

# TS-100, Thermo-Shaker for microtubes and PCR plates

## DESCRIPTION

Thermo-Shaker **TS-100** provides intensive mixing and temperature control of samples in microtest tubes or PCR plate. Functions of heating (up to +100°C) and mixing can be performed both simultaneously and independently, i.e. the unit implements three devices in one:

1. Shaker;
2. Dry-block Thermostat;
3. Thermo-Shaker.

**TS-100** is used for DNA analysis sample preparation, for extraction of proteins, polysaccharides, lipids and other cellular components. Features of **TS-100** meet the increased requirements of the user, including:

- Quickly reaches the set mixing speed and maintains same amplitude of rotation around the block;
- Stable maintenance of the temperature of a wide range over the entire surface of the block;
- LCD display shows the set and actual temperature, speed and time;
- Quiet engine operation, compact size, long service life.

Heating source is a printed heating board (12 V). Mixing is provided by movement of orbital type.

The instrument is applicable in:

- Genetic analysis — in extraction of DNA, RNA and further sample preparation;
- Biochemical study of enzymatic reactions and processes;
- Extraction of metabolites from cellular material.

### Temperature Calibration Function

With the help of the temperature calibration function the user can calibrate the unit approx. ±6% of the selected temperature to compensate differences in the thermal behaviour of tubes from different manufacturers.



## CAT. NUMBER

Without thermoblock	Without thermoblock
BS-010120-AAI	230VAC 50/60Hz Euro plug
BS-010120-AAQ	230VAC 50/60Hz UK plug
BS-010120-AA4	230VAC 50/60Hz AU plug
BS-010120-AAJ	100VAC 50/60Hz US plug, 120VAC 60Hz US plug
BS-010120-HK	IQ OQ document
BS-010120-IK	PQ document

## SPECIFICATIONS

Temperature setting range	+25°C ... +100°C
Temperature control range	5°C above ambient ... +100°C
Temperature setting resolution	0.1°C
Temperature stability	±0.1°C
Temperature accuracy at +37°C	±0.5°C
Average heating speed from +25°C to +100°C	4°C/min
Temperature uniformity over the block at +37°C	±0.1°C
Temperature uniformity over the block at +100°C	±0.2°C
Temperature calibration coefficient range	0.936...1.063 (± 0.063)
Speed control range	250–1400 rpm
Digital time setting	1 min–96 hrs (1 min increment)
Timer sound signal	+
Orbit	2 mm
Display	LCD, 16 x 2 signs
Microprocessor controlled temperature, mixing speed and operation time	+
Maximum continuous operation time	168 h
Overall dimensions (W×D×H)	220x240x90 mm
Weight	3.7 kg
Input current/power consumption	12 V, 3.5 A / 42 W
External power supply	Input AC 100–240 V; 50/60 Hz; Output DC 12 V

## ACCESSORIES



SC-18  
BS-010120-AK  
block

20 × 0.5 ml + 12 × 1.5 ml  
microtubes



SC-18/02  
BS-010120-CK  
block

20 × 0.2 ml microtubes + 12 ×  
1.5 ml microtubes



SC-24N  
BS-010120-GK  
block

24 × 1.5 ml microtubes



SC-24  
BS-010120-EK  
block

24 × 2 ml microtubes



SC-96A  
BS-010120-FK  
block

96-well unskirted or semi-  
skirted microplate (0.2 ml) for  
PCR or 12 × 8 - 0.2ml strips or  
96 tubes of 0.2 ml.

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## For deep well plates

A multisystem principle, used in the design of the Thermo-Shaker, allows operating it as 3 independent devices: Incubator, Plate shaker and Thermo-Shaker.

**TS-DW** provides excellent temperature uniformity across the plate due to patented two-sided heating of the block and the lid, contour heating of the block and close proximity of heating elements to plate walls.

### Application fields:

- **Cytochemistry** — for in situ reactions;
- **Immunochemistry** — for immunofermentative reactions;
- **Biochemistry** — for enzyme and protein analysis;
- **Molecular biology** — for nucleic acid extraction;



Premium  
Product Class



+25 °C... +100°C



250–1,400 rpm  
Increment: 10 rpm



1 min – 96 hrs/non-stop  
Increment: 1 min

### Interchangeable blocks:

B-2E Eppendorf® 96/1000 µl

B-2S Sarstedt® Megablock 96/2200 µl

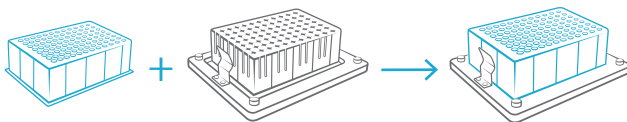
B-2A Axygen® 96/2200 µl

Blocks available for other deep well plate manufacturers:

Eppendorf®, Sarstedt®, Axygen®, PlateOne®,

Slicprep™, Abgene™, Riplate®, SSIbio®, PowerMag®, KingFisher™,

Nunc®, Starlab®, Porvair®, Biotage®.



The block for deepwell plate is mountable, thus a custom plate module can be manufactured on request

[www.biosan.lv](http://www.biosan.lv)

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Medical-Biological  
Research & Technologies



ANNIVERSARY  
1992–2022

# THERMO-SHAKERS

FOR

96-well microplates

Microtest tubes

PCR-plates

Deep well plates



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## For 96-well ELISA microplates

A distinctive feature of Biosan Plate Thermo-Shakers is the patented **Two-Side Microplates Heating**, which allows to achieve full correspondence of the set and actual temperature in the microplate wells.

A multisystem principle, used in design of the Thermo-Shaker, allows operating it as 3 independent devices:

- Incubator;
- Microplate shaker;
- Thermo-Shaker.

### Application fields:

- **Immunochemistry** — ELISA;
- **Molecular biology** — Micro and Macro array applications.



PST-60HL

PST-60HL-4

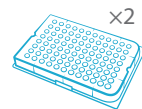
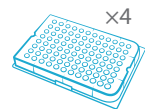
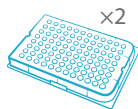
PST-100HL

+25 °C... +60 °C

+25 °C... +100 °C

250–1,200 rpm  
Increment: 10 rpm

1 min – 96 hrs/non-stop  
Increment: 1 min



## For microtest tubes or PCR-plates

**TS-100, TS-100C** and **TS-100C Smart** thermo-shakers are designed for intensive mixing of samples in microtest tubes or PCR plates in a temperature control environment.

- **Fast reaching of specified mixing speed;**
- **Stability of maintaining the set temperature in a wide range;**
- **Temperature calibration function;**
- **LCD display indicates pre-set and current values;**
- **Quiet motor operation, compact size, prolonged service life.**

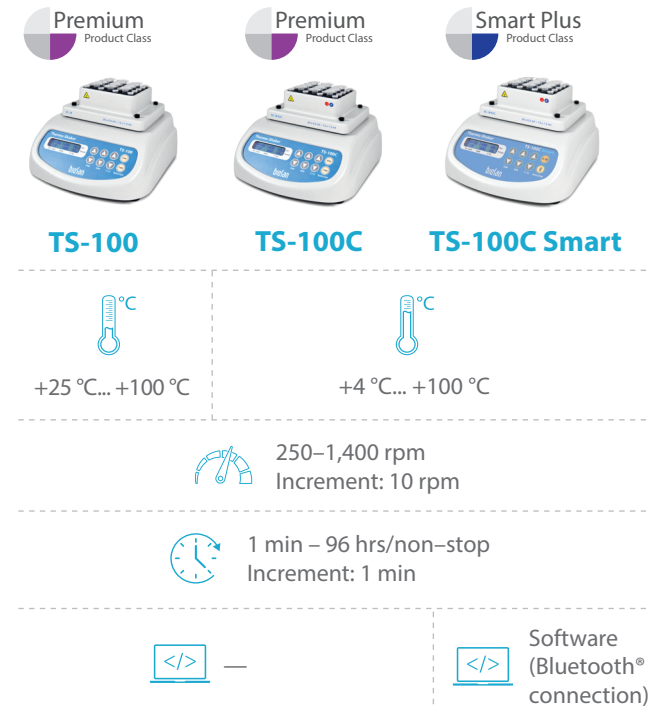
We offer five heating and cooling blocks for each model, including a block with a plastic lid for PCR-plates. Within one model of thermo-shaker, the blocks are mutually interchangeable and can be easily installed.

### Application fields:

- **Molecular diagnostics** — Sample lysis for further Nucleic acid automated or manual extraction;
- **Genetic** — Amplicon denaturation for NGS Library preparation;
- **Biochemistry** — Enzymatic reaction;
- **Genomics** — Protein degradation studies;
- **Cellular biology** — Extraction of metabolites from cellular material.

### TS-100C Smart software features:

- Control
  - Rotation speed
  - Temperature
  - Time
  - Sound signal
- Create Profiling programs using controlled parameters
- Visualize of temperature vs time and speed vs time graphs
- Export data to Excel and CSV formats
- Error messages/Fault diagnostics



### Interchangeable Blocks for TS-100, TS-100C and TS-100C Smart

