


# Prevention and treatment of hypothermia

## Products & Solutions

Made in Belarus CE-marked

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# Thermo

## WARMING CABINET

Warming cabinet intended for warming of IV fluids, irrigation solutions, linens and blankets.

### FEATURES

- 24h set temperature maintenance
- Uniform warming of fluids and linen
- Fast warming time (20-60 min depending on the set and ambient temperatures)
- Different sizes available (120, 180, 360 lt)
- Dual compartment models
- Stainless steel structure

### APPLICATION

Can be installed in pre-operating rooms, nurse's stations, examination and medical treatment rooms, etc.

### CONTROL SYSTEM

- LED display
- Indication of current and set temperatures
- Indication of time since heating start
- 2 heating modes: «Solutions» and «Linen»
- Door open indicator
- Audible and visual alarms
- RFID-card for control panel locking
- Self-diagnostic system at the power-up





- Stainless steel shelves
- Extendable and removable shelves for convenient use and easy disinfection of internal surfaces
- Door lock
- Left- or right-hinged door



## MODULAR SYSTEM

Combination of models with control panel for each compartment:

- S+S
- M+M
- M+S
- L+S



Thermo S



Thermo M



Thermo L

Volume	120 litres	180 litres	360 litres
Dimensions (Width x Depth x Height)	670x640x580 mm	670x640x840 mm	670x640x1450 mm
Number of shelves	2	3	5
Weight	50 kg	60 kg	75 kg
Maximum power consumption	250 W	450 W	700 W
Supply voltage / frequency	110-230 VAC, 50/60 Hz		
Temperature settings	34°C - 60°C		
Temperature increment	0.5°C		
Average warming time (at an initial t 20°C)			
- to 34°C	20 min		
- to 42°C	35 min		
- to 60°C	60 min		
Continuous operation	24h		
Electric shock protection class	B/I		
Protection class	IP23		



## OPTIONS

- Stationary
  - Mobile
- \* Castor wheels with different diameters available

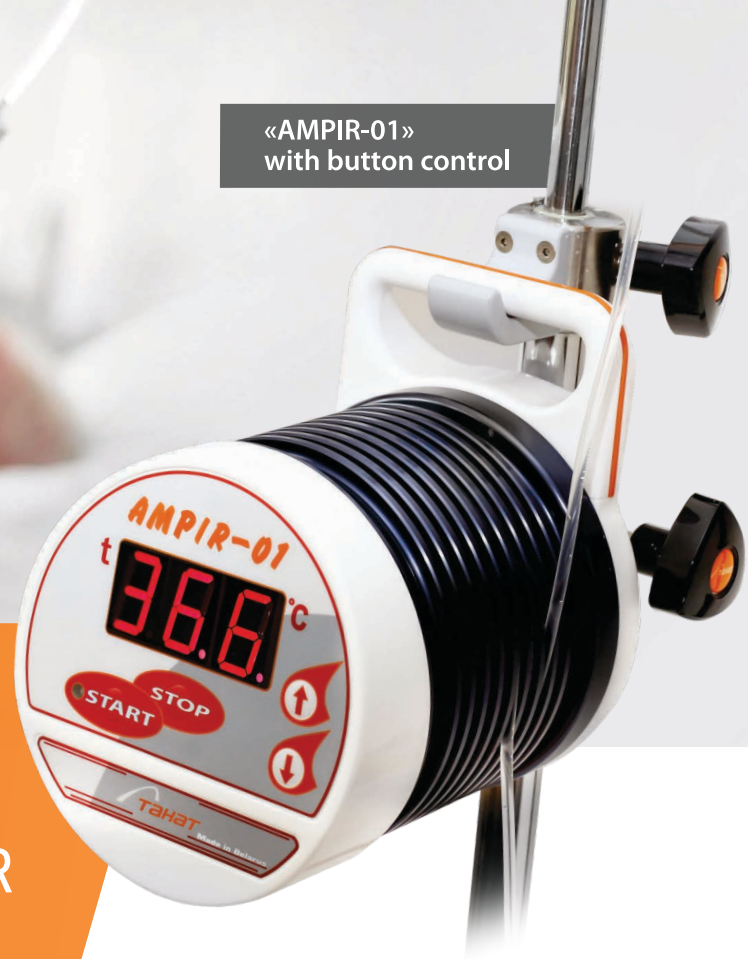


«AMPIR-01»  
with button control

# AMPIR-01

## BLOOD AND IV FLUID WARMER

Prevention and treatment of hypothermia and its complications in perioperative periods



Warming of IV fluids, blood and blood substitutes is the essential criterion of the infusion / transfusion therapy. Everyday use of AMPIR-01 helps to improve patients condition and to reduce complications due to hypothermia.

### AMPIR-01 IS SUITABLE FOR:

- Infusion therapy for children and adults
- Blood transfusion
- Infusion of blood plasma and serum

Can be used in OR, emergency rooms, ICUs and other wards.



«AMPIR-01A»  
with control knob

### FEATURES

- Effective warming, owing to special design and large contact surface of the heat exchanger
- 24h set temperature maintenance
- Secure retention of the IV line in the heat exchanger
- Any standard IV systems can be used
- Constant monitoring of all device systems
- Quick and easy mounting on an IV stand

# AMPIR-01 BLOOD AND IV FLUID WARMER



## HEAT EXCHANGER

- 2-3 winds of the IV line around the heat exchanger are enough for effective warming
- One wind of the IV line around the heat exchanger is 450 mm
- 2 IV lines can be used simultaneously
- Open system. Long standard infusion lines required

## CONTROL UNIT

- LED display
- Heating mode indication
- User settings
- Self-diagnostics at the power-up and during operation
- Audible and visual alarms of high and low temperatures and faulty operations

## MOUNTING

- The device can be mounted on a stand with a diameter of 15-55 mm
- Secure non-slip mounting



## TECHNICAL SPECIFICATIONS

Power supply	110-230 VAC, 50/60 Hz
Average power consumption	30 W/h
Maximum power consumption	180 W/h
Temperature settings	34°C - 41.5°C
Temperature increment	0.1°C
Warm-up time	up to 5 min
Continuous operation	24 h
IV line diameter	4-5 mm
Electric shock protection class	B/I
Protection rating	IP 23
Dimensions	225×195×170 mm
Weight	2.8 kg

## IV STAND (optional accessory)

- Made of polished stainless steel
- Holder for vials and IV bags
- Utility shelf
- Equipment mounting hook
- 5 non-marking castor wheels (2 with brakes)

# AMPIRmini

## COMPLEX FOR WARMING OF BLOOD AND IV FLUIDS

Prevention and treatment of hypothermia and its complications in perioperative period.

### AMPIRmini WITH ONE EXTERNAL HEAT EXCHANGER



### AMPIRmini WITH TWO EXTERNAL HEAT EXCHANGERS

Suitable for infusion / transfusion of blood, plasma, serum, IV fluids, infusion of nutrient solutions through nasal and enteral probes.

Can be used in OR, emergency rooms, ICUs and other wards.



MOUNTING ON IV STAND

CONTROL UNIT FOR EACH HEAT EXCHANGER

EXTERNAL HEAT EXCHANGER



# AMPIRmini

COMPLEX FOR WARMING  
OF BLOOD AND IV FLUIDS

Device operating principal is based on a continuous heating of IV fluids, blood and blood substitutes, nutrient solutions.



## CONTROL UNIT

- LED display indicates current temperature
- Separate control buttons
- 2 operating modes:
  - Manual mode: the temperature can be set between 34°C and 42°C with 0.1°C increments;
  - Auto mode: temperature is maintained at 36.6°C
- Audible and visual alarms, self-diagnostics at the power-up and during operation

## EXTERNAL HEAT EXCHANGER

- Designed for one or two IV lines (adults or adults + infants)
- The heat exchanger can be mounted very close to the injection site, providing minimum distance from the heat exchanger to the patient.
- Max. flow rate is up to 520 ml/h (with 2 IV lines) or 900 ml/h (with 1 IV line)
- Open system. Long standard infusion lines required
- Duralumin heating plate: high thermal conductivity, durability and resistance to mechanical stress



## TECHNICAL SPECIFICATIONS



Power supply	110-230 VAC, 50/60 Hz
Average power consumption	40 W/h
Temperature settings	34°C to 42°C
Temperature increment	0.1°C
Warming-up to 37 °C	2 min
Continuous operation	24 h
Electric shock protection class	BF/I
Protection rating	IP 23
Weight of AMPIRmini with two external heat exchangers	2.1 kg

## MOUNTING

- The device can be mounted on a stand with a diameter of 15-55 mm
- Secure non-slip mounting



# AMPIRmini

## PORTABLE BLOOD AND IV FLUID WARMER

Prevention and treatment of hypothermia and its complications outside the hospital

BATTERY POWERED

### FEATURES

- Compact portable device
- Suitable for infusion / transfusion of blood, plasma, serum, IV fluids, infusion of nutrient solutions through nasal and enteral probes
- Can be used out of healthcare facilities: air medical service, ambulances, disaster medicine, field hospitals, home treatment
- Designed for both children and adults
- 24h set temperature maintenance
- Protection against overheating
- Operation from a built-in battery (3-5 hours), car 12V socket or electric mains
- Designed for one or two standard IV lines

INTEGRATED HEAT EXCHANGER

TEMPERATURE DISPLAY

CONTROL PANEL



WARMING DEVICE CLAMP

BUILT-IN BATTERY UNIT

CHARGING PANEL





# AMPIRmini PORTABLE BLOOD AND IV FLUID WARMER

Device operating principal is based on a continuous heating of fluids. The heat exchanger heats the IV line and fluids inside it.

## CONTROL UNIT

- LED display indicates current temperature
- Separate control buttons
- 2 operating modes:
  - Manual mode: the temperature can be set between 34°C and 42°C with 0.1°C increments
  - Auto mode: temperature is maintained at 36.6°C
- Audible and visual alarms, self-diagnostics at the power-up and during operation

## MOUNTING BELT

The device can be mounted very close to the patient: on an IV stand, near the injection site to the patient, bed or stretcher.

## BUILT-IN BATTERY UNIT

- Built-in battery-powered operation for 3-5 hours (depending on ambient conditions)
- Simultaneous operation and charging
- Connection to a car 12V socket
- Charging panel
- Clamp for control unit mounting

## INTEGRATED HEAT EXCHANGER

- Designed for one or two IV lines (adults or adults + infants)
- Max. flow rate is up to 520 ml/h (with 2 IV lines) or 900 ml/h (with 1 IV line)
- Open system. Long standard infusion lines required



## TECHNICAL SPECIFICATIONS

Warming device power supply	24 V	Continuous operation	24 h
External power supply	110-230 VAC, 50/60 Hz	Continuous battery operation	3-5 h
Average power consumption	30 W/h	Electric shock protection class	BF/I
Temperature settings	34°C to 42°C	Protection rating	IP 23
Temperature increment	0.1°C	Warming device weight (w/o battery unit)	0.3 kg
Warming-up to 37 °C with battery unit	2 min		
	5 min		





# AMPIRmini

## STATIONARY BLOOD AND IV FLUID WARMER

Prevention and treatment of hypothermia and its complications in perioperative period.

Suitable for infusion / transfusion of blood, plasma, serum, IV fluids, infusion of nutrient solutions through nasal and enteral probes.



Can be used in OR, emergency rooms, ICUs and other wards for both children and adults.

### FEATURES

- Compact warming device
- 24h set temperature maintenance
- Protection against overheating
- Designed for one or two standard IV lines
- Infusion therapy with low infusion rate
- Duralumin heating plate: high thermal conductivity, durability and resistance to mechanical stress
- No additional expendables required



BELT FOR MOUNTING

INTEGRATED HEAT EXCHANGER

CONTROL PANEL

# AMPIRmini

STATIONARY BLOOD  
AND IV FLUID WARMER

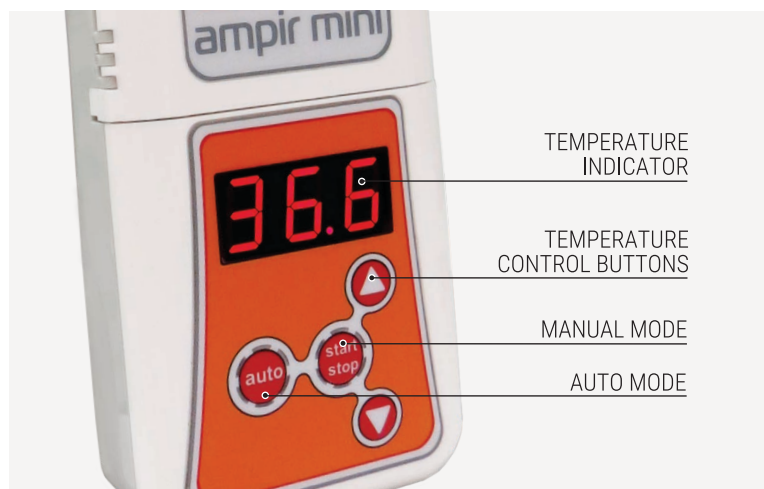
Device operating principal is based on a continuous heating of fluids. The heat exchanger heats an IV line and a fluid inside it.

## CONTROL UNIT

- LED display indicates current temperature
- Separate control buttons
- 2 operating modes:
  - Manual mode: the temperature can be set between 34°C and 42°C with 0.1°C increments;
  - Auto mode: temperature is maintained at 36.6°C
- Audible and visual alarms, self-diagnostics at the power-up and during operation

## INTEGRATED HEAT EXCHANGER

- Designed for one or two IV lines (adults or adults + infants)
- Max. flow rate is up to 520 ml/h (with 2 IV lines) or 900 ml/h (with 1 IV line)
- Open system. Long standard infusion lines required



## MOUNTING BELT

The device can be mounted very close to the patient: on an IV stand, near the injection site to the patient, bed or stretcher.



## TECHNICAL SPECIFICATIONS

Warming device power supply	24 V
External power supply	110-230 VAC, 50/60 Hz
Average power consumption	30 W/h
Temperature settings	34°C to 42°C
Temperature increment	0.1°C



Warming-up to 37 °C	2 min
Continuous operation	24 h
Electric shock protection class	BF/I
Protection rating	IP 23
Warming device weight	0.3 kg

# RAMONAK-01

## NEWBORN WARMING SYSTEM

Fast, effective and safe warming of newborns for prevention and treatment of hypothermia and its complications. Additional warming of neonates and infants with temperature instability

### FEATURES

- Baby bed allows a newborn to take comfortable position, creating relaxing effect
- The water mattress makes the baby feel like being next to the mother's warm skin
- 24h set temperature maintenance
- The system is equipped with all types of alarms, which prevent overheating and other faulty operations
- Open ergonomic system that gives easy access to a baby for nurses and parents



\* Crib is not included



- 1 CONTROL UNIT
- 2 WATER MATTRESS or GEL PAD
- 3 HEATING PAD
- 4 BABY BED



### CONTROL UNIT

- LED displays indicate current and set temperatures
- 24h maintenance of the set temperature
- User settings
- Audible and visual alarms, self-diagnostics at the power-up and during operation
- User warning system
- IP 20 protection class

### BABY BED

- Water mattress and heating pad are placed in a compartment with zip fastener
- Made of special medical fabric
- Prevents a newborn from sliding off
- The system is delivered with 3 baby beds
- Disposable and reusable covers (option)

### HEATING PAD

- Thin and flexible
- Resistant to wear and tear, and disinfectants
- 2 built-in temperature sensors
- IP 45 protection class

### WATER MATTRESS

- Temperature sensor inside the water mattress
- Water capacity ~ 4,5l
- Made of medical transparent PVC resistant to UV

### GEL PAD

- Can be used instead of water mattress
- Protection of skin from pressure sores and nerve damage
- Radiolucent, non-conductive
- Leakproof - even if punctured. Advanced polymer gel doesn't run
- Latex-free, plasticizer and fibreglass free, non-allergenic
- Doesn't support microbiological growth
- Can be easily cleaned using standard detergents

### TECHNICAL SPECIFICATIONS



Power supply	110-230 VAC, 50/60 Hz
Heating pad voltage supply	24 V
Average power consumption	40 W/h
Temperature settings	34°C - 39°C
Temperature increment	0.1°C
Heating time of water mattress to 39° C	240 min
Heating time of gel pad to 39°C	90 min
Continuous operation	24 h
Electric shock protection class	BF/I
Water mattress dimensions	600x320 mm
Gel pad dimensions	620x340 mm



# RAMONAK-03

## PATIENT WARMING SYSTEM WITH GEL PAD

Fast, effective and safe warming of patients for prevention and treatment of hypothermia and its complications in perioperative period

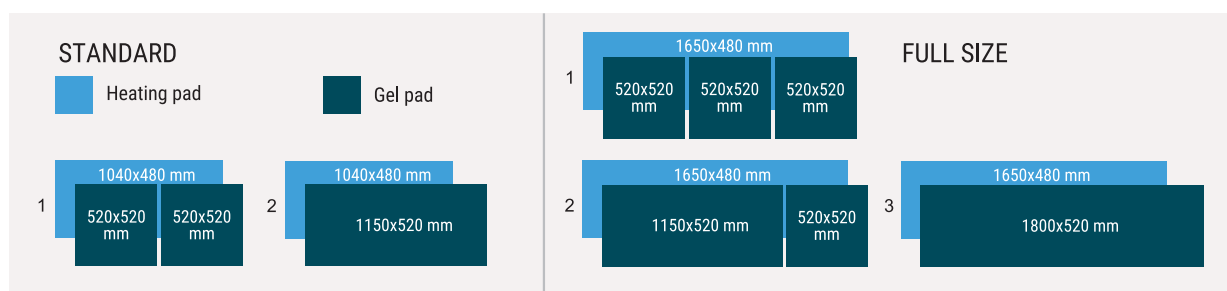


Surgical interventions, heavy injuries and burns are constantly accompanied by the hypothermia. Proper maintenance of patient's body temperature eases post-operative period and further patient's rehabilitation and recovery.

### FEATURES

- 24 h set temperature maintenance
- Even heat distribution
- The system is equipped with all types of alarms, which prevent overheating and other faulty operation
- Flexible heating and gel pads allow to place the warming system on OR tables and beds, as well as examination chairs at any angle
- Gel pads of different sizes and textures available

### DESIGN OPTIONS





### 1 CONTROL UNIT

- LED displays indicate current and set temperatures
- 24 h set temperature maintenance
- User settings
- Audible and visual alarms, self-diagnostics at the power-up and during operation
- User warning system



### 2 GEL PAD

- Protection of patients skin from pressure sores and nerve damage
- Radiolucent, non-conductive
- Leakproof - even if punctured. Advanced polymer gel doesn't run
- Latex-free, plasticizer and fibreglass free, non-allergenic
- Doesn't support microbiological growth
- Can be easily cleaned using standard OR environment detergents

### Available sizes

- a** Ribbed gel pad:
  - 520x520x12 mm
  - 1145x520x12 mm
- b** Smooth gel pad (blue):
  - 520x520x10 mm
  - 1150x520x10 mm
- c** Smooth gel pad (green):
  - 520x520x10 mm
  - 1150x520x10 mm
  - 1800x520x10 mm

### 3 HEATING PAD

- Thin and flexible
- Resistant to wear and tear, and disinfectants
- 2 built-in temperature sensors
- Sizes (LxW): 1650x480 mm, 1040x480 mm

### 4 COVER

- Reusable zippered cover
- Non-allergenic, waterproof
- Easy to use, disinfectants resistant



## TECHNICAL SPECIFICATIONS

Power supply 110-230 VAC, 50/60 Hz

Heating pad voltage supply 24 V

Average power consumption:

- Standard pad 100 W/h  
- Full size pad 140 W/h

Temperature settings 34°C - 39°C

Temperature increment 0.1°C

Heating time to 39°C 90 min

Continuous operation 24 h

Electric shock protection class BF/I

Control unit protection class IP20

Heating pad protection class IP45


Gel pad temperature conditions -12°C...40°C





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