

# Julabo

THE TEMPERATURE CONTROL COMPANY

## SHAKING WATER BATHS



ENGLISH

## Display



### Easy to read

Large LED temperature display for actual value and setpoint (display resolution 0.1 °C)



### Several values at a glance

Large Multi-Display (LED), easy to read across the room, for actual value and up to 3 setpoints, warning functions, high temperature cut-off, (display resolution 0.01/0.1 °C)

## Operation



### Clearly structured

Comfortable, splash-proof keypad for setpoint adjustment, high/low temperatures, timer and shaking frequency

## Temperature Control



### Precise

PID Temperature control with set control parameters, temperature stability  $\pm 0.02 \dots \pm 0.2 \text{ } ^\circ\text{C}$



### High measuring accuracy

'Absolute Temperature Calibration' for manual compensation of a temperature difference, 1-point calibration

## Technical Features



### Serial connection

RS232 interface for PC connection, e.g. for data communication and recording of measured values

## Warning & Safety Functions



### Early warning system for high/low temperature

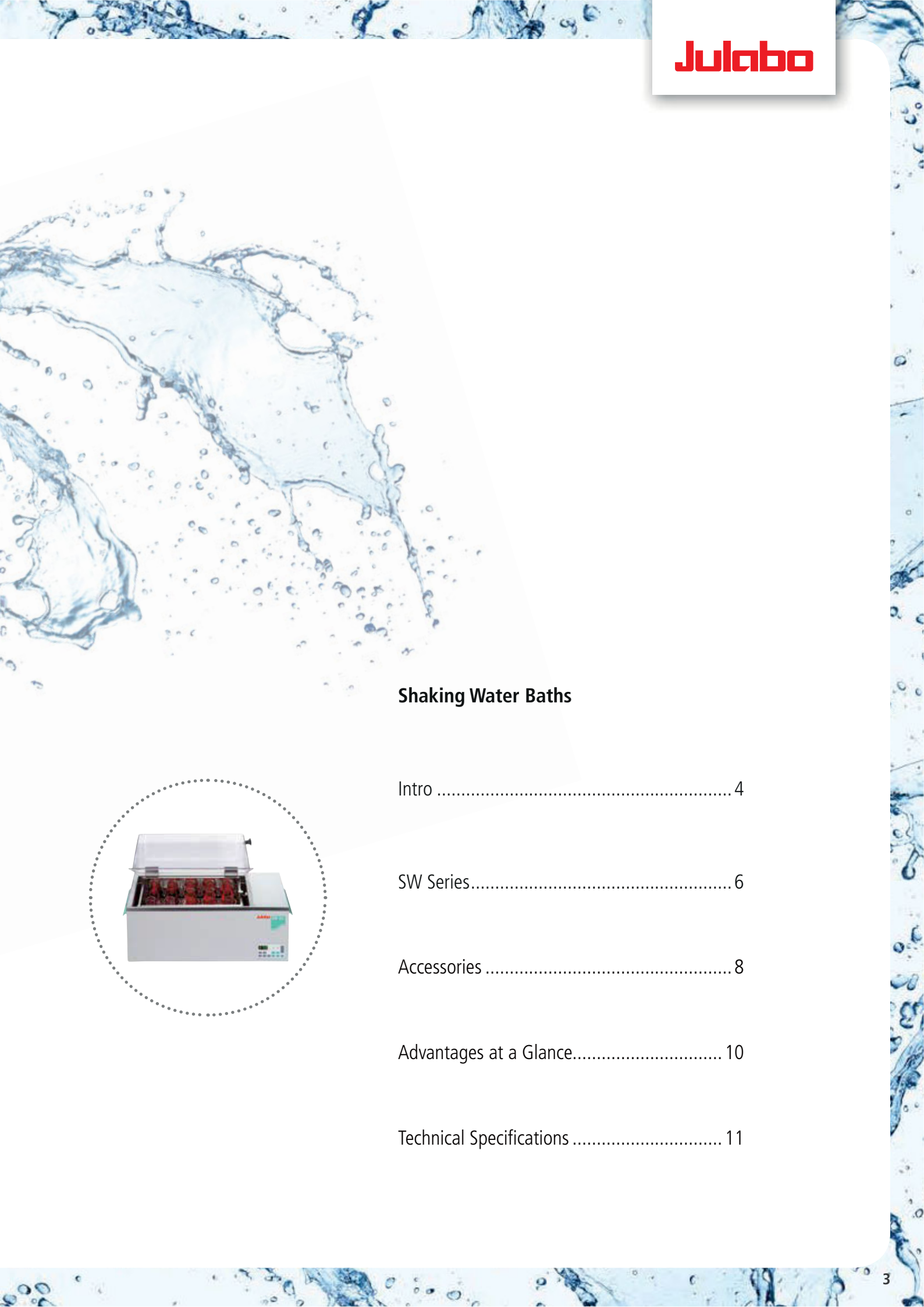
Maximum safety for applications, optical and audible alarm, convertible to automated cut-off function



### Only for non-flammable fluids

Class I (NFL) according to DIN 12876-1





## Shaking Water Baths



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# SHAKING WATER BATHS

## HIGH QUALITY AND DURABLE

### Experienced and Safe. Shaking Water Baths.

JULABO offers the shaking water baths of the SW series for routine applications, such as temperature applications for samples, incubation, material testing, corrosion tests, as well as temperature control applications of cultivations or temperature tests for food and beverages. All SW models are durable instruments of high quality. Their working temperature ranges from +20 °C to +99.9 °C qualifying them for a wide range of applications.



#### Practical Tip

The wide selection of accessories permits specific and individual set-up of all SW models for your temperature applications.



The removable shaking insert prevents direct contact with the bath fluid. Carrier trays can be assembled comfortably outside the bath.

#### Advantages of shaking water baths

- Ease of use
- Overall splash water protection
- Integrated power switch
- Bright LED display
- Bath volumes from 8 to 20 liters
- Lift-up bath cover (accessory)
- High temperature stability of up to  $\pm 0.02$  °C
- Acoustic and optical low water level alarm
- Convenient bath drain
- Removable bottom plate or shaking insert
- Comprehensive selection of accessories for temperature control of samples
- Highest quality (all parts in contact with the bath fluid are made of stainless steel or high grade plastic)
- Warning and cut-off protection for high/low temperature
- Adjustable shaking frequencies from 20 ... 200 rpm
- integrated
- RS232 interface



**Removable shaking insert**



**Integrated timer**  
(0 ... 10 operating hours)



**Adjustable shaking frequency**  
(20 ... 200 rpm)



**RS232**

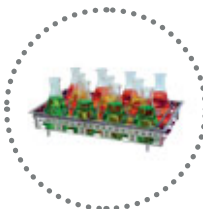
**RS232 interface**



**High temperature stability**  
( $\pm 0.2$  °C or  $\pm 0.02$  °C)



**Ease of use**  
Keypad with LED display



**Wide selection of test tube racks**



**Lift-up bath covers**  
in Makrolon® or stainless steel



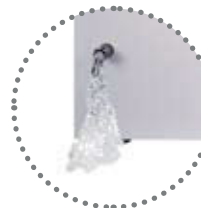
**Space saving design**  
Large bath volume



**Durable handles for easy positioning**



**Integrated power switch with auto-start function**



**Easy-access drain**



**Integrated high performance heater**  
for rapid heat-up



**High quality stainless steel bath tanks**  
with inward-sloped edge

# Shaking Water Baths



## Shaking Water Baths

+20 °C ... +99.9 °C

Two models with shaking function  
and up to 20 liters filling volume

- Ease of use through keypad
- Bright LED display
- Overall splash water protection
- Dry-running protection with acoustic and optical alarm
- Adjustable shaking frequency from 20 bis 200 rpm
- Removable bottom plate and shaking insert



SW keypad

Please refer to the page 2 for a description of the icons shown above.

## Shaking Water Baths SW Series

for working temperatures from +20 °C to +99.9 °C

JULABO Shaking Water Baths provide numerous state-of-the-art features for common day-to-day laboratory tasks. For example: sloped edges keep the water in the stainless steel bath tank even when the bath lid is open.

- Overall splash water protection
- Low water-level warning and cut-off functions
- Integrated timer (0 ... 10 operating hours)
- User-friendly operation and consistent reproducibility
- ATC 1-point calibration

**SW22:**  
Temperature stability  $\pm 0.2$  °C,  
for general applications

**SW23:**  
Temperature stability  $\pm 0.02$  °C, in addition with  
integrated circulating pump for best  
temperature stability and homogeneity



### SW22

<b>Order No.</b>	<b>9 550 322</b>
<b>Model</b>	<b>SW22</b>
Working temperature range °C	+20 ... +99.9
Temperature stability °C	$\pm 0.2$
Heating capacity kW	2
Shaking frequency rpm	20 ... 200
Shaking stroke mm	15
Filling volume liters	8 ... 20
Bath opening/ Bath depth cm	W x L / D 50 x 30 / 18
Dimensions cm	W x L x H* 70 x 35 x 26

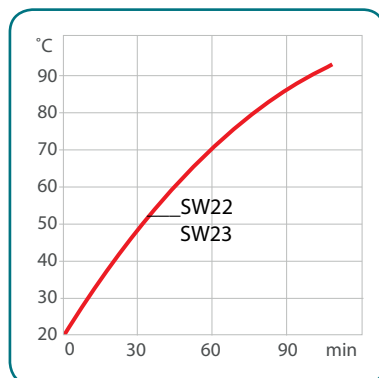
### SW23

<b>Order No.</b>	<b>9 550 323</b>
<b>Model</b>	<b>SW23</b>
Working temperature range °C	+20 ... +99.9
Temperature stability °C	$\pm 0.02$
Heating capacity kW	2
Shaking frequency rpm	20 ... 200
Shaking stroke mm	15
Filling volume liters	8 ... 20
Bath opening/ Bath depth cm	W x L / D 50 x 30 / 18
Dimensions cm	W x L x H* 70 x 35 x 26

\* Height with cover 43 cm

### Heat-up time

Bath fluid: water

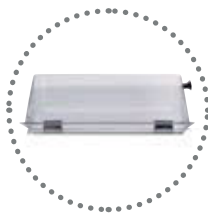


### Applications

Biochemical research, material testing, enzyme and tissue studies, homogenization, routine laboratory tasks, corrosion tests, fermentation, incubation, blood plasma thawing, temperature tests of food and beverages



## Accessories



### Lift-up bath covers

Order No.	Description	Suitable for
8 970 288	Lift-up Makrolon® cover (up to +80 °C), transparent	SW22, SW23
8 970 268	Lift-up stainless steel cover (up to +100 °C)	SW22, SW23



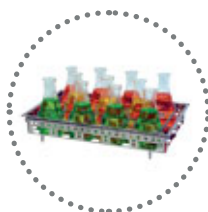
### Hollow balls to reduce heat loss, evaporation, oxygen input, odors, action of light

Order No.	Description	Suitable for
8 970 010	Hollow balls, Polypropylene®, 20 mm Ø, 1000 pcs (up to +100 °C, for water only)	SW22, SW23



### Cooling installation / Continuous water supply

Order No.	Description	Suitable for
8 970 415	Liquid level / cooling set	SW22, SW23
8 970 416	Cooling coil	SW22, SW23



### All-purpose spring tray/Set of springs

Order No.	Description	Suitable for
8 970 630	All-purpose spring tray, pre-assembled for 11 Erlenmeyer flasks 250 ml, incl. set of springs for Erlenmeyer flasks 25 ... 1000 ml	SW22, SW23
8 970 631	Set of springs consisting of 5 springs 190 mm and 12 springs 135 mm (for tray 8 970 630)	SW22, SW23



### Standard carrier tray for Erlenmeyer flasks

Order No.	Description	Suitable for
8 970 360	for 45 flasks, 25 ml	SW22, SW23
8 970 361	for 32 flasks, 50 ml	SW22, SW23
8 970 362	for 18 flasks, 100 ml	SW22, SW23
8 970 363	for 15 flasks, 200 ml	SW22, SW23
8 970 364	for 11 flasks, 250-300 ml	SW22, SW23
8 970 365	for 8 flasks, 500 ml	SW22, SW23
8 970 366	for 5 flasks, 1000 ml	SW22, SW23



### Carrier trays and spring clamps for Erlenmeyer flasks

Order No.	Description	Suitable for
8 970 620	Base tray for any spring clamps	SW22, SW23
8 970 601	Spring clamp for 10 ml flasks	SW22, SW23
8 970 602	Spring clamp for 25 ml flasks	SW22, SW23
8 970 603	Spring clamp for 50 ml flasks	SW22, SW23
8 970 604	Spring clamp for 100 ml flasks	SW22, SW23
8 970 606	Spring clamp for 200-250 ml flasks	SW22, SW23
8 970 607	Spring clamp for 300 ml flasks	SW22, SW23
8 970 608	Spring clamp for 500 ml flasks	SW22, SW23
8 970 609	Spring clamp for 1000 ml flasks	SW22, SW23





## Carrier trays for test tube racks

Order No.	Description	Suitable for
8 970 369	<b>Base carrier tray</b> for a maximum of 4 test tube racks	SW22, SW23
<b>Test tube racks made of Polypropylene® (up to +80 °C)</b>		
8 970 380	for 60 test tubes, 16/17 mm Ø	SW22, SW23
8 970 381	for 90 test tubes, 12/13 mm Ø	SW22, SW23
8 970 382	for 90 microliter tubes, 11/12 mm Ø	SW22, SW23
8 970 383	for 21 test tubes, 30 mm Ø	SW22, SW23
<b>Test tube racks made of stainless steel (up to +100 °C)</b>		
8 970 344	for 50 test tubes, 16/17 mm Ø	SW22, SW23
8 970 345	for 90 test tubes, 12/13 mm Ø	SW22, SW23
8 970 346	for 90 microliter tubes, 11/12 mm Ø	SW22, SW23
8 970 347	for 21 test tubes, 30 mm Ø	SW22, SW23



## Complete carrier trays with test tube racks (up to +80 °C)

Order No.	Description	Suitable for
8 960 440	for 240 test tubes, 16/17 mm Ø	SW22, SW23
8 960 441	for 360 test tubes, 12/13 mm Ø	SW22, SW23
8 960 442	for 360 microliter tubes, 30 x 11/12 mm Ø	SW22, SW23
8 960 443	for 84 test tubes, 30 mm Ø	SW22, SW23



## Software

Order No.	Description	Suitable for
8 901 102	EasyTemp control software, free of charge at <a href="http://www.julabo.com">www.julabo.com</a>	SW22, SW23
8 901 105	EasyTemp Professional software, incl. USB dongle	SW22, SW23
8 980 075	RS232 interface cable, 3 m, for direct PC connection	SW22, SW23



## Aqua Stabil water protective media to prevent formation of algae and bacteria and Descaling agent

Order No.	Description	Suitable for
8 940 006	Aqua Stabil, 6 bottles, 100 ml each	SW22, SW23
8 940 012	Aqua Stabil, 12 bottles, 100 ml each	SW22, SW23
9 940 200	Descaling agent, 1 liter	SW22, SW23

# The **JULABO** advantages at a glance.

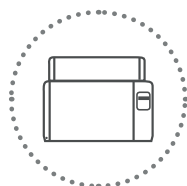
## JULABO temperature control – high-precision and speed

JULABO products include high-quality temperature control solutions to cover the temperature range from -95 °C to +400 °C.



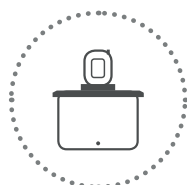
### Refrigerated Circulators

The JULABO refrigerated circulators are suitable for internal and external applications and can be used within the temperature range of -95 °C to +200 °C.



### Water Baths and Shaking Water Baths

Water baths and shaking water baths from JULABO can be used for a variety of applications in the temperature range from +18 °C to +99.9 °C.



### Heating Circulators

Heating circulators are available in various designs including Heating Immersion Circulators, Open Heating Bath Circulators, or Heating Circulators and cover the temperature range from +20 °C to +300 °C.



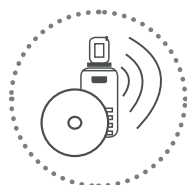
### Additional Products

In addition, the JULABO product portfolio has equipment for special applications such as Calibration Baths, Visco Baths, Beer Forcing Test Bath, Immersion/Flow-Through Coolers, Temperature Controllers and Refrigerators for Chemicals.



### Highly Dynamic Temperature Control Systems

The highly dynamic temperature control systems from JULABO can be used for demanding temperature applications ranging from -92 °C to +400 °C. The new PRESTO® line offers unique high performance specifications to meet these requirements.



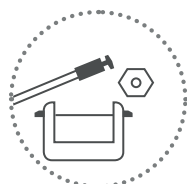
### Wireless Communication & Software Solutions

JULABO facilitates the automation of applications. The temperature control units can be comfortably controlled and monitored via PC.



### Recirculating Coolers

JULABO recirculating coolers are highly efficient and therefore offer an environmentally friendly and economic alternative to tap water cooling in the range of -25 °C to +130 °C.



### Accessories

The extensive range of accessories for all our instruments allows the flexible use of JULABO products in research and industry.

### Comprehensive service and on-site support

JULABO takes pride in offering customers expert advice for pairing the proper JULABO temperature control solution to their specific application. JULABO service and support options include installation and calibration, equipment qualification documentation and application training. These invaluable services ensure customer confidence in the operation and maintenance of their JULABO unit.

### Individual requirements – individual products

The wide range of JULABO offers a solution for almost any application. However, if a specific application needs more than a standard product is able to offer, the JULABO specialists will work out an individual solution with you.

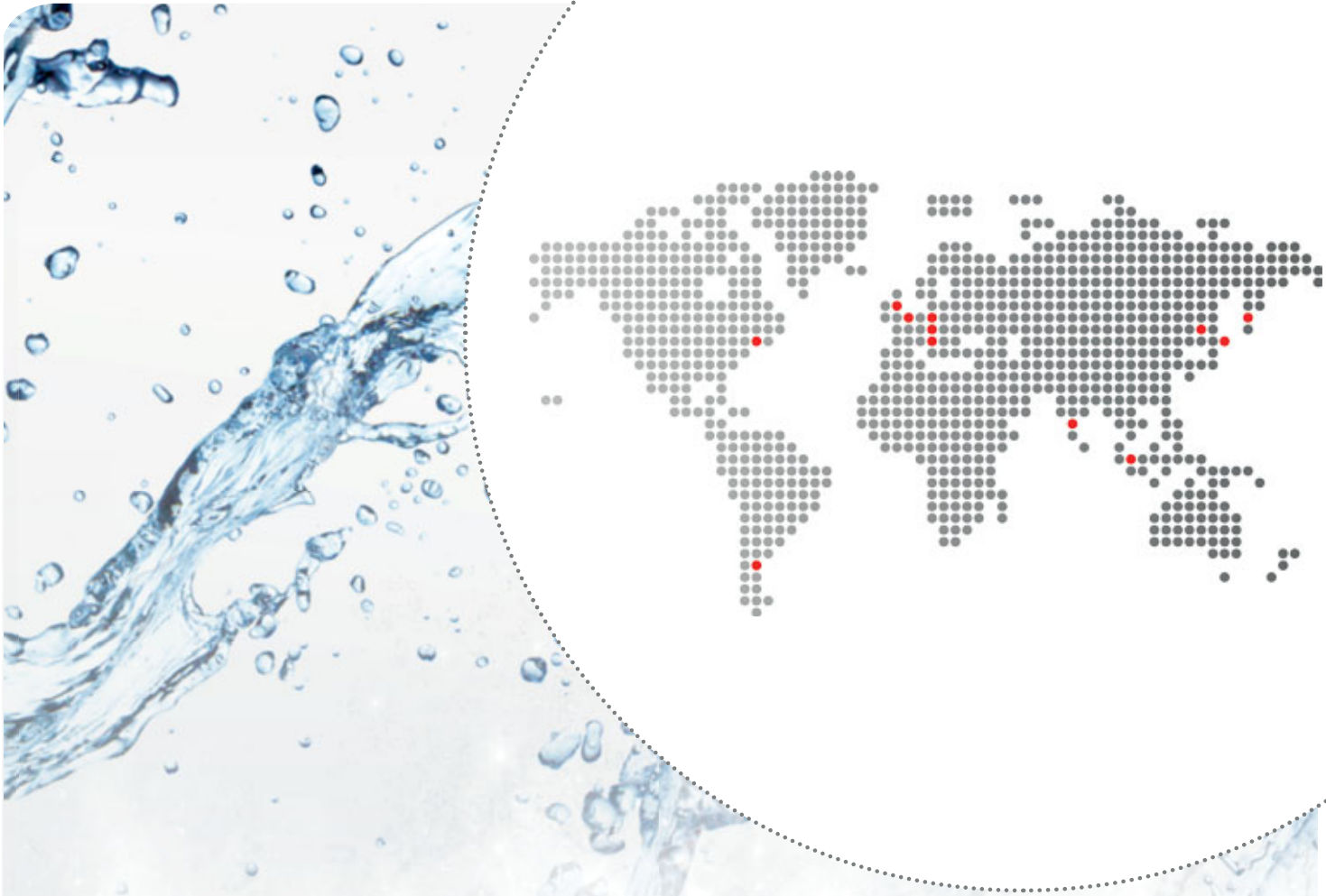
## Technical Specifications and Voltage Options

Model	Order No.	Working temperature range °C	Setting/ display resolution °C	Temperature control	Temperature stability °C	Heating capacity kW	Bath opening/ bath depth W x L / D cm	Filling volume liters
<b>SW22</b>	<b>9 550 322</b>	+20 ... +99.9	0.1	PID1	±0.2	2	50 x 30 / 18	8 ... 20
<b>SW23</b>	<b>9 550 323</b>	+20 ... +99.9	0.1	PID1	±0.02	2	50 x 30 / 18	8 ... 20

Shaking frequency rpm	Shaking stroke mm	Classification acc. to DIN 12876-1	IP class acc. to IEC 60529	Power requirement V / Hz / A	Dimensions without cover W x D x H cm	Dimensions with cover W x D x H cm	Weight net kg	Model
20 ... 200	15	I (NFL)	IP21	230/50-60/10	70 x 35 x 26	70 x 35 x 43	19.4	<b>SW22</b>
20 ... 200	15	I (NFL)	IP21	230/50-60/10	70 x 35 x 26	70 x 35 x 43	21.4	<b>SW23</b>

## Voltage options for shaking water baths

Model	Order No.	Available voltage options / Heating capacity kW	
		230 V 50-60 Hz	115 V 60 Hz
<b>SW22</b>	9 550 322	2.0	1.0
<b>SW23</b>	9 550 323	2.0	1.0



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