INSTALLATION AND OPERATION MANUAL

Therapeutic bathtub

for automatic zone hydromassage

ORIONMED

ORIONMED Balneo

CE 0197

Manufacturer:

MEDEN - INMED, Spółka z o.o.

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LIST OF CONTENT

Dear Customer!

We would like to congratulate You on the right choice, as well as wish You satisfaction during the operation of our product. We ask for a mindful lecture of the following manual, as it contains important information and producer remarks on how to correctly install, operate, as well as conservate the product.

Introduction

The application by the User of the recommendations concluded in the Manual, as well as the use of the information contained therein allows for safe, long-standing and indefectible use of the therapeutic bathtub for automatic hydromassage. We ask for any comments and obervations on the bathtub montage and the contents of the following manual to be directed to our address:

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GENERAL NOTES:

1. The product should be operated by qualified and trained personnel, that has read through the following manual.

2. Using, control and servicing of the product inconsistently with the following manual is prohibited and may cause damage that charges the user, and the manufacturer does not hold responsibility for it.

3. The manufacturer prohibits performing any modifications in the used product.

4. If the operation and parameters of the product are inconsistent with the description contained in the following manual, the product should not be used. It is necessary to report immediately to the manufacturer.

5. Every repair of the product must be conducted by the manufacturer or an authorised service, and recorded in the repair list added to the warranty card. Failure to satisfy this requirement will result in the loss of the product warranty.

6. The warranty conditions will not be respected if the user misuses the product, or does not comply with the operation rules, contained in the following Manual.

7. Technical description of the tub with a list of wear parts and the instructions on their replacement (including the non-detachable power cord) is available at manufacturer on request.

8. Any serious incident with an ORIONMED, ORIONMED Balneo bathtub must be reported immediately to the manufacturer and to the competent authority of the Member State.

1. DEVICE PURPOSE

The ORIONMED bathtub is a therapeutic bathtub of advanced construction, specially designed for the automatic zone hydromassage treatments. The main functions of the ORIONMED bathtub allows full-body hydromassage from any chosen zone.

Treatment possibilities	ORIONMED	ORIONMED Balneo
1. Bathing in pure water:		
Automatic zone hydromassage	YES	YES *
Pearl baths	YES	YES
2. Baths in mineral water:		
Automatic zone hydromassage	NO	YES *
Pearl baths	NO	YES **
Saline baths	NO	YES
Carbocarbon acid baths	NO	YES
3. SPA options:		
Water illumination	YES	YES
Aroma	YES	NO
Music	YES	YES
Water whip	YES	NO

** in all zones at the same time*

*** do not use water for bathing with suspending additives such as liquid mud, milk, chocolate, beer or additives in the form of powders as this may cause clogging of the nozzles of the bubble massage system.*

1.1 Automatic zone hydromassage bath

In this bath, the thermal influence of the water is used along with its mechanical effects associated with the whirling motion. The bath with automatic hydromassage should be conducted in temperatures 36-37°C, and the treatment time should last between 10 and 30 minutes. In the specially shaped basin, there are hydromassage jets, positioned around the spine, loins and legs of the aligned patient.

1.1.1 Indication for use of hydromassage bath:

- the initial stage of hypertension,
- to reduce muscle tension,
- musculoskeletal trauma,
- musculoskeletal disorders,
- stress, general fatigue,
- to assist in diseases with increased muscle tension.

1.1.2 Contraindication for use of hydromassage bath:

- advanced stage hypertension and uncontrolled hypertension,
- venous insufficiency (thrombosis),
- hyperalgesia,
- infectious skin diseases,
- recent surgery, open wounds,
- organ failure (cardiac, pulmonary, cerebral, renal),
- tumors,
- cardiomyopathy,
- mental disorders.

1.1.3 Target group of patients

For hydrotherapy treatments in the ORIONMED bathtub patients are referred to the order of the attending physician who assesses their condition in terms of suitability for treatment. Hydrotherapy treatments in the ORIONMED bathtub are carried out under the supervision of service staff.
The group of patients who benefit from hydrotherapy are patients over 18 years of age. The manufacturer does not recommend hydrotherapy treatments in the ORIONMED bathtub for minors. Underage patients should be referred for treatment only on the recommendation of the attending physician.

1.1.4 Users

Therapeutic bathtub for automatic zone hydromassage ORIONMED can be used only by qualified personnel familiarized with the information contained in the user manual supplied with the device.

1.2 Additional performance options

1.2.1 Balneological baths

The ORIONMED Balneo bathtub offers additionally brine baths and carbonic acid baths.
The ORIONMED Balneo bathtub is equipped with an additional quick filling system at the bottom of the basin. The bathtub is made of materials resistant to the influence of aggressive chemical factors, which allows for reliable and long-lasting operation in conditions necessary to conduct balneological baths with the use of brine and CO_2 saturated water.
During treatments with the use of mineral waters a set of chemical and thermal factors acts on the organism or its part. The changes taking place in the body depend on the type of chemical composition, concentration of components and temperature of the mineral water.
Patients are referred to balneological baths on the recommendation of the attending physician, who assesses their condition in terms of suitability for the procedure.

1.2.2 Saline baths (only for ORIONMED Balneo)

The effect of saline bath is based on the irritating effect of salt, which penetrates into the epidermis and sweat glands. The salt also causes softening and loosening of the epidermis.
Warm baths (bath temperature 34-37°C) are performed in a brine of lower concentration (from 0.5% to 1.0%).
Hot baths (bath temp. 37-40°C) are used in brine of higher concentration (from 2.0% to 3.0%).
The treatment cycle begins with a weak brine concentration (treatments every other day), and then the concentration is increased in subsequent baths, increasing their frequency to 4-5 baths per week.

1.2.3 Carbonic acid baths (only for ORIONMED Balneo)

The CO_2 contained in the water reaches the skin in the form of bubbles, which carry out a micromassage of the touch and pressure receptors. The CO_2 absorbed into the skin additionally causes the capillaries, arterioles, and veins to dilate, thereby lowering blood pressure and moving blood from other areas of the body into the skin. This process also increases the supply of oxygen and nutrients to the body and accelerates the removal of metabolic by-products.

The recommended bath temperature range is 33-34°C and the bath time depends on the general condition of the patient. The full treatment cycle consists of a series of 12 to 15 baths, but no more than 3-4 carbonic acid baths per week.

1.2.4 Pearl bath (option)

A pearl bath in an ORIONMED bathtub comes as standard, while in an ORIONMED Balneo bathtub as an additional option.

The advantages of a pearl bath result from the interaction of water and air streams on the human body. Pearl bath in the ORIONMED tub is conducted by 126 nozzles with intensity regulation and the possibility of choice of intensity regulation course.

Recommended temperature range for the pearl bath is 20-40°C. The bigger the divergence down or up, the more intense incentives work on our body and change its reaction.

1.2.5 CHROMO - Water illumination (optional)

Treatments with the use of lighting effects in the ORIONMED bathtub consist of illuminating the water while bathing. The effect of colored water during bathing is achieved by switching on and off in a specific sequence of two LED-RGB light sources, located in the bathtub basin.

CHROMO 12: 12 single light sources.

CHROMO 24: 24 individual light sources.

CHROMO 36: 36 individual light sources.

1.2.6 AROMA - Aromas (option only for ORIONMED)

It is possible to conduct a bath with the use of aromas. The bath can be equipped with a tank for 1 fragrance, dosed during the treatment with a button.

1.2.7 AUDIO - Music (option)

Bathing with music is an option, that can be chosen during the treatment. The sound comes from speakers located in the back of the bathtub.

2. TECHNICAL CHARACTERISTICS

The basin of the bathtub is made out of high-quality acrylic glass, reinforced with glass fibres. The outer casing of the bathtub is also made of plastics, reinforced with glass fibres. The use of such materials provides a long-term and trouble-free operation of the bathtub. The entire water system, with the exception of connections, valves, is made of PVC, which ensures high reliability. After filling the bathtub by turning on the hot and cold water valves (fig. 1 – pos. 1 and 2) up to a level, controlled electronically, the start of bath is possible in manual control mode of its progress, or in program control mode. Water pump, switched on in suitable time sequence, pumps water through the bathtub basin nozzles (fig. 1 – pos. 11 and 13). Pearl bath system is performed by electrically powered air blower that draws air, pumped under pressure by pan vents and broken down into different-sized particles, released into the water in the bathtub.

The bathtub is made to order, and the parameters for the bathtub are stated in the table below:

Bathtub	**ORIONMED**	**ORIONMED Balneo**
Capacity [l]		
- minimum bathing level	160	
- overflow	320	
Number of hydromassage nozzles	26	
Number of pearl bath nozzles	126	
Height [mm]	850	
Width [mm]	850	
Length [mm]	2140	
Mass (with full equipement) [kg]		
- without pump and underwater massage whip	170	160
- with pump and underwater massage whip	195	-
Overflow	+	
Handles	2	
Colour	green „calypso”-standard, white-standard	
Bathtub casing		
Number of cover	4	
Colour	white	
Operating parameters		
Supply conditions	~230 V/50 Hz	
Power consumption [A]	25	14
Protection rating	I	
Applied part	type B	
Ambient temperature [°C]	10-40	
Maximum allowable water temperature at the start of treatment [°C]	37	
Patient weight [kg]	135	
Maximum safe bath load (SWL) [kg]	320	
Maximum time of [minutes]		
- filling up to minimal bath level*	< 4	< 2
- draining	< 4	< 4

* depends on the pressure of the water in the connections, recommended flow ~70l/min

3. COMPLETION

Therapeutic bathtub for automatic zone hydromassage ORIONMED, ORIONMED Balneo (specification according to the order)	1 pc.
User manual with warranty card and periodic technical inspection card	1 pc.
Headrest	1 pc.
Bathtub step	1 pc.
Additional options	according to the order

On delivery the complience of the product with the specification should be checked.

4. DESIGN AND OPERATION

The producer reserves the right to implement changes in the tub construction, that do not violate the functionality and safety requirements. Illustrations included in the following manual are only indicative, and the variants of manufactured product follow the order specification.

4.1. ORIONMED bathtub

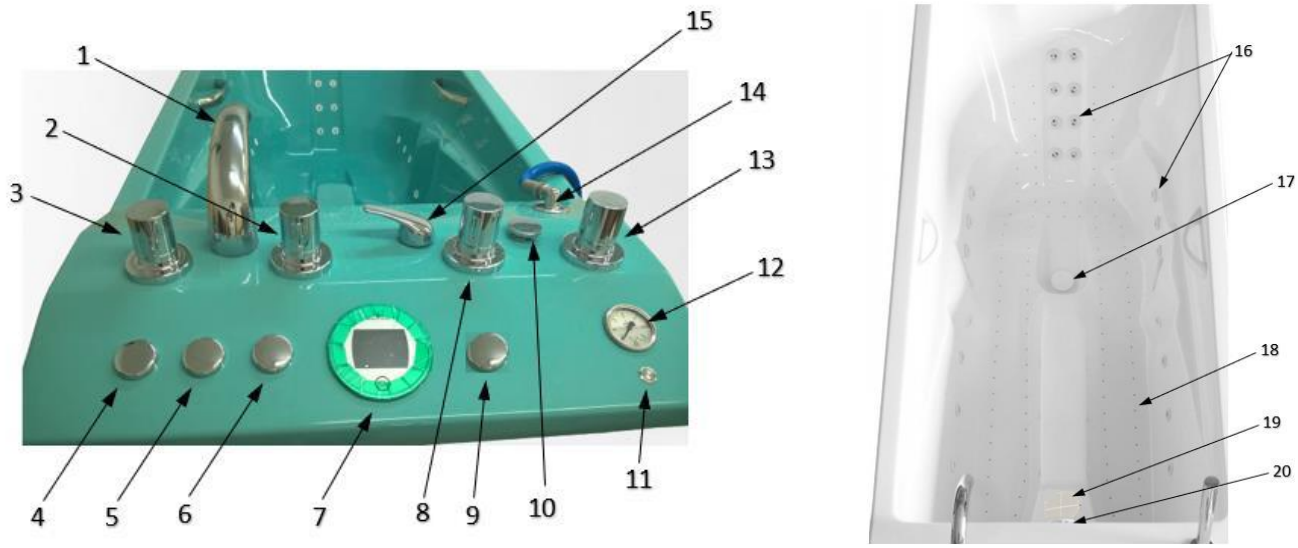
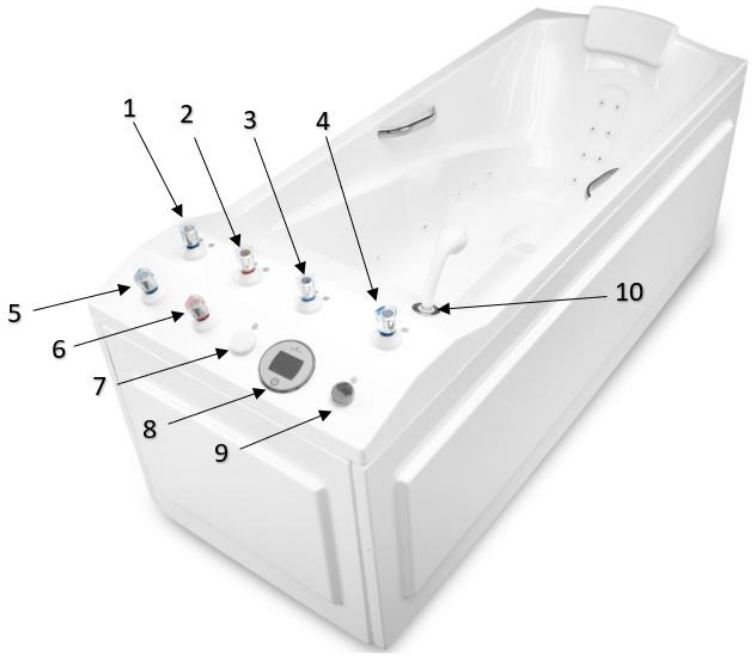


Figure 1 - View of the ORIONMED bathtub basin with control and regulation elements

1	Bath filler	11	Whip switch (option)
2	Cold water filling valve	12	Whip manometer (option)
3	Hot water filling valve	13	Valve for whip pressure regulation (option)
4	Aeration valves of zone S1	14	Whip hose or shower
5	Aeration valves of zone S2	15	Valve for opening/closing of the water discharge
6	Aeration valves of zone S3	16	Hydromassage nozzles
7	Control panel	17	Water discharge hole
8	Valve for shower regulation	18	Pearl massage jets
9	AROMA (option)	19	Sucker drawing water into pump
10	Disinfectant filler-pipe	20	Overflow

4.2. ORIONMED Balneo bathtub



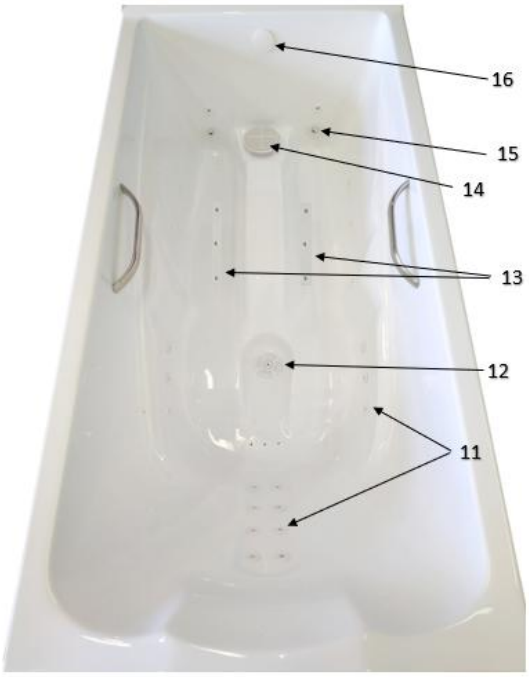


Figure 2 – View of the ORIONMED Balneo bathtub basin with control and regulation elements

1	Cold water filling valve	9	Filling plug for disinfection tank
2	Hot water filling valve	10	Shower
3	CO_2 valve (option)	11	Hydromassage water jets
4	Shower valve	12	Water drain
5	Cold saline filling valve	13	Pearl massage jets (option)
6	Hot brine filling valve	14	Suction cup for pump
7	Hydromassage aeration	15	Nozzles for filling the bathtub
8	Control panel	16	Owerflow

4.3. CE mark

CE 0197

Therapeutic bathtub for automatic zone hydromassage ORIONMED, ORIONMED Balneo is manufactured in accordance with Medical Device Regulation 2017/745 (class IIa, 9 rule) and has a CE marking, according to the manufacturer declaration.

4.4. Symbols

	Shower
	Cold water control valve (marked blue)
	Hot water control valve (marked red)
	Whip - option applies to ORIONMED only
	Closing direction of the cutting off and regulating valves
	Aeration
	Disinfectant tank
	Water discharge open
	Water discharge closed
	CO_2 control valve (marked blue) - option applies to ORIONMED Balneo only
	Cold brine control valve (marked blue) –for ORIONMED Balneo only
	Hot brine control valve (marked red) – for ORIONMED Balneo only
	AROMA option
	Follow the manual instructions
	Medical device

	Applied part type B
	Warning sign. Hereby determines actions that, if taken not according to this Manual, might cause worsening of conditions or security risk for user and/or personel operating the bathtub. A similar sign is applied whenever it is absolutely necessary to peruse the contents of the Manual, as well to follow its recommendations while operating the device.
	Maximum safe bathtub load
IPX5	Protection against water spray from either side of the panel
MAX 6 bar	Maximum nominal pressure of the water supply
„CO2”	CO_2 saturated water supply - option applies to ORIONMED Balneo only
	According to the regulations on Amending the Waste Electrical and Electronic Equipment Act it is forbidden to discard with other waste the equipment marked with a crossed out trashcan. Electrical and electronic waste should be returned to a proper collection point. The above mentioned provisions were introduced in order to limit the amount of waste produced from used electrical and electronic appliance, as well as to ensure a suitable level of collection, recovery and recycling of used appliance. Proper realization of those obligations signify especially when the waste contains dangerous components, which have a particularly negative impact on the environment and human health. Non-electrical waste is utilised in accordance to the provisions in force
	Unique Device Identification
	Serial number
	Manufacturer, YYYY – year of production
	Catalogue number

5. SAFETY MEASURES

5.1. Location of operation

WARNING!

For the sanitary reasons it is not recommended to permanently connect the drainage installation of the bathtub with the building's sewerage system, as, in case of failure or malfunction of the sewerage system, there exists bacteriogical hazard with the sewage from other devices.

WARNING!

It is recommended to place in the room additional, easily accessible valves to shut off the supply of media to the device.

WARNING!

The rooms in which balneological treatments are carried out should be equipped with bottom gas overflows and mechanical supply and exhaust ventilation with bottom exhaust to ensure increased air exchange exceeding two times per hour.

The bathtub is manufactured according to the localisation and conditions o montage, indicated by the user.

The montage and first use of the bathtub is made by the manufacturer's service, or a manufacturer authorised unit.

5.2. Use notes

WARNING!

The condition for the treatment to be done in the bathtub for automatic areal hydromassage is the water replacement after every patient.

WARNING!

While filling the bathtub it is important to remember that the bathtub should first be filled with cold, and then with hot water up to a desired temperature.

WARNING!

It is forbidden to exceed the treatment water temperature of 40°C in the bathtub due to possibility of bruns or other hazards resulting from too high a water temperature.

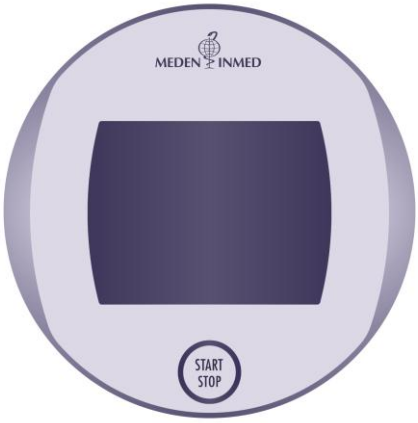
6. BATH OPERATION

6.1. Welcome screen

After turning the power of the device on, a welcome screen is displayed.

LED diode flashes in blue color.

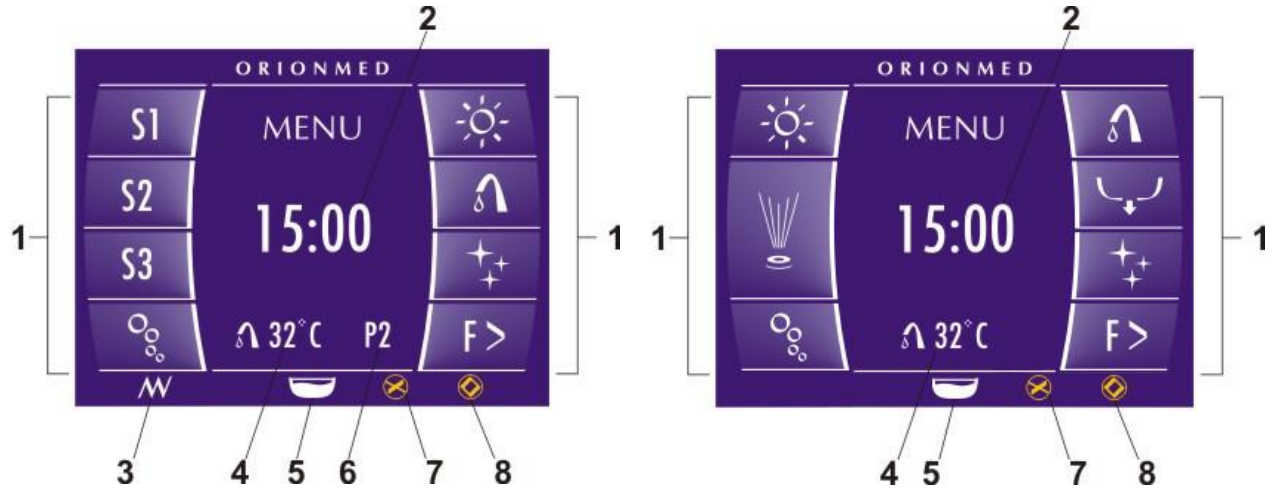
6.2. View of the desktop



Pressing the START / STOP button will enter the bath setting mode and display the Settings main screen.

Note: After 15 minutes. inactivity, the bathtub panel goes into sleep mode, the LCD display goes blank, the LED flashes blue in 5-second increments, signaling the presence of power. Return from sleep mode is done by pressing the START / STOP button.

6.3. User interface elements



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1. Touchpad buttons.

The function of the buttons present on separate screens of the menu were described in the following points. The button state is signalled by its colour:

- button not pushed /function inactive

- button pushed/function active

The buttons that are, at the same time, indicators of switching on of a given function (for example zone choice buttons) change its state after pressing and releasing of the button.

2. Information field showing the time passing or currently modified parameter.

3. An icon representing the chosen pearl bath mode.

(none) - consistent intensity of the massage

 - rectangular procedure of intensity

 - sawtooth procedure of intensity

4. Water temperature indicator.

During the filling the temperature of the poured water is displayed, which is also displayed with an additional symbol  , in other case the temperature of water in the bathtub basin is displayed.

5. Icon for water level in the bathtub basin.

 - bathtub empty (water level below the lower sensor)

 - 1st level of filling was reached

 - treatment level (water level above the upper sensor)

6. Number of the chosen default program.

No symbol means that no default programs were chosen. If the program number P4 is displayed in red, it indicates operation in user sequence recording mode.

7. Icon for disinfectant absence.

8. Icon signalling the need of the descalation.

6.4. Main settings screen

It is displayed both during setting before, as well as during the bath. LED diode, before the bath, glows continuously in blue, or flashes, signalling the water level appropriate for treatment.

During the bath the LED diode glows continuously in blue.

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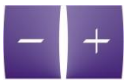
Button	Description
	On/off for 1st hydromassage area (or all areas at once).
	On/off for 2nd hydromassage area (or all areas at once).
	On/off for 3rd hydromassage area (or all areas at once).
	On/off for pearl massage.
	On/off for water illumination effects. After clicking again, one of chromotherapy modes is active.
	Turning the hydromassage on/off (only for ORIONMED Balneo).
	Opening/closing the water discharge valve (only for ORIONMED Balneo).
	Start/finish filling the bathtub. Automatic filling lasts until next water level is reached, indicated by 2 (for the 1st level) or 3 (for treatment level) sounds of a buzzer. In case of filling up to the highest sensor, only filling up is possible, which can be done by holding the button.
	Go to bathtub conservation function choice Screen.
	Go to the next setting screen. Secondary setting screens are displayed in undermentioned order.
START STOP	Start/stop the bath. If the water level is not sufficient to start the bath, a buzzer will signal with a short sound.

After 3 minutes of inactivity in the bath setting mode, the Welcome screen will be displayed.

Return from secondary settings screen to the Main screen will occur automatically after 10 seconds of inactivity.

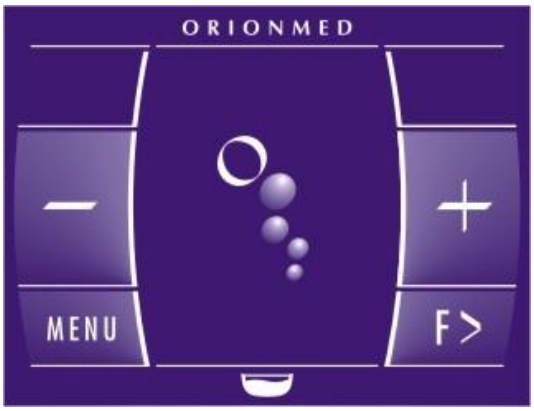
6.5. Bath duration settings screen

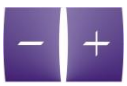
Is not available during bath. LED diode glows continuously in blue.

Button	Description
	Regulation of the bath duration in the scope of 5 to 30 minutes.
	Return to the Main setting screen.
	Move to the next settings screen.
START STOP	Start the bath. If the water level is not sufficient to start the bath, a buzzer will signal with a short sound.

6.6. Intensity of pearl bath settings scren

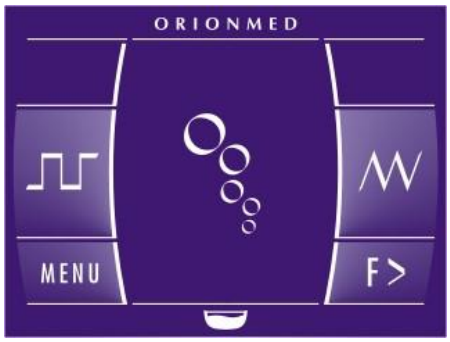
LED diode glows continuously in blue.



Button	Description
	Change of intensity of the parl bath from level 1 to 5. The current value of the intensity level is displayed as the number of the filled ’’bubbles” in the central part of the screen.
	Return to the Main setting screen .
	Move to the next settings screen.
START STOP	Start/stop the bath. If the water level is not sufficient to start the bath, a buzzer will signal with a short sound.

6.7. Additional pearl bath settings screen (only for ORIONMED bathtub)

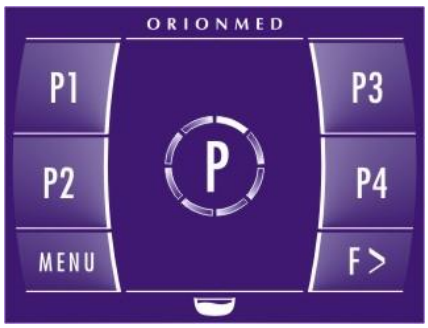
LED diode glows continuously in blue.

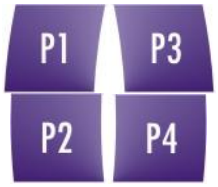


Button	Description
	Rectangular procedure of massage intensity
	Sawtooth procedure of massage intensity. If none of the modes is chosen, the intensity of the pearl bath is constant.
	Return to the Main settings screen.
	Move to the next settings screen.
START STOP	Starting/stopping the bath. If the water level is not sufficient to start the bath, the buzzer will signal this with a short squeal.

6.8. Default program selection screen (only for ORIONMED bathtub)

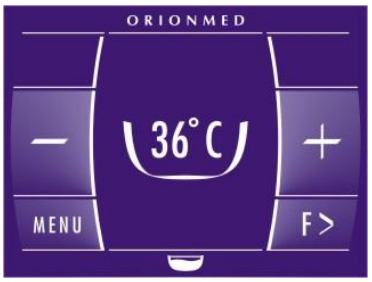
Not available during bath. LED diode glows continuously in blue.

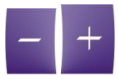


Button	Description
	The selection of a programmed bath sequence P1, P2, P3 or P,4.·If none of the programs is selected. The bath is conducted in accordance with the previous settings. The operating zones can be changed during the bath.
	Return to the Main settings screen.
	Move to the next settings screen.
START STOP	Start the bath. If the water level is not sufficient to start th bath, a buzzer will signal with a short sound.

6.9. Temperature settings screen (only for ORIONMED bathtub)

LED diode glows continuously in blue.

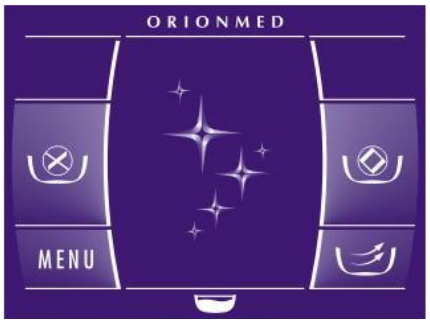


Button	Description
	Selection of the requested bath temperature within a 30-40°C range.
	Return to the Main settings screen.
	Move to the next settings screen.
START STOP	Start/stop the bath. If the water level is not sufficient to start th bath, a buzzer will signal with a short sound.

The heater used for the water temperature maintenance in the bathtub works only when the water of whip pump for underwater massage is also operating. In product without the zone division, this function is inactive.

6.10. Conservative functions settings screen.

LED diode glows continuously in blue or flashes, signaling the possibility of the launch of a selected function.



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Button	Description
	Disinfection selection
	Descalation selection
	Selecting air duct drainage
	Selecting the flushing mode of the hydromassage ducts
	Return to the Main settings screen.
START STOP	Starting the selected function. If the necessary conditions for starting a selected function are not complied with (for decalcification - the operating water level, for disinfection - the operating water level and the presence of disinfection liquid, for drainage - an empty bath), the buzzer will signal it with a short beep.

6.11. Disinfection

Before starting the disinfection process, make sure that there is disinfectant in the tank (fig.1 pos.10, fig.2 pos.9).

Before starting the program, fill the bathtub basin with water to treatment level (II level). Disinfection proceeds as follows:

1. Start of the water pump.
2. Dosing of disinfectant.
3. The water pump switches off 3 minutes after the start of the program.
4. After an interval of 20 minutes, the water pump switches on again for 3 minutes.

Pressing the START/STOP button will stop disinfection and display the Settings Main Screen. The diode lights up continuously blue. The remaining disinfection time is shown on the display. Additional information on the disinfection process is described in section 8.2 below

6.12. Descalation

WARNING!

The signalisation of descalation request will dissappear, and a new countdown will show only when the complete descalation proces is done, meaning that it finished automatically after the given time.

The purpose of descaling is to prevent the build-up of scale caused by the precipitation of impurities and chemical compounds from the treatment water, which obstruct the operation of the pump and reduce the intensity of the treatment carried out, thereby shortening the service life of the device.

Before starting the program, fill the bathtub basin with water to treatment level (II level) and add a descaling agent following the manufacturer's guidelines for the agent. Pressing the START/STOP button will stop descaling and display the Settings Main Screen. The LED diode lights up continuously blue. The remaining disinfection time is shown on the display. Additional information on the disinfection process is described in section 8.5 below.

6.13. Flushing of hydromassage drains (only for ORIONMED Balneo bathtub)

The purpose of flushing the hydromassage channels is to clean them of residual water which that could block the hydromassage jets.

Before starting the process of flushing the hydromassage channels, the bathtub should be emptied of water.

In the first phase of the program, the hydro-massage channels are flushed. Then the air blower is activated to empty and dry the air channels.

The remaining flushing time is shown on the display. The LED lights up continuously in blue.

Pressing the START/STOP button will interrupt flushing and display the Settings Main Screen.

At the first phase, the hydromassage ducts are flushed. Then, the air blower is activated to empty and to dry the air ducts.

6.14. Drying of air channles

Drying the air channels is intended to remove any residual water left after bathing and prepare the bath for the next treatment.

The bathtub should be emptied of water before starting the air channel drying program. A short buzzer sound will appear during an attempt to start drying the air ducts when the tank is full.

The START/STOP diode before the drying process starts blinks indicating readiness to start the process (if the bathtub is not empty the diode lights up continuously). During the drying process the START/STOP diode shines constantly in blue.

During the dehumidification, the air blower is running all the time (it starts at the lowest intensity) and the water discharge valve is open.

The time remaining to complete the air channels drying program is displayed on the device screen. The LED diode glows continuously in blue.

Pressing the START/STOP button will stop the drying and display the Main Screen settings.

6.15. Default programs (only for ORIONMED bathtub)

In the programs the duration of the selected zones opening, as well as optional pearl massage duration is saved. The total treatment duration is divided into intervals which duration is stretched proportionally to the set treatment duration. In the device without the zone division this function is inactive.

Program	Zones activated							
P1	S1, S2, S3	S1	S2	S3	S1	S2	S3	S1, S2, S3
P2	S1		S2		S3		pearl	
P3	S1, S2, S3		S1, S2, S3 + pearl		S1, S2, S3			
P4	Possibility of user configuration							

The selection of one of the programms is signalled on the main screen by the display of **Px** symbol, where x means the program number. During the programmed treatment there is no possibility of change of the massaged zones, the remaining settings are available.

The user has a possibility to record their own treatment sequence (division of the treatment duration into stages) as program P4. In order to do that, in the program selection menu the P4 button should be pressed until the letter P in the symbol located in the centre of the screen turns to red, and then return to the main menu and start the treatment. During the treatment the active zones can be selected. The sequence will be recorded after the treatment is over.

The own sequence recording mode is signalled on the main screen by the display of the P4 symbol in red.

6.16. Water whip control (option only for ORIONMED bathtub)

WARNING!

It is forbidden to use the water whip while the hydromaassage pump is operating.

To switch on the optional whip, there is a separate push-button on the control panel (pos. 11, fig. 1) with an LED indicating activation and a pressure control valve (pos. 13, fig. 1). The water whip can operate in the pre-bath setting state as well as during the bath. To start the whip pump with the settings state the water level of at least the first filling level. If the water level is too low, a short buzzer beep will be heard when attempting to switch on. If the water level falls below the required level, the water whip pump will automatically switch off.

Use the hose from the water whip to wash the bathtub. To do this, unscrew the shower valve (pos. 8 fig.1) and adjust the water temperature with the cold and hot water valves (pos. 2 and 3 fig.1). When washing is complete, turn off all valves.

6.17. Error display

In the event of detecting a malfunction of the device by the program controller, the operation is stopped, and an error number in a ”E xx” format is displayed.

The error is correctly displayed, providing that there has been a problem with the desktop. Detection of an error connected with communication with the desktop is additionally signalled by an intermittent buzzer sound.
Under the number are displayed the software version numbers of the controller and the desktop.
Pressing the START/STOP key results in the reset of the of the controller and enables further operation, if the cause of the error is reverted.

Error number	Cause	Recommended action
E 01	Too low water level during operation (suckers drawing the water to the pump were not covered with water	Check the closing of the discharge and the tightness of the water circuit, fill in the basin with water and start the bath
E 02	Filling timeout (10 minutes default)	Check if the valves for hot and cold water are opened enough, check the closing of discharge and the dightness of the water circuit, fill in the basin with water and start the bath
E 03	Malfunction of water level sensors	Fill in the basin with water and start the bath
E04, etc.	Control system error	Necessary to contact the service

7. PREPARATION FOR USE

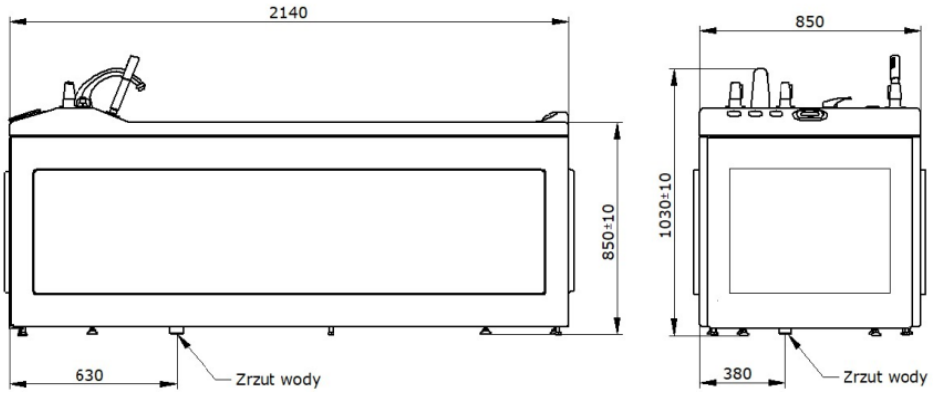


Figure 3a – ORIONMED bathtub dimensions (in mm)

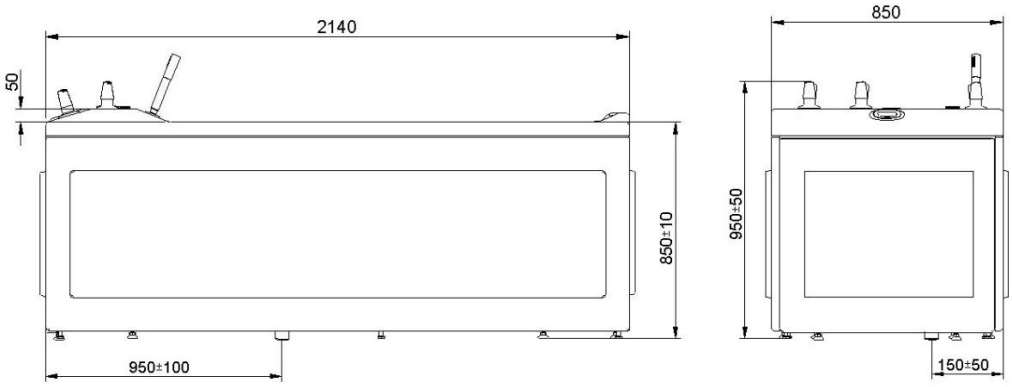


Figure 3b – ORIONMED Balneo bathtub dimensions (in mm)

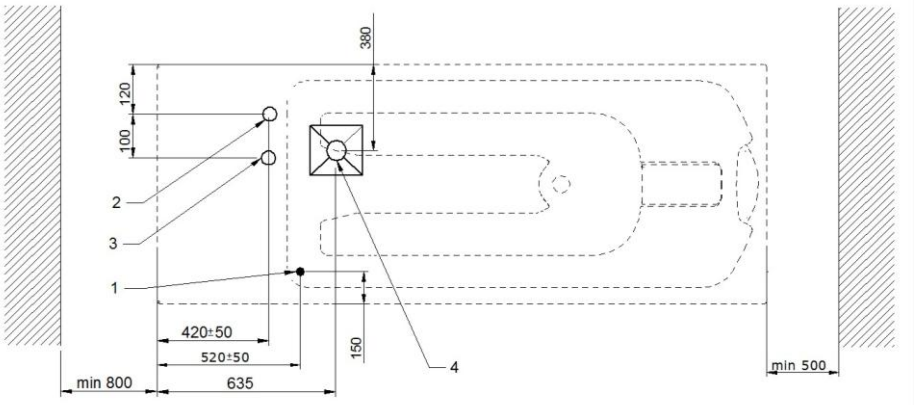


Figure 4a – ORIONMED bathtub layout of media outlets in the floor (dimensions in mm)

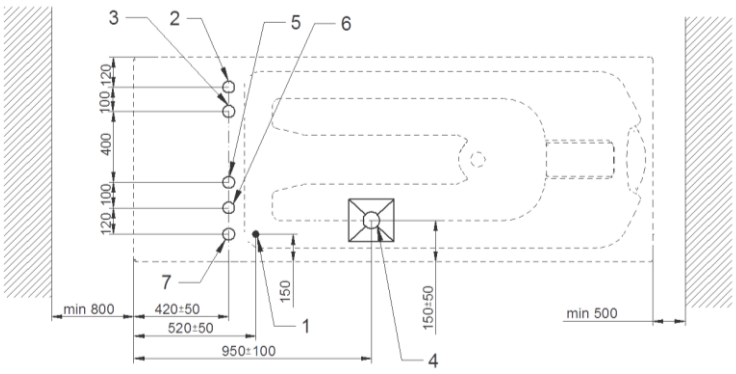


Figure 4b - ORIONMED Balneo bathtub layout of media outlets in the floor (dimensions in mm)

WARNING!

In the room where treatments are carried out in ORIONMED bathtub, ventilation should be provided with an air exchange rate of at least 2 times per hour.

WARNING!

The rooms in which balneological treatments are carried out in an ORIONMED Balneo bathtub should be equipped with bottom gas overflows and in mechanical supply and exhaust ventilation with bottom exhaust to ensure increased air exchange exceeding two times per hour.

In the location of bathtub siting, in the floor there needs to be installed (fig.3 and fig.4):

(1) – power supply connection - look at section 7.1 "Connection to the 230V ~ 50 Hz mains electricity",

(2) – cold water supply, led out of the floor to a height of 10 cm, finished with an external 3/4" thread,

(3) – hot water supply, max 60°C, led out of the floor to a height of 10 cm, finished with an external 3/4" thread,

(4) – draining of the used water to the sewerage (grate with siphon) with drainhole minimum DN 100 with the minimum discharge capacity 3,5 l/s, the water drain is finished with installation elbow D 50,

(5) – cold brine supply led out of the floor to a height of 10 cm, finished with 3/4" external thread (for ORIONMED Balneo only),

(6) – hot brine supply led out of the floor to a height of 10 cm, finished with a 3/4" external thread, (for ORIONMED Balneo only),

(7) – connection pipe supplying water saturated with CO_2 led out of the floor to a height of 10 cm, finished with external thread 3/4" (option for ORIONMED Balneo only).

Recommendations:

- the internal diameter of the utility supply system is min. DN20 over the entire length,
- maximum pressure of the supply media - 6 bar (0.6 MPa),
- place easily accessible valves (e.g. on the wall) in the room to cut off the supply to the unit so that personnel can quickly access the shut-off valves in the event of an installation fault or uncontrolled water leakage from the unit installation.

7.1. Connection to 230V ~ 50Hz mains electricity

WARNING!

To avoid the risk of an electric shock, the device must be connected solely to a power supply grid with grounding.

WARNING!

For the effective electrical power disconnection of the bathtub a twofold power switch is used, located in the room that the bathtub operates in.

The connecting of the bathtub to the electricity ~230 V/50 Hz should be carried out by an authorised electrician. One of the warranty conditions is a validation of the electricity supply connection of the bathtub by an authorised electrictian.

The bathtub for automatic zone hydromassage ORIONMED, ORIONMED Balneo must be ***permanently*** connected to the electrical system.

The bathtub's power supply circuit should have:

- power supply cable led from the floor with a minimum cross-section 3x4 mm^2, length 1,5 mb.,
- a residual current device with rated residual current $\leq$ 30 mA,
- an over-current protection unit with rated current of 25A and type C characteristics,
- a bipolar power switch that disconnects all phases (between the bathtub and the residual current circuit breaker in the room where the bathtub is operating) with a minimum access of 3 mm contacts, in a location that allows easy and quick access by personnel in the event of an emergency. If the switch is not visible from the position of normal use by the operator or service personnel, additional means must be provided to lock in the off position.

The electrical installation to which the device is connected must conform to the requirements of the applicable legislation (PN-HD 60364-7-701, PN-HD 60364-7-710).

7.2. Connecting to the water supply and drainage systems

WARNING!

Bathtub has been properly levelled during the manufacturing process.In case of an uneven floor in the bathtub siting location, the bathtub levelling shoul be done with the outer levelling feet, so the ***central foots stand firmly on the floor****.*

WARNING!

After the installation of the device is completed, do not move the device, as the water system may become unsealed and the electrical system supplying the device may be damaged.

WARNING!

The water used in the bath should be deprived (for example through proper filtering) of solid pollutants that may cause irreversible damage of the valve system. In case of declaring of such cause of the failure, the warranty does not entail its repair.

WARNING!

The temperature of the incoming hot water should be lower than 60°C because of the type of construction materials used. Exceeding of the hot water temperature above 60°C, may cause a bath instalation failure in a short time, and the warranty does not entail its repair.

Drainage should be made with a minimum 100 mm diameter pipe, ending with a grate with siphon, installed in the floor level. The floor around the grate should tilt in its direction.

7.3. Marking of bathtub connection hoses

Each of the connection hoses in the ORIONMED, ORIONMED Balneo bathtub is appropriately colour-coded to differ which medium should be connected to it:

- hose with 1 blue strip – cold water supply,
- hose with 1 red strip – hot water supply,
- hose with 2 blue strips – cold brine supply (for ORIONMED Balneo),
- hose with 2 blue strips – hot brine supply (for ORIONMED Balneo),
- hose with 2 blue strips and mark ″CO2” – cold brine or CO_2 saturated water supply (option for ORIONMED Balneo).

7.4. First start-up of the bathtub

WARNING!

The manufacturer's bath has been completely emptied of water. After refilling with water, the user takes responsibility if there is damage to the bath due to freezing water.

After connecting the bathtub to the water and electrical system in accordance with the user's instructions, it is necessary to discharge the liquid with which the pump has been flooded. To do this, use the pump drain valve located at the bottom of the bath (fig.5, A). When the valve is opened, a green-coloured liquid should drain out. This is a glycerol-based, environmentally friendly antifreeze (down to -25°C), approved by the National Institute of Hygiene. Leave the valve in the open position. The first start-up of the pump should be carried out without a patient in order to flush the water system of the device.

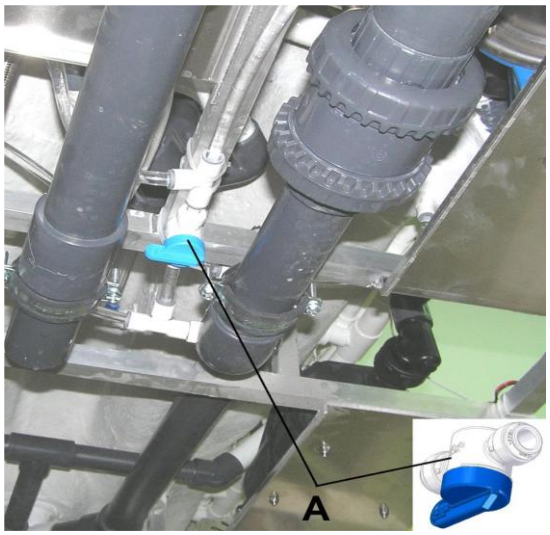


Figure 5 – Pump drain valve location

If the user plans to stop using the device for more than 2 weeks or plans to transport, it is recommended that the device's water system be emptied of water and the pump be flooded with a glycerol-based antifreeze (available from the Meden-Inmed).

To prepare the pump for downtime, perform the following steps:

a) empty the bathtub,

b) empty the bathtub water system from water,

c) disconnect the connection hoses from the water system above the non-return valves (so that water can flow out of the water installation),

d) all the valves should be set to an open position,

e) close the valve responsible for draining the pumps (fig.5, A),

f) remove a suction device cover (fig. 6a) by unscrewing two bolts,

g) using the suction device (fig. 6b), fill the pump with the liquid in the following manner:

- 3,5L for the hydromassage bathtub with the whip pump,
- 1,5L for hydromassage bathtub.

h) Put the cover back and screw the bolts.

The procedure has been completed successfully.

a) **b)**

Figure 6 – A suction device cover

8. MAINTENANCE AND CONSERVATION

8.1. Activity schedule

WARNING!

When the device is left unattended overnight or for an extended period of time, the valves feeding the media to the device must be closed to avoid accidental leakage of the pressurised water system.

Activity	Period of repeating
Washing and disinfecting the basin	each time after treatment
Disinfection of the water system of the appliance	every day after the last treatment
Refilling of disinfectant	every 10 days
Decalcification of the water system	as indicated on the control panel
Electrical safety test	initially – before putting the device into service (after installation), periodically – at least once a year and after each repair
Checking the bathtub step surface condition	periodically, once a day, as described in the warning in section 9
Checking the condition of the ventilation system in the room where the balneological baths are carried out	periodically, at least once a week
Functionality check of the residual current device (RCD)	periodically, in a manner and frequency specified in the technical documentation of the disconnect switch

8.2. Cleaning and disinfecting the basin after each patient

WARNING!

Failure to carry out disinfection or disinfection not in accordance with the manufacturer's instructions may result in a deterioration of the hygienic condition.

Each time after the completing the procedure, the basin must be emptied of water used for the treatment, and then the basin interior must be cleaned and disinfected with the help of a soft sponge or a piece of cloth, saturated with a disinfectant solution (for example Septer, Incidin OxyFoam, San Clear Med, accessible in Meden-Inmed company store) or another cleaner that will not damage the acrylic coating and is allowed for use in the unit. During disinfection, the manual of the disinfectant maker. It is important to point out not to use cleaners or tools that could scratch or damage the basin coating. To rinse the basin after disinfection, the shower should be used. To dry the bathtub, soft cloths that will not scratch the coating should be used. The basin and casing of the bathtub should not be cleaned with highly-corrosive products, as it may result in tarnishing and damage of its surface.

For the cleaning of the tapware, rough sponges or scrubbing products (with abrasives) should not be used, as it may result in tarnishing and damage of its surface. Also, the cleaning products that contain:

- solvents or mineral acids,
- calcium-magnesium sediment cleaning products,
- vinegar,
- products containing acetic acid,
- products intended only for sanitary ceramics should not be used.

Those types of chemical agents cause tarnishing and darkening of the protective coating, and with prolonged contact without a proper rinsing, may cause local or total etching of the coating.

Because the formulas of the available products are change often, it is not possible to guarantee the proper tapware surface. In case of uncertainty, the product should be tested on a invisible tapware spot.

The best way of the everyday maintenance is cleaning the surface with the help of a damp cloth and soap. The surface should then be rinsed with water and dried – preventing from calcium sediments accumulation. If the sediments form nonetheless, the use product named ”GrohClean” is recommended.

Leaving the bathtub filled with water after treatment should be avoided, because the cleaning of the grime will be impeded after emptying.

Once a quarter, the state of the basin surface should be evaluated, and potential scratches and scrapes erased with in conjunction with the manufacturer service.

8.3. Disinfection of the water system of the unit

WARNING!

The manufacturer recommends that the disinfection tank be refilled every 10 days.

WARNING!

If, when refilling the disinfectant, the reservoir fills up too quickly after a small amount of liquid has been poured in, the operation of the control system must be checked.

To carry out the disinfection, start the maintenance mode DISINFECTION. A sufficient level of disinfection fluid in the disinfectant tank is a prerequisite for the start of the mode. If an icon appears in the status bar indicating no disinfectant fluid, top up the disinfectant tank by unscrewing the plug and pouring it in.

Pressing the START-STOP button with the selected disinfection icon in the maintenance mode screen will start the disinfection process. After the measured time has run out in the display, automatic filling of the basin to the appropriate level will start (approx. 250 l of water, all nozzles must be under the water level).
The disinfectant (approx. 125 ml) will be fed into the water system to obtain the required FORTE solution concentration (100 ml per 200 l). The water pump will be switched on for about 3 minutes to distribute the water with the disinfectant throughout the bath water system. It will be switched off for the time set in the controller settings (default 20 minutes for daily disinfection) so that the disinfectant cleans the bathtub water system. It will take another 3 minutes to switch on the pump to force flow in the system.
At the end of this process, the bathtub should be emptied, filled with clean water to the bath level and then hydromassage in zones S1, S2 and S3 should be started for 10 minutes to rinse the bathtub water system.
After rinsing is complete, rinse the bath tub with warm water using the shower.

8.4. Refill of disinfectant

The capacity of the disinfectant reservoir provides for at least 10 disinfection cycles (10 x125 ml). Assuming 1 shift 5 days a week, the liquid in the reservoir should be refilled every 10 days.

8.5. Water system descalation

For descaling you can use the agent "KAMIX" (available for purchase at Meden-Inmed), following the recommendations of its manufacturer's user manual.
The need for descaling is indicated by the flashing of the descaling indicator in the status bar.
Pressing the START-STOP button with the selected DEFAULTING icon in the maintenance mode screen will start the descaling process.
After the measured time in the display has passed, the automatic filling of the container will be started. to the appropriate level (about 250 l of water, all nozzles must be under the water level).
After filling the tub with water, pour a dose of descaling liquid into the tub according to the manufacturer's instructions. The water pump will be switched on and the descaling liquid will be distributed throughout the water system for a specified period of time. After this process, the tub should be emptied, filled with clean water to the level of the bath and then hydromassage in zones S1, S2 and S3 should be started for 10 minutes, to rinse the bath water system. After rinsing is complete, rinse the bath tub with warm water using a shower (or whip)*.*

8.6. Electrical safety inspection

Technical service of the user should perform or contract periodic inspection (no less than once a year and whenever failure / device repair occurs) of the electrical safety of the tub in the following fields:

- ground leakage
- patient leakage (in basin full of water)
- ground path resistance (by the grounding pin on the supporting frame)

It is necessary to record each inspection with a result protocol.
Independently it is necessary to inspect the integrity of the residual-current switch, in a manner and in time set out in the technical documentation of a specific switch.
The control personnel should comply with the instructions provided in the following manual.

9. SEQUENCE OF OPERATION

WARNING!

The operating personnel should pay attention to the water level in the basin when filling. If the water reaches the overflow level, turn off the water supply immediately.

WARNING!

Do not use shampoos or any other strong-foam producing detergents.

WARNING!

Before the patient's enter into the bathtub, check the temperature on the main screen of the control panel not to exceed 37°C, also check with additional termometer.

WARNING!

Do not switch on the pump without the water in the bathtub.

9.1. Filling the basin with water

9.1.1. ORIONMED bathtub

When the device is connected to a power source, the display shows the welcome screen. To start the treatment, switch on the device with the START/STOP button.

To fill the bathtub with water, open the hot and cold water valves, start the filling by touching the button with the FILLING icon  adjust the desired temperature on the MENU screen to a maximum of 37°C. During filling, the temperature of the water poured into the basin is shown (bottom bar on the menu screen ).

To perform the procedure, the bathtub needs to be filled to 1 level, indicated on the main menu screen by the icon  . Filling will be stopped automatically when the desired level is reached. The water is refilled in by continuously touching the field with the above mentioned icon.

9.1.2. ORIONMED Balneo bathtub

When the device is connected to a power source, the display shows the welcome screen. To start the treatment, switch on the device with the START/STOP button.

Before filling, make sure that the water discharge is closed. To do this, press the  icon.

To fill the bathtub with water, open the hot and cold water valves, start the filling by touching the button with the FILLING icon  adjust the desired temperature on the MENU screen to a maximum of 37°C. During filling, the temperature of the water poured into the basin is shown (bottom bar on the menu screen ).

To perform the procedure, the bathtub needs to be filled to 1 level, indicated on the main menu screen by the icon  . Filling will be stopped automatically when the desired level is reached. The water is refilled in by continuously touching the field with the above mentioned icon.

For the ORIONMED Balneo bathtub, the basin is additionally filled via manual valves for cold and warm brine (fig.2 pos.5 and 6) and a CO_2 valve (fig.2 pos. 3 - option) supplying CO_2-saturated water. Remember to turn off the above mentioned valves after filling the basin. After turning off the valves, water can still come out of the spouts.

9.2. Bath with hydromassage

WARNING!

The operating personnel should pay particular attention to the patient's safety during taking up the bath and during leaving the bath. The use of a step to facilitate these activities is only allowed in the presence of the personnel, who should be able to assist the patient during the activities. The surfaces of the step should be wiped dry after each use.

WARNING!

No additives in the form of coarse suspensions, salt and sols or mixtures of powdered solids, that could block the pearl nozzle holes on the bottom of the basin, should be used.

WARNING!

The operating personnel should pay particular attention to the patient's safety when adding hot water.

WARNING!

Periodically, once a day, check the condition of the step surface if it is not dirty or cracked. In case of dirt wipe with a damp cloth, in case of a crack the use of the step is forbidden. In case of abrasion/damage of the structural step surface the use of the step is forbidden.

Order of operations:

1. After filling the bathtub to level I (see section 9.1), the patient, assisted by personnel takes a place in the bathtub. The moment when the patient sits down in a half-lying position in the bathtub is the start of the bath.
2. Select one of the factory bath programmes (see section 6.4 above). Please note that it is not possible to change the programmed treatment at the time of setting. It is possible to adjust the time. Select the bath time settings screen with the button  and return to the main menu.
3. Press the START/STOP button. If you hear a beep and the icon  is displayed, this means that there is not enough water in the bathtub to start the selected treatment. Press the filling button  to top up the water to the required treatment level II. As filling process is complete, you will hear a beep and the icon  will be displayed.
4. To start treatment, press the START/STOP button.
5. After the treatment, the patient, assisted by the personnel, leaves the bathtub.
6. To empty the ORIONMED bathtub, open the lever (fig.1 pos.15).
7. To empty the ORIONMED Balneo bathtub, press the water discharge button  .
8. After emptying the bathtub, perform the following hygienic measures:
   - activate the flushing programme of the hydromassage water channels to remove residual salt from the water system (see section 6.13 above),
   - wash and disinfect the basin - see section 8.2 above,
   - start the air channel drying program to remove residual water from the channels (see section 6.14 above),
   - wipe the bathtub dry with a soft sponge or cloth.

9.3. Pearl bath – applies to ORIONMED, ORIONMED Balneo (option) bathtub

WARNING!

Do not use preparations applied in the form of coarse suspensions, sols or mixtures of grinded solids, as they may block the pearl nozzles in the basin.

WARNING!

Do not use suspension forming additives for bathing e.g., liquid mud, milk, chocolate, beer or additives in the form of powders, as this may block the nozzles of the pearl massage system.

WARNING!

Do not start the pearl massage during the carbonic acid bath in the ORIONMED Balneo bathtub.

Selecting the pearl bath program (see section 6.4) on the Main screen and pressing the STRAT/STOP button will start the pearl massage. For the air blower to work properly, a water level corresponding to at least the first filling level of the bathtub is required. The intensity of the pearl massage can be adjusted on the Settings screen (see section 6.6).

9.4. Brine bath – applies only to ORIONMED Balneo bathtub

WARNING!

Due to the different salt concentrations of the treatment water, it is necessary to pre-fill the bath manually using the brine valve.

WARNING!

Methods of preparation and performing of brine bath treatments should be defined by the organization which uses the equipment, in the form of obligatory instructions. This manual contains only the minimum necessary information relating to this subject.

1. Press the fill button  . The bathtub will start to fill with water. If necessary, adjust the water temperature using the hot and cold water valves. The bathtub will fill to the first filling level  .
2. Patient assisted by personnel takes a place in the bathtub.
3. Fill the bathtub with brine until you obtain water of the desired salinity and temperature. Use cold water to correct the temperature and salinity of the resulting mixture.
4. Select one of the factory set bath programmes (see section 6.4 above).
5. To start the treatment, press the START/STOP button.
6. When the treatment is completed, the patient, assisted by the staff, leaves the bathtub.
7. To empty the bathtub, press the water discharge button  .
8. After emptying the bathtub, perform the following hygienic measures:
   - activate the flushing programme of the hydromassage water channels to remove residual salt from the water system (see section 6.13 above),
   - wash and disinfect the basin - see section 8.2 above,
   - start the air channel drying program to remove residual water from the channels - see section 6.14 above,
   - wipe the bathtub dry with a soft sponge or cloth.

9.5. Carbonic acid bath – option only for ORIONMED Balneo bathtub

WARNING!

Methods of preparation and performing of the carbonic acid bath treatments should be defined by the organization which uses the equipment, in the form of obligatory instructions. This manual contains only the minimum necessary information relating to this subject.

WARNING!

The maximum temperature of CO_2-saturated water must not exceed 40ºC, as the patient may suffer burns of other hazards resulting from excessively high water temperatures.

WARNING!

During the carbonic acid bath there is a possibility that, despite absorbing the carbon dioxide by patient's skin, it could be inhaled through his lungs. Breathing with air containing increased amount of carbon dioxide may be dangerous! The patient may feel sleepy and weary, therefore, during the carbonic acid bath his wellbeing should be periodically monitored.

WARNING!

The rooms in which balneological treatments are carried out should be equipped with bottom gas overflows and mechanical supply and exhaust ventilation with bottom exhaust to ensure increased air exchange exceeding two times per hour.

WARNING!

In case a carbonic acid bath is being performed, the pearl massage must not be used! Applying the pearl massage function causes fast degassing of water (separation of carbon dioxide from water), due to which it loses its therapeutic qualities.

WARNING!

After draining the basin, water may still leak out of the filling nozzles (fig. 10 pos. A) for approx. 1 minute under the influence of gravity. This leakage should not be stopped by tightening the valves, as it is not caused by their incomplete closing. Tightening the valves "by force" causes faster wear and can lead to failure of the filling installation.

Preparing the carbonic acid bath consists of mixing hot water whose temperature does not exceed 60°C with cold water saturated with CO_2 in such proportion that the resulting temperature of water in the tub passes within the range of 30℃ to 35℃. First fill the clean basin with cold water (until the bottom of the tub is covered), next with hot water and then through supplementary nozzles add the CO_2 saturated water until the desired acidity and temperature are reached. Temperature and acidity of the resulting mix may be adjusted by adding cold water. The moment when the patient is positioned in the bathtub shall be considered a starting point of the bath (it is recommended that the water level line does not run above the patient's heart).

Method of measuring free carbon dioxide in water:

In case there is doubt whether the water prepared for bath is properly saturated with carbon dioxide, a measurement of free carbon dioxide in water should be performed (done e.g. with a KARAT meter – not included with the unit). Carbon dioxide saturation in water is dependent on temperature and should pass within the range from 250 to 990 mg CO_2/dm^3 for carbonic acid water and not less than 1 g CO_2/dm^3 for oxalacetic water at room temperature. Water containing more than 400 mg CO_2/dm^3 is biologically active. Optimum conditions for carbonic acid bath are present at water temperature of 31 - 34°C and carbonic acid content in the range of 1,2 to 1,4 g CO_2/dm^3.

9.6. Bath with water illumination (option)

For bathing with illuminated water effect touch the icon  in the MENU screen to choose the desired water colour. Each contact with the icon will select the next colour, observed in the basin.

LED points numer	Light effects
12, 24 or 36	1. chosen fixed colour: red, green, blue, yellow, light-blue, orange, purple, white
	2. periodically swiched (above) colours
	3. slow, fluent colour change between the primary colours
	4. ”dance” of lights – flickering
	5. fast, fluent change between rainbow colours

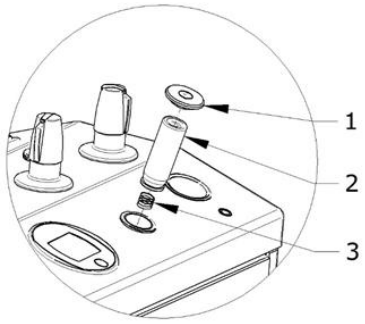
9.7. Bath with aromas (option)

WARNING!

It is important to remember to apply the aroma while the hydromassage pump is running.

The bathtub equipped with the aroma bath system (AROMA option) allows you to have a hydromassage bath with aromatic additives. A single press of the button releases one dose of aerosol aroma from the container. The AROMA option bath includes 4 pieces of replaceable 50 ml aroma containers of different scents (available for purchase from Meden-Inmed).

Replacing the aroma container:



1 – aroma buton (fig.1 pos.9)

2 – fragrance tank

3 – spring

Figure 7 – Replacing the fragrance tank

To replace the aroma container, unscrew the button (fig.7 pos.1), remove the empty container (fig.7 pos.2), insert a new container and screw on the button. Make sure the spring (fig.7 pos.3) is positioned centrally in the opening for the container

9.8. Bath with music (option)

WARNING!

The information contained in this section is a translation of the data contained in the manufacturer's manual for the AUDIO module, which accompanies the device.

WARNING!

It is not recommended to use the AUDIO module at maximum volume for longer than the bath time.

The Power Dynamics BT10 module and the speakers built into the back of the bathtub allows to listen to music from an external source such as a mobile phone. To play music, search for the "POWER DYNAMICS BT10" sound source on the external device and establish a connection. If a password is required, enter the code "1234".

10. AUXILIARY EMPTYING THE BATHTUB – MANUAL only for ORIONMED Balneo

WARNING!

In case of lack of possibility of automatic water discharge (e.g. power failure) in the ORIONMED Balneo bathtub, the bathtub basin can be emptied manually.

To manually empty the basin, open the ball valve (fig.8 pos.1) located under the bathtub in the water discharge area. Turn the valve lever by 90 degrees until you feel resistance. The valve is highlighted in blue in picture 8 below.

Once the bathtub has been completely emptied of water, the ball valve should be closed to prevent loss of water when refilling the bath. To do this, turn the lever of the valve again by 90 degrees in the opposite direction to when the valve was opened.

If the problem with the automatic water discharge system persists, contact the service (see section 11.3).

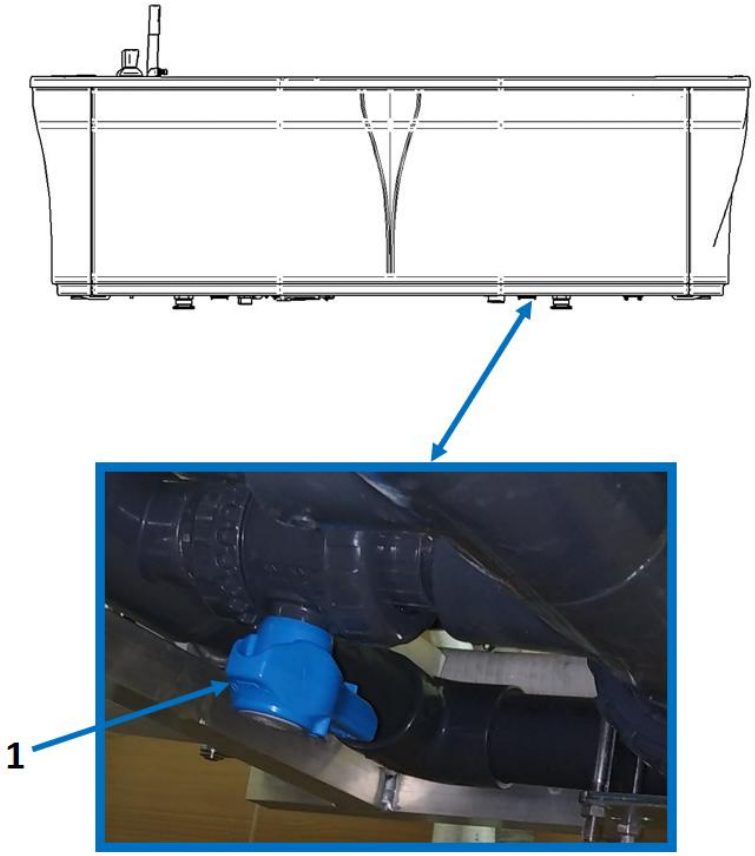


Figure 8 - Location of the manual draining valve

1 – Ball valve

11. CONDITIONS OF MAINTENANCE

WARNING!

The manufacturer will, on demand, turn over the electrical network schemes, parts lists, descriptions helpful during repair of those parts that are allowed to repair by the manufacturer.

11.1. Manufacturer liability

Estimater life is 7 years.

After 7 years from the date of manuacture of the device (and its equipment) the manufacturer is not liable for device and its equipment defects as well as the resulting consequences. The manufacturer is also not liable for consequences the user and patient put themselves, resulting, for example, from incorrectly installed device, or being the result of misdiagnosis, misuse of the device and its equipment, misinterpretation or not following the manual, as well as conducting repairs by unauthorised personnel.

11.2. Troubleshooting

Malfunction	Probable cause - procedure
No informatiion on the LDC screen	Check the state of: - over current protection, - residual current circuit breaker, - main bathtub switch. Check the power supplt cord. Turn off the power and contact the service.
After water discharge, there is still water in bathtub	Level the tub siting
While discharging, the water spills under the bathtub	The grate will not let water through – clean the grate, alternatively exchange with a larger overflight grate
An unpleasant smell emanates from the bathtub	Perform regular disinfection
Water leaks from the shower head connection	Check (replace gasket if necessary), tighten the connection
Water does not flow when filling has been started	No water in circuit – check if the main shut-off valve is open No water supply Electrovalve crash – call manufacturer service
Water pressure during filling is too low	Possibility of contamination of the thermomixer filters. Clean the filters and adjust the thermomixer according to the instructions
The temperature of the water poured into the bath deviates from the temperature set on the thermomixer	Adjust the thermomixer
Uncontrolled filling of the bathtub with water	Electrovalve crash – turn off the tub power with the main switch, close the shut-off valves, call the manufacturer service

11.3. Service contact

Meden-Inmed Sp. z o.o.

ul. Wenedów 2

75-847 Koszalin

Tel. (94) 344 – 90 – 48

e-mail: service@meden.com.pl

If you buy the device with an intermediary, please kindly provide information about the serial number and location of the device. These data will be placed in our service base, which will allow us to efficiently implement the terms of the warranty and service.

12. STORAGE AND TRANSPORT

Transport and storage of the tub should be carried out in the manufacturer's transport packaging.

The device can operate under the following conditions:

- Temperature within the range of +10°C do +40°C;
- Relative humidity in the range from 30% to 75% without condensation;
- Atmospheric pressure within the range of 700-1060 hPa.

The device should be stored under the following conditions:

- Temperature within +0°C do +60°C;
- Relative humidity does not exceed 75% without condensation;
- Atmospheric pressure in the range of 700-1060 hPa.
- Indoor room.

Recommended conditions during transport:

- Temperature in the range of +0°C do +60°C;
- Relative humidity within the range from 20% to 95% without condensation;
- Atmospheric pressure within the range of 700-1060 hPa.

13. ELECTROMAGNETIC COMPATIBILITY

WARNING!

Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

WARNING!

Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

WARNING!

The EMISSIONS characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

WARNING!

Device may be susceptible to electromagnetic disturbances, but Basic Safety and Essential Performance are maintained.

Electrical medical devices require special care in respect to electromagnetical compatilibity (EMC) and must be installed and activated in respect t the information on EMC in this manual.

Mobile and portable means of radio communication might influence the ORIONMED, ORIONMED Balneo bathtub operation.

Essential functioning - the documentation of the risk management process shows a missing essential functioning characteristic for this product *.

* Therapeutic bathtub for automatic zone hydromassage ORIONMED, ORIONMED Balneo

Instructions and declaration of manufacturer – electromagnetic emissions		
ORIONMED, ORIONMED Balneo bathtub is intennded for use in the below specificated electromagnetical environment. The purchaser or user of the ORIONMED, ORIONMED Balneo bathtub must provide such environment.		
Emissions test	**Compatibility**	**Instructions on the electromagnetic environment**
RF emissions CISPR 11	Group 1	ORIONMED, ORIONMED Balneo bathtub uses the RF energy only for its internal functions. Due to that fact, the RF emissions of the device is very low and should not cause any distortion in electronical devices in proximity.
RF emissions CISPR 11	Class A	ORIONMED, ORIONMED Balneo bathtub can be used in every facility other than apartament buildings and buildings connected directly connected to the low-voltage grid, supplying buildings intended for accomodation purposes.
Harmonic emissions IEC 61000-3-2	none	
Voltage variation/light flickering IEC 61000-3-3	none	

Instructions and declaration of manufacturer – electromagnetic resistance			
ORIONMED, ORIONMED Balneo bathtub is intennded for use in the below specificated electromagnetical environment. The purchaser or user of the ORIONMED, ORIONMED Balneo bathtub must provide such environment.			
Resistance test	**Testing level IEC 60601**	**Level of compliance**	**Electromagnetical environment — guidelines**
Electrostatic discharge (ESD) IEC 61000-4-2	+/- 8 kV (contact) +/- 2/4/8/15 kV (air)	+/- 8 kV (contact) +/- 2/4/8/158 kV (air)	The floor should be made of wood, concrete or ceramic tiles. If the material is synthetic, relative humidity should amount at least 30%.
Fast electrical transition IEC 61000-4-4	± 2 kV for supply line 100 kHz	±2 kV for supply line 100 kHz	The supply quality should be typical for commercial or hospital.
Surge resistance IEC 61000-4-5	± 1 kV line(e) to line ± 2 kV line to earth	± 1 kV line(e) to line ± 2 kV line to earth	The supply quality should be typical for commercial or hospital.
Short cuts, drops and changes in voltage on the power lines IEC 61000-4-11	0% U_T; 0°, 45°, 90°, 135, 180°, 225°, 270°,and 315° for 0,5 cycle 0% U_T; *1* cyckle and 70 % U_T; (50/60) for 25/30 cycles 1 faze for 0° 0% U_T; (50/60 HZ) for 250/300 cycles	0% U_T; 0°, 45°, 90°, 135, 180°, 225°, 270°,and 315° for 0,5 cycle 0% U_T; *1* cyckle and 70 % U_T; (50/60) for 25/30 cycles 1 faze for 0° 0% U_T; (50/60 HZ) for 250/300 cycles	The supply quality should by typical for commercial or hospital. If the user of the ORIONMED, ORIONMED Balneo bathtub requires to continue the work during power outage, it is recommended to supply the ORIONMED, ORIONMED Balneo bathtub with uninterruptable power or a battery.
Resistance to magnetic field with grid frequency (50/60 Hz) IEC 61000-4-8	30 A/m	30 A/m	Magnetic field of the power grid frequency should be typical for commercial or hospital.
WARNING U_T is a line voltage AC before the implementation of test level.			

Instructions and declaration of manufacturer – electromagnetic resistance			
ORIONMED, ORIONMED Balneo bathtub is intennded for use in the below specificated electromagnetical environment. The purchaser or user of the ORIONMED, ORIONMED Balneo bathtub must provide such environment.			
Resistance test	**Testing level IEC 60601**	**Level of compliance**	**Electromagnetical environment — guidelines**
RF conducted IEC 61000-4-6	3 V 0,15MHz - 80MHz 6 V in ISM range 0,15 MHz – 80 MHz 80 % AM, 1 kHz	3 V 0,15 MHz – 80 MHz 6 V in ISM range 0,15 MHz – 80 MHz 80 % AM, 1 kHz	WARNING: Portable radio communications equipment (including peripheral equipment such as antenna cables and external antennas) should not be used closer than 30 cm (12 inches) to any part of the product*, including cables specified by the manufacturer.Otherwise, the operation of this equipment may be impaired. These instructions may not apply to all situations. Electromagnetic propagation is influenced by absorption and reflection from structures, objects and people.
RF radiated IEC 61000-4-3	3 V/m 80 MHz to 2,7 GHz	3 V/m 80 MHz – 2,7 GHz	
Proximity fields from RF wireless communications equipment IEC 61000-4-3	EN 60601-1-2:2015 Table 9	Pass	
	☒ *Professional medical care environment*	☒ *Professional medical care environment*	

14. WARRANTY CARD

1. The seller (authorised representative, distributor) provides a 24-month warranty on the bathtub supplied and a 12-month warranty on the pearl bath blower. The warranty period runs from the date of sale as shown on the sales document
2. The seller (authorised representative, distributor) is responsible for any faults whether in quality or quantity occurring immediately after unpacking the product from its original shipment packaging only if they have been reported in a written form within 2 working days following the delivery.
3. The warranty will be fulfilled only by the authorised service team of the seller (authorised representative, distributor) or other technical service authorised by the manufacturer.
4. A repair time exceeding 3 days shall result in the extension of the warranty period by a time equivalent to the total time during which the device was out of order.
5. In case a faulty subassembly has already been repaired three times, the manufacturer shall be obliged to replace a faulty subassembly with a new one.
6. The user must ensure all the maintenance service described in the manual in order to benefit from the warranty coverage.
7. In case the installation and operation instructions have not been observed, the manufacturer shall bear no responsibility for the safety of the user or patient during the use of the unit.
8. The warranty does not cover faults of parts and materials resulting from natural wear and tear, which means faults other than material or workmanship, as well as faults resulting from poor or no maintenance (e.g. valves, bearings, guides, fans etc.).
9. The seller (authorised representative, distributor) shall bear no responsibility for any loss, whether consequential or incidental, including loss of profits or costs incurred that result from a failure to follow the instructions set out in the installation and user manual.
10. The seller (authorised representative, distributor) shall bear no responsibility resulting from this warranty for any loss, whether consequential or incidental, including loss of profits or costs incurred by failure of the equipment.
11. Faults that occur within the warranty period and are not reported to the authorised service are not covered by the warranty.
12. Costs resulting from an unfounded claim shall be borne by the user.
13. The warranty shall not cover equipment:
    - damaged as a result of fire and lightning or force majeure,
    - with a name plate and/or serial number or factory seals removed or damaged,
    - damaged due to its use in a manner other than defined in the operation manual,
    - where repairs or modifications have been done by unauthorized personnel,
    - damaged mechanically due to improper handling or transportation.
14. In case the equipment covered by the warranty has been re-sold, no new warranty document will be issued.
15. The warrantor shall not issue a duplicate of the Warranty Card.
16. This warranty does not exclude, limit or suspend your consumer statutory rights.

Therapeutic bathtub ORIONMED, ORIONMED Balneo serial number: _____

Date, signature and stamp of the Warranter: _____

Bathtub installed by: _____

Date, signature and stamp of the Installator: _____

Repair record	User notes

Electrical safety inspection		Date and signature of the inspector
Protocol number:		
Inspection result:		
Next inspection after no longer than 12 months		
