryo sauna cabin	Yes	120 minutes
		Nominal time for the one session 1 min	Yes	
		Maximum time for the one session 3 min	Yes	
		Maximum time period between successive sessions 2 min	Yes	
		Oxygen sensor sensitivity range 21 to 18%	Yes	From 0.01 to 25%

External dimensions of Activ Cryo V2



Recomendations

- A patient receiving a treatment enters into the cabin of cryosauna wearing an appropriate protective clothing:
 - swimsuit for women and shorts for men, thick knee socks, protective footwear e.g. wooden shoes, and gloves (preferably made of cotton);
- Make sure that the patient entering the cabin does not wear any jewellery.
- Person receiving a treatment may not breath the mixture of cold gases present in the cabin of cryosauna;
- Cryosauna must be located in a room equipped with properly working mechanical ventilation;
- Activ Cryo may be operated by well-trained person only.

Room

It is recommended to install Activ Cryo V2 cryosauna in a separate room. The room should:

- not be smaller than 10 - 15 m² and should not be of height less than 250 cm;
- be equipped with efficient mechanical ventilation of appropriate number of exchanges per hour;
- have 2 kW single-phase electrical socket;
- be equipped with an efficient analyser of oxygen concentration in the air (oxygen detector) informing about the decrease of the oxygen content below 19%;

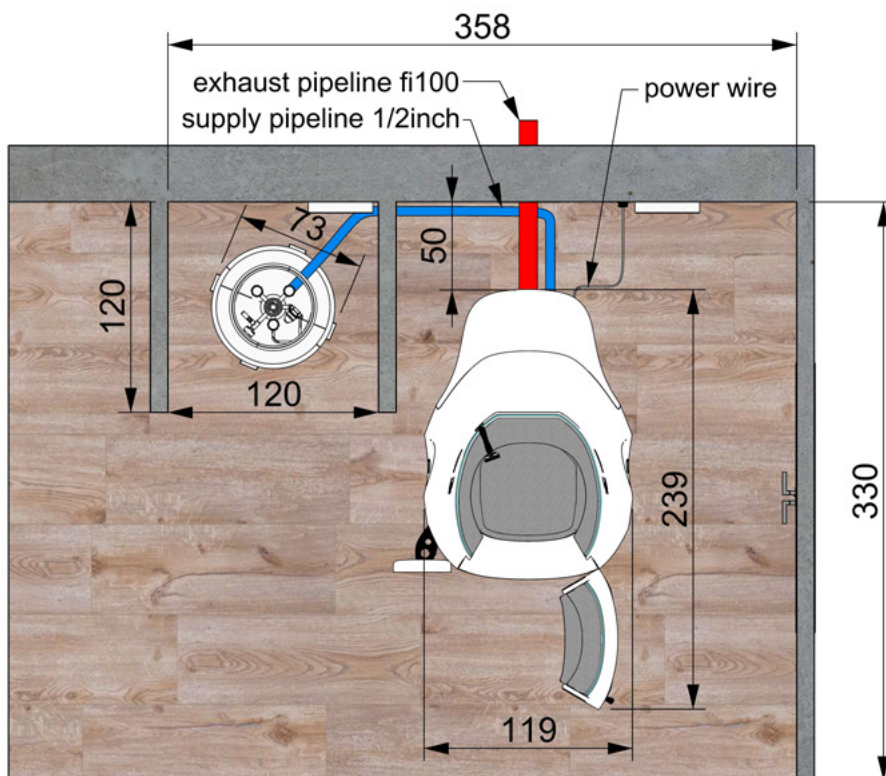
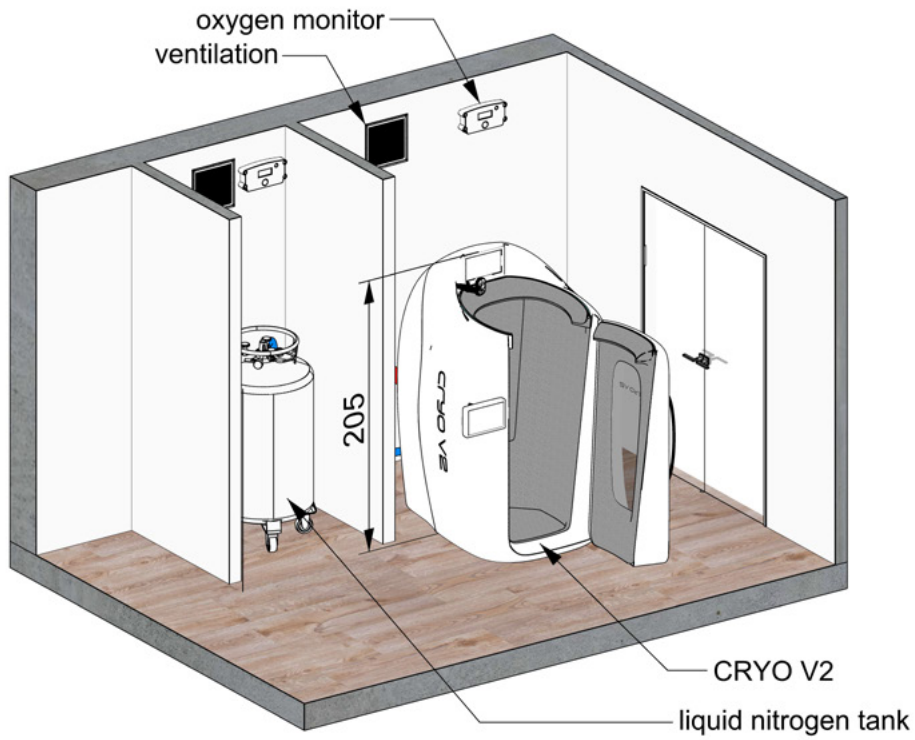
Only personnel operating the cryosauna and the participant of the session may be present in this room.

Cryosauna nitrogen supply

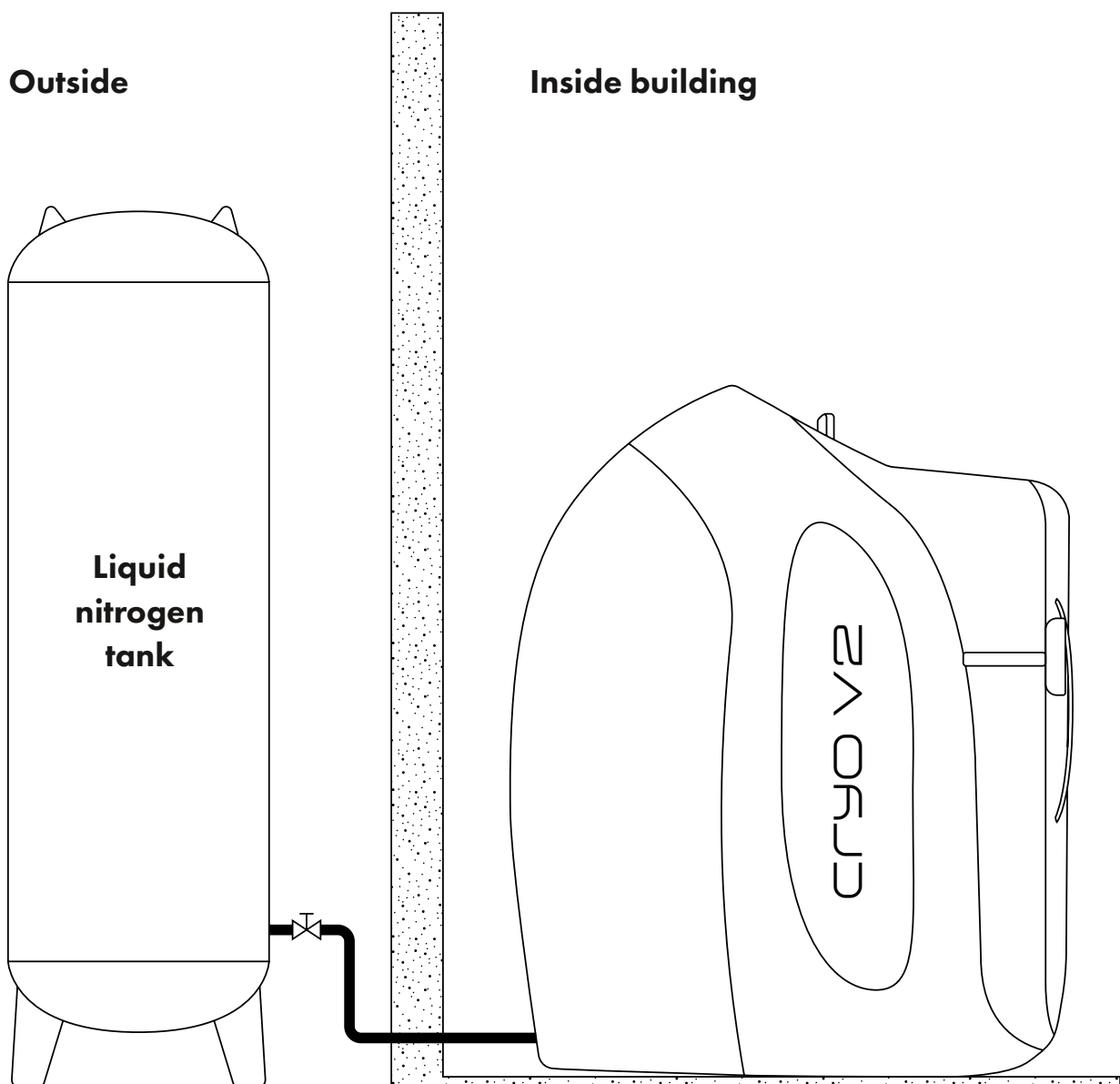
Activ Cryo V2 is supplied in nitrogen from a portable or stationary liquid or compressed nitrogen cryogenic vessel. This vessel is connected via stub connection of Activ Cryo V2 with stainless still cryogenic hose in flexible pleated braid with Missel Robust insulation. Vacu Activ cryosauna is the only one that can be supplied in nitrogen in two ways:

Supplying Activ Cryo V2 in nitrogen is an external portable or fixed pressure vessel.

Portable pressure vessel may be installed right next to the device using a cryogenic pressure hose of 1.8 m length or in adjacent room. In case of greater nitrogen demand, a fixed external vessel (1000 L or larger) may be installed right outside the facility.



External fixed pressure vessel installed outside the building



Note!

- 1. It is essential to follow rules included in the instruction manual.**
- 2. The guarantee does not cover mechanical damage caused by the user or damage resulting from improper use of the device.**
- 3. The cryosauna may be operated only by persons appropriately trained by the installer. The personnel training must be approved by issuing of training completion certificate.**
- 4. Any repairs and adjustments may be carried out by authorised service personnel, trained by producer.**

In case of occurrence of defects such as:

leakage current, sparking etc., the device must be immediately disconnected from the power supply (disconnect the plug from the socket) and service must be called in order to remove the defects.

Commissioning of Activ Cryo V2

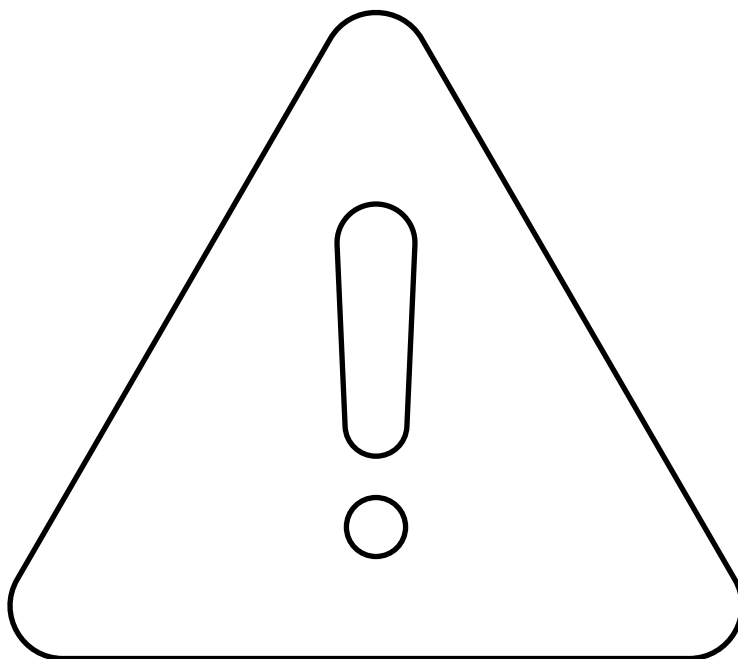
Note!

Before commissioning, make sure that the connections between the device and the electrical installation and nitrogen supply installation are correct.

Insert the cryosauna's power plug into a socket with a protective pin and protective ground-fault circuit breaker.

1. Check and, if needed, set the working pressure in the cryogenic tank or in the nitrogen supply system at the level 22-30 psi (from 1.5 to 2.04 bar).
2. Open the main valve located on the liquid nitrogen vessel or open the valve of the nitrogen supply installation.
3. Open the main manual cryogenic valve in the device.



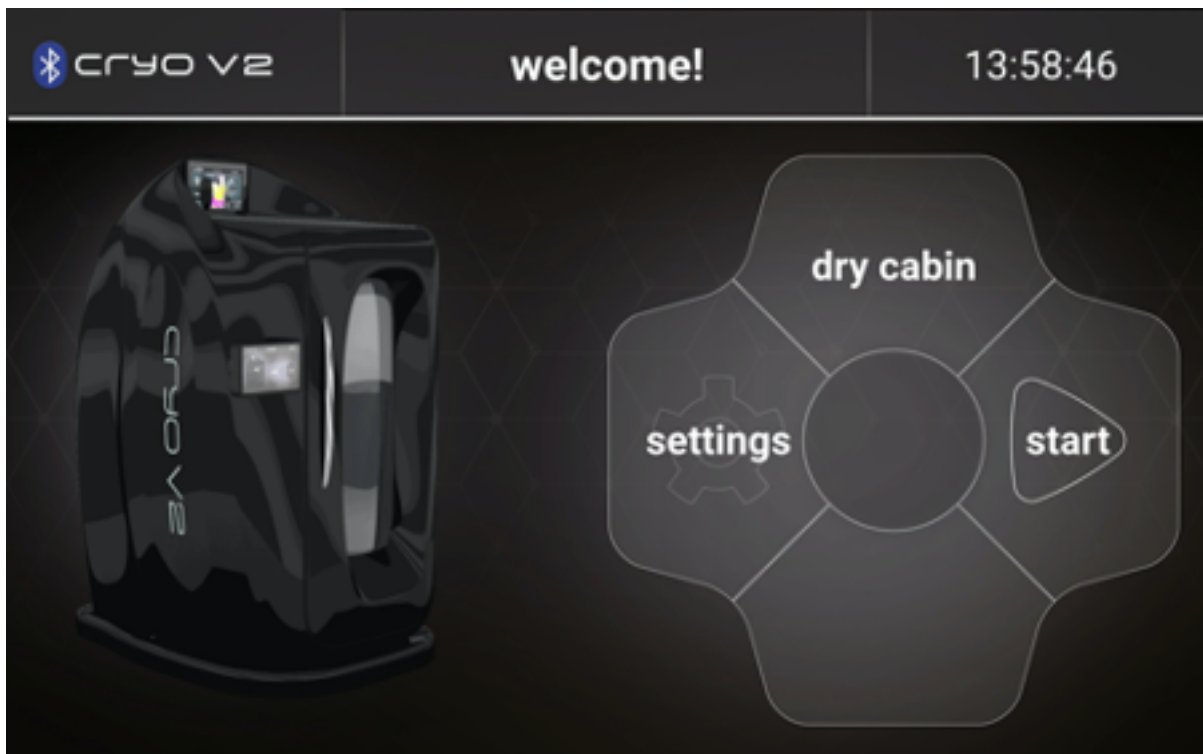


AFTER COMPLETING THESE ACTIVITIES, MAKE SURE THAT THE INSTALLATION IS TIGHT. IN CASE OF UNSEALING OF THE INSTALLATION, IMMEDIATELY CLOSE THE INSTALLATION AND CONTACT THE SERVICE. DO NOT ACTIVATE THE DEVICE UNTIL THE FAILURE IS REMOVED.

Use of Activ Cryo V2

When turning on your Activ Cryo V2 device, both screens – the top (main screen) and the bottom (control screen) will turn on at once. The thermal imaging camera (optional) will connect automatically with the main screen.

Control screen



There are three main options to choose:

Settings

Setting adjustments to the user's preference. A detailed description of the settings menu can be found in "Settings"- page 8.

Dry cabin

Removal of cold gas from the cabin of the cryosauna

Start

Transition to Active Cryo V2 programs.

Actual time is being displayed in the top right corner

Main screen



The main screen visualize the operation of the device. It is responsible for the superior control of the device's operation

There are five main operating modes being displayed in Main screen during every session:

1. Body temperature.
2. Inside cabin temperature.
3. Duration of every session, as well as cabin drying and pre freezing countdown.
4. Current device status - session settings, session time settings, set temperature, pre freezing and cabin drying.
5. Thermal Camera Image (optional).

Selection and start of the session



By pressing start button on the controll screen, the mode select screen will appear showing four main Activ Cryo V2 programs

There are four programs that can be chosen

- 1. Beginner**
treatment duration 60 s, temperature inside -120°C
- 2. Medium**
treatment duration 120 s, temperature inside -140°C
- 3. Advanced**
treatment duration 180 s, temperature inside -160°C
- 4. Manual**
Individual settings of treatment duration and temperature
- 5. Up / Down lift buttons**
Lift buttons to adjust the participants height inside the cabin are on the right of the touch keyboard

Lift buttons



Use up or down lift button to appropriate the participant height to keep the head above the edge of the cabin. The participant must breathe the air from the room, not the mixture of cold gases from the cryosauna cabin.

The participant of the treatment must not breathe the mixture of cold gases present in the cryosauna cabin, as this may result in strangling and faint, or even death.

After positioning of the participant, press accept button to proceed forward where you can start pre-freezing the cabin and begin the treatment with the selected program.

Pre-freezing



Freezing consists of lowering the temperature in the cabin in order to prepare it for treatments. The freezing process lasts 240 s and is carried out when the cryosauna is empty, without the treatment participant.

Do not freeze the cabin when there is a person present inside the cryosauna, as it may lead to serious burns and frostbites.

Before starting the first treatment, freeze the cabin.

- To do this, press pre-freeze button located in the up right corner of the touch keyboard. Pre-freezing can be chosen in each of the four treatment programs
- You can set the cabin temperature by swipe move up or down. Cabin temperature can be set every five degrees starting from -100 and ending on -180 degrees.
- Pre-freeze time is predefined and its set to 600 seconds (10 minutes), you can stop pre-freeze whenever you want.
- After the freezing process is complete, open the door of Activ Cryo V2 and let the participant enter.

Beginner, Medium and Advanced mode

In all of these programs, settings are predefined and prepared for the user's capabilities

- In **beginner mode**, time of the treatment is set for 60 seconds (1 minute), the temperature inside the cabin is set for -120 degrees
- In **medium mode**, time of the treatment is set for 120 seconds (2 minutes), the temperature inside the cabin is set for -140 degrees.
- In **advanced mode**, time of the treatment is set for 180 seconds (3 minutes), the temperature inside the cabin is set for -160 degrees

Pre-freeze

should be done before treatment in your Activ Cryo V2 device. Pre-freeze option is available in all four treatment programs- manual, beginner, medium and advanced.

Lift up and Lift down

buttons to appropriate the participant height are available to set while in summary screen in all four treatment programs.

Cabin Temp

shows the actual temperature inside the cabin from the moment of turning on the device. Shown in all four treatment programs.

Body Temp

shows the actual temperature of the participant's body. This option works when your device is equipped in the Thermal Camera device. Without the camera, body Temp value will be shown as 0°C

To begin the treatment in one of chosen programs, press (START)

Manual settings



In manual settings the **cabin temperature** as well as **session time** can be set by swipe move up or down

-
- Cabin temperature for the full treatment can be set every five degrees starting from -100 and ending on -170 degrees
 - Session time can be set every ten seconds starting from 60 seconds (1 minute) and ending on 180 seconds (3 minutes)
 - Lift Up or Down the participant if its needed

Accept button

will proceed to the summary screen, if everything is set properly, by pressing start you will proceed the treatment.

Cancel button

returns you to four main programs

During the chosen treatment



In session mode, the selected treatment options are displayed, depending on which of the four programs has been chosen.

-
- Time and treatment temperature, depending on which of the four programs has been chosen.
 - Lift Up and Lift Down buttons. They are available to use, you can adjust the participant height during the treatment (The same applies to each of the four programs).
 - Time to end is being displayed. Time lapse is displayed graphically
 - Cabin Temperature - temperature inside the cabin showed from the moment of turning on the device.
 - Body Temperature – The participant’s actual body temperature. Its being “captured” by the Thermal Vision Camera (optional)

After completion of the treatment, open the door of the cryosauna. The participant may leave the cabin of the cryosauna when the lift is lowered to the bottom by using the Lift Down button.

Drying the cabin after the cryogenic session



The drying process is carried out when there are no persons inside the cabin. It consists removal of cold gas from the cryosauna cabin to outside of the room.

-
- You can set the drying time for 30 minutes or maximum 240 minutes per drying session by swiping up or down in "set time". Normally the time is set to 120 minutes.

The drying process lasts for the time choosed by the operator with the cryosauna door open. After completion of the process the screen automatically returns to the main screen.

After completion of the drying process, close the cabin door and turn the device off by disconnecting the power plug from the socket.

Rules of safe use

The treatment may be stopped at any time by pressing the emergency stop button located on the right of the Main screen standing in front to the machine. Participant should be informed of where is the emergency stop switch before the treatment session.



The cryosauna may be operated only by persons appropriately trained by the installer. The personnel training must be approved by issuing of training completion certificate.

Any repairs and adjustments may be carried out by authorised service personnel, trained by producer. In case of occurrence of defects such as: leakage current, sparking etc., the device must be immediately disconnected from the power supply (disconnect the plug from the socket) and service must be called in order to remove the defects.

The producer requires the users to use protective clothing in a form of:

- thick, preferably cotton, knee socks
- footwear with thick sole
- gloves, preferably made of cotton
- swimsuit in case of women
- two pairs of shorts in case of men - preferably made of cotton

Basic risks for the users of the cryosauna:

- Risk of falling out of the user from the cabin during the treatment
- Risk of suffocation
- Risk associated with the possibility of fall when leaving the cabin of the cryosauna
- Skin burns (frostbites) after too long exposure to very low temperatures
- Skin burns (frostbites) after direct contact with nitrogen
- Electric shock

Each time after the nitrogen intake valve is opened, the person operating the cryosauna should visually control the cryogenic nitrogen installation in order to detect any leaks. In case of finding any leaks in the installation, close the valves and call the service in order to remove the leaks. Do not remove leaks on your own. Removal of leaks by unauthorised persons may cause serious burns (frostbites).

Please read

Do not enter the cryosauna if you are sweaty. Sweaty persons must carefully wipe dry using a towel and wait to cool down. Do not enter the cryosauna directly after physical exercise, physical effort, swimming in a swimming pool, hydro massage, sauna etc. People under the influence of alcohol and drugs may not enter the cryosauna. The participant of the treatment may receive the treatment again after a period of time not shorter than 8 hours. A participant may receive a treatment up to 2 times a day.

The participant of the treatment must hold his or her head above the upper edge of the cabin, so that he or she can breathe the air from the room, and not the mixture of cold gases from the cryosauna. Breathing the mixture of cold gases may result in suffocation and fainting.

Each time the participant leaves the cabin of the cryosauna, the door is opened. The mixture of cold gases is "poured" from the cabin to the room, in which the cryosauna is located. Repeating the treatment many times may result in excessive reduction of oxygen in the air mixture, which in turn may result in suffocation of the personnel. The cabin of the cryosauna must be located in a room equipped with properly working mechanical ventilation.

The room must be equipped with an active oxygen detector, which informs the personnel about the drop of oxygen content below 19%. In case of drop of oxygen content in the air below 19%, immediately stop the treatment and ventilate the room.

For safety reasons, the door of the cryosauna is closed only using magnetic holders without additional locks or bolts and may be opened at any time even by a

person that is inside. Therefore, pay special attention to prevent the participant present inside the cabin from leaning against the door of the cryosauna, since the door may open due to pressure, making the participant fall out of the cabin.

The operators of the cryosauna must maintain eye contact with the patient inside and may not move away from the cryosauna.

Indications

Systemic cryotherapy treatment is kind of opposite to the Finnish sauna. First of all, it has remarkably beneficial effect on the psyche, it significantly improves mood, makes the feeling of depression and fatigue disappear. A completed session provides a feeling of physical relaxation, vigour and well-being. Therefore, a session of cryo bath is also relaxing.

Use of the cryosauna:

- accelerates post-exercise restitution
- supports endurance and performance training
- supports fighting with overweight and cellulitis
- accelerates the healing processes
- supports athletes
- reduces muscle tension
- increases muscle endurance
- slows down the aging processes
- increase the immunity;
- supports recovery of professional athletes and adults who are physically and mentally tired
- increases the range of motion
- is an element of prophylaxis of motor organs overstraining
- supports treatment of muscle, joints and spine overstraining syndrome

Use of systemic cryotherapy is particularly desirable in case of the following:

- emergency aid and treatment of early burns
- to induce homeostasis of internal bleeding from gastrointestinal tract and external bleeding e.g. extensive abrasion of the epidermis
- recovery of professional athletes and adults who are tired physically and mentally
- comprehensive therapy of rheumatic and degenerative diseases,
- soft tissue rheumatism
- primary and secondary degenerative diseases of the motion system
- acute and strenuous injuries, including sport and post-surgery injuries, not disturbing but even speeding up the healing processes
- treatment of rare autoimmune diseases and collagenoses
- bone diseases with primary and secondary osteoporosis
- combating chronic pathological pain
- combating reflex and centrifugal spasticity of muscles in the process of neurological rehabilitation.

Indications

Contraindications for the use of the cryosauna:

- cold intolerance
- Raynaud's disease
- cryoglobulinemia
- cryofibrinogenemia
- cold urticaria
- central nervous system diseases
- purulent and gangrenous skin lesions
- agammaglobulinemia
- debilitation and hypothermia of the body
- influence of medication, especially neuroleptics, and alcohol
- anemia
- local blood disorders
- hypothyroidism
- sympathetic nervous system neuropathies



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