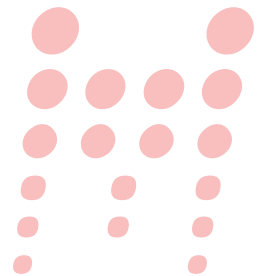


Thermo-Shakers, Shakers-Incubators



PST-60HL, PST-60HL-4 and PST-100HL Plate Shaker-Thermostats



Plate Shaker-Thermostats are designed for shaking and thermostating 1–4 standard 96-well microplates.

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

- * Incubator;
- * Microplate shaker;
- * Shaker-Thermostat.

A distinctive feature of Maikoarray Plate Shaker-Thermostats is the patented by the company **Two-Sided Heating of Microtest Plates**, which allows achieving exact correspondence of the set and actual temperature in wells of the microtest plates.

Plate Shaker-Thermostat provides:

- Gentle or vigorous shaking of samples
- Regulation, stabilisation and indication of rotation speed
- Even rotation amplitude throughout the Thermo-Shaker platform
- Setting and indication of the required operation time
- Automatic stop of the platform motion after expiration of the set time
- Setting and indication of the required temperature on the platform

Application fields:

- Cytochemistry — for in situ reactions
- Immunochemistry — for immunofermentative reactions
- Biochemistry — for enzyme and protein analysis
- Molecular biology — for micro array analysis

Catalogue number:

PST-60HL	MA-010119-AAI
PST-60HL-4	MA-010128-AAI
PST-100HL	MA-010142-AAI

Unit for higher plates can be produced on request.

PST-60HL



PST-60HL-4



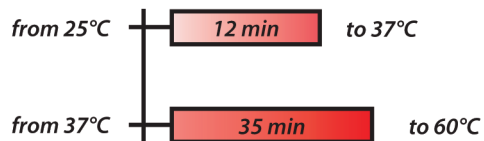
PST-100HL



Specifications

Model	PST-60HL	PST-60HL-4	PST-100HL
Temperature setting range	+25°C ... +60°C		+25°C ... +100°C
Temperature control range	+5°C above ambient ... +60°C		+5°C above ambient ... +100°C
Setting resolution	0.1°C		
Stability	±0.1°C		
Uniformity @ +37°C	±0.2°C		
Orbit diameter	2 mm		
Speed regulation range	250–1200 rpm (increment 10 rpm)		
Independent timer with sound alarm	1 min–96 hrs (increment 1 min)		
Display	LCD, 16 × 2 signs		
Max. height of microtest plate	18 mm		
Number of microtest plates	2	4	2
Weight, not more	7 kg	9 kg	6.5 kg
Platform dimensions (W × D)	250 × 150 mm	290 × 210 mm	250 × 150 mm
Overall dimensions (W × D × H)	270 × 260 × 125 mm	390 × 390 × 140 mm	270 × 260 × 125 mm
Heating power	40 W	50 W	60 W
Input current/power consumption	12V DC, 3.3 A / 40W	12V DC, 4.15 A / 50W	12V, 5 A / 60W
External power supply	Input AC 100-240 V 50/60Hz, Output DC 12V		

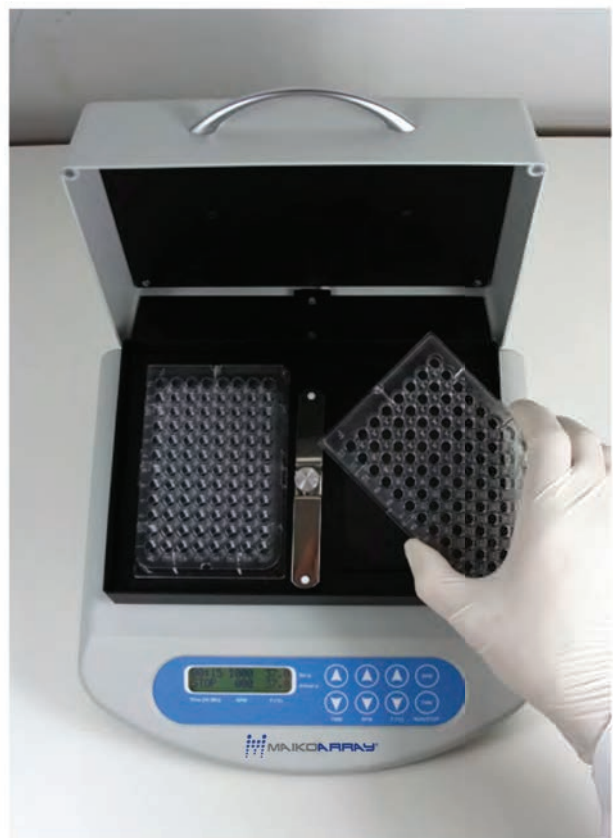
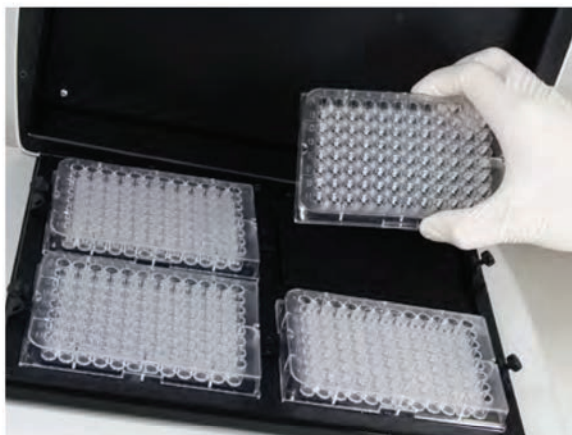
Heat up time PST-60HL and PST-60HL-4



Heat up time PST-100HL



PST-60HL-4



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



Thermo-shaker **TS-100** provides mixing and temperature control of samples in microtest tubes or PCR plate. Functions of heating and mixing can be performed both simultaneously and independently, i.e. the unit implements three devices in one:

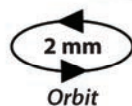
1. Shaker;
2. Thermostat;
3. Thermostat shaker.

TS-100 is used for DNA analysis sample preparation, for extraction of proteins, polysaccharides, lipids and other cellular components.

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

The instrument is applicable in:

- * DNA analysis — DNA extraction;
- * Biochemical study of enzymatic reactions and processes;
- * Extraction of metabolites from cellular material.



Specifications:

Temperature setting range	+25°C ... +100°C
Temperature control	+5°C above ambient ... +100°C range
Temperature setting resolution	0.1°C
Temperature stability	±0.1°C
Temperature accuracy at +37°C	±0.5°C
Average heating speed	2.5°C/min
from +25°C to +100°C (SC-20 block)	

Temperature uniformity over the block:

at 37°C	±0.1°C
at 60°	±0.2°C
at 100°	±0.2°C

Mixing speed range	250–1400 rpm
Orbit diameter	2 mm

Microprocessor controlled temperature, mixing speed and operation time

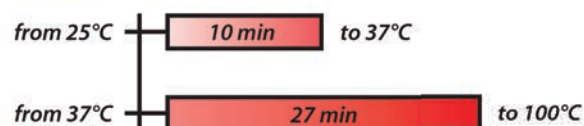
Display	LCD, 16 × 2 signs
Digital timer with sound alarm	1 min–96 hrs (1 min increment)

Overall dimensions (W × D × H)	205 × 230 × 130 mm
Weight, not more	4 kg
Heating power	40 W
Input current/power consumption	12V, 3.5 A / 42W
External power supply	Input AC 100-240 V 50/60Hz; Output DC 12V

Catalogue number:

TS-100 without block	MA-010120-AAI
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Heat up times for TS-100



Announcement:

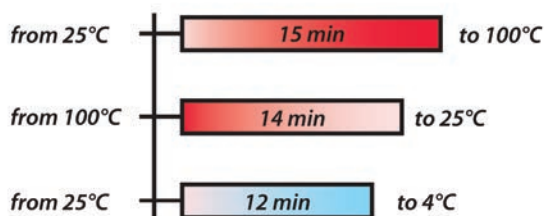
The new version of **TS-100** with increased maximum speed till **1800 rpm** and option for **fast (2 sec) / slow (22 sec)** acceleration.

TS-100 with block SC-20





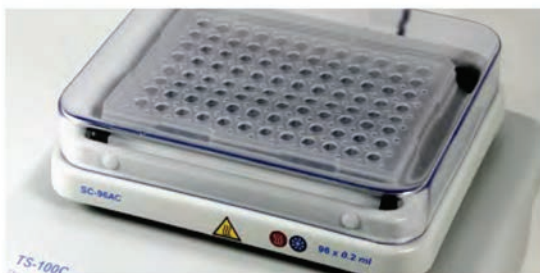
Heat up and cool down times for TS-100C



Announcement:

The new version of TS-100C with increased maximum speed till 1800 rpm and option for fast (2 sec) / slow (22 sec) acceleration will be available in the beginning of year 2012.

TS-100C with block SC-96AC



Catalogue number:

TS-100C without block MA-010143-AAI

Thermo-shaker **TS-100C** provides mixing and temperature control of samples in microtest tubes or PCR plate. This model of thermo-shaker differs from TS-100 with a possibility of cooling samples down to +4°C. Features of **TS-100C** meet the highest expectations of users according to many parameters:

1. Fast reaching of specified mixing speed and maintenance of equal amplitude of rotation throughout the Thermo-shaker block;
2. Stability of maintaining the preset temperature in a wide range throughout the Thermo-shaker's block surface;
3. LCD display indicates preset and current values of temperature, speed and time of operation;
4. Quiet motor operation, compact size, prolonged service life.

Functions of heating and mixing can be performed both simultaneously and independently

There are six (6) heating and cooling blocks available, including a block with a plastic lid for the PCR-plates. All blocks are mutually interchangeable and can be easily installed on thermo-shaker. Pictures and description of the blocks are provided on the page 26.

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.

Specifications:

Temperature setting range	+4°C ... +100°C
Temperature control range	15°C below ambient ... +100°C
Temperature setting resolution	0.1°C
Temperature stability	±0.1°C
Temperature accuracy at +37°C	±0.5°C
Temperature uniformity over the block:	
at 4°C	±0.6°C
at 37°C	±0.15°C
at 100°C	±0.3°C
Average heating speed (SC-20C block)	5°C/min
from +25°C to +100°C	
Average cooling speed (SC-20C block)	
from +100°C to +25°C	5°C/min
from +25°C to 15°C below ambient	1.8°C/min
Mixing speed range	250–1400 rpm
Orbit diameter	2 mm
Display	LCD, 16 × 2 signs
Microprocessor controlled temperature, mixing speed and operation time	
Digital timer with sound alarm	1 min–96 hrs (1 min increment)
Overall dimensions (W × D × H)	205 × 230 × 130 mm
Weight, not more	4 kg
Heating and cooling power	60 W
Input current/power consumption	12V, 4.9 A / 60 W
External power supply	Input AC 100-240 V 50/60Hz; Output DC 12V

Interchangeable blocks for TS-100

Blocks' specifications:

Block	Capacity	Tube volume	Catalogue number
1 SC-18	20 and 12 microtubes	0.5 ml and 1.5 ml	MA-010120-AK
2 SC-20	20 microtubes	1.5 ml	MA-010120-BK
3 SC-18/02	20 and 12 microtubes	0.2 ml and 1.5 ml	MA-010120-CK
4 SC-20N	20 microtubes	2 ml	MA-010120-DK
5 SC-24	24 microtubes	2 ml	MA-010120-EK
6 SC-96A	96-well microplate for PCR	0.2 ml	MA-010120-FK

1 SC-18



3 SC-18/02



5 SC-24



2 SC-20



4 SC-20N



6 SC-96A



Interchangeable blocks for TS-100C

Blocks' specifications:

Block	Capacity	Tube volume	Catalogue number
1 SC-18C	20 and 12 microtubes	0.5 ml and 1.5 ml	MA-010143-AK
2 SC-20C	20 microtubes	1.5 ml	MA-010143-BK
3 SC-18/02C	20 and 12 microtubes	0.2 ml and 1.5 ml	MA-010143-CK
4 SC-20NC	20 microtubes	2 ml	MA-010143-DK
5 SC-24C	24 microtubes	2 ml	MA-010143-EK
6 SC-96AC	96-well microplate for PCR	0.2 ml	MA-010143-FK

1 SC-18C



2 SC-20C



3 SC-18/02C



4 SC-20NC



5 SC-24C

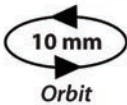


6 SC-96AC



Cooling element
(Peltier)





Heat up time for ES-20

from 25°C + **16 min** to 42°C



The **ES-20** is a compact bench-top Shaker-Incubator used for mixing of biological liquids as well as the incubation and cultivation of biological liquids according to the operator set program. Built-in microprocessor thermocontroller provides constant temperature control in the incubator chamber. Forced heated air circulation inside the transparent plexiglas chamber guarantees even temperature distribution. Dismountable construction makes transportation easy.

Orbital shaking is controlled by the digital tachometer (rpm) and digital timer independently of the temperature. The unit is equipped with the direct-drive system ensuring most reliable stable long-time operation (up to 30 day nights).

The **ES-20** is extremely easy to operate, with very straightforward setup of temperature, speed and time, using the two line set-up and status display, which clearly indicates both set and actual values for each of the three parameters.

Specifications:

Temperature setting range	+25°C ... + 42°C
Temperature control range	+5°C above ambient ... + 42°C
Setting resolution	0.1°C / 1 rpm
Stability	±0.5°C
Speed range	50–250 rpm
Orbit diameter	10 mm
Display	LCD, 2 × 16 signs
Timer with sound alarm	1 min–96 hrs / non-stop
Plexiglas walls thickness	7 mm
Load capacity	2.5 kg
Overall dimensions (W × D × H)	340 × 340 × 435 mm
Weight, not more	15 kg
Heating power	150 W
Nominal operating voltage	230 V, 50/60 Hz or 120 V, 50/60 Hz
Power consumption (230 / 120 V)	160 W (0.7 A) / 170 W (1.6 A)

Five (5) interchangeable platforms allow using the ES-20 for:

- * Growing cell cultures in flasks and other laboratory glassware;
- * Extracting tissue samples at physiological temperatures;
- * Other sample preparation processes.

Catalogue number:

ES-20 without platform MA-010111-AAA

ES-20/60, Environmental Shaker-Incubator



Shaker-Incubator **ES-20/60** for biotechnological and pharmaceutical laboratories is a professional category equipment designed for cultivation of micro organisms cells and eukaryotic cells including animal, plant and insect cells. Shaker is equipped with a direct-drive mechanism for platform motion. It provides reliable and stable operation for the long term experiments needed for cell growth. Shaker-Incubator **ES-20/60** provides even (or vigorous) mixing in flasks installed on the platform.

Built-in noiseless thermoresistant brushless fan provides precise temperature distribution inside the chamber (adjustable from +10°C above room temperature up to +80°C). The chamber inside is made of stainless steel. State-of-the-art motor, latest thermal insulation materials, soft-start of the platform motion and temperature **PID-control** decrease the energy consumption and make the shaker-incubator highly energy efficient despite its relatively large size.

Specifications:

Speed range	50–250 rpm (increment 10 rpm)
Temperature setting range	+25°C ... +80°C
Temperature control range	+10°C above ambient ... +80°C
Setting resolution	0.1°C
Stability	±0.5°C
Maximum load	8 kg
Orbit diameter	20 mm
Timer with sound alarm	1 min–96 hrs (1 min increment)
Display	LCD, 2 × 16 signs
Continuous operation	max. 168 hrs
Overall dimensions (W × D × H)	590 × 525 × 510 mm
Weight, not more	43 kg
Heating power	500 W
Nominal operating voltage	230 V, 50/60 Hz or 120 V, 50/60 Hz
Power consumption (230 / 120 V)	450 W (2 A) / 450 W (4.5 A)

Catalogue number:

ES-20/60 without platform	MA-010135-AAA
PP-400	MA-010135-FK
P-30/100	MA-010135-BK
P-16/250	MA-010135-CK
P-9/500	MA-010135-AK
P-6/1000	MA-010135-DK

ES-20/60 with platform P-9/500



Heat up time for ES-20/60

from 25°C + **90 min** to 80°C

ES-20/60 with platform PP-400





Contact Us

We love hearing from our customers and we do value your feedback. Whether you are looking for more information, or you would like to get a free quote. Please contact us by email to see how we can help you reach your objectives.

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