Klipspringer

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HB 120-C Dry Bath

USER MANUAL

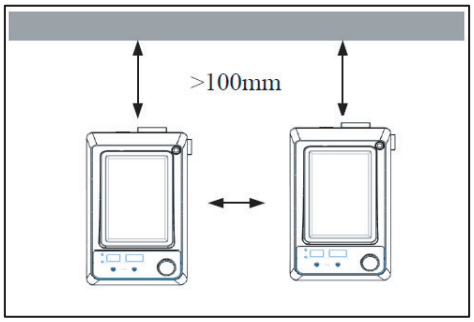
Product Code: HB120-50

The HB 120-C Dry Bath from Klipspringer is a compact, high-performance heating block designed for precise temperature control in laboratory environments.

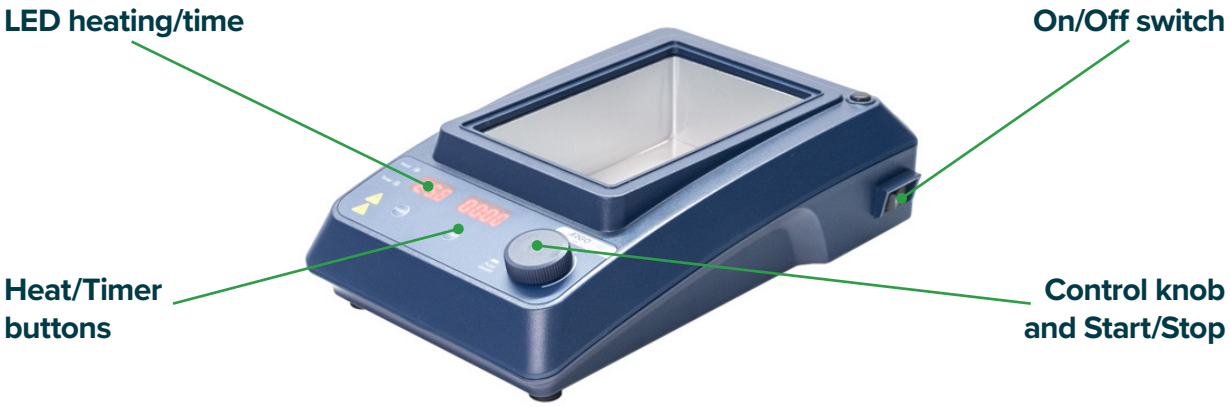
Safety Instructions

Icon	Meaning
	✔ Read the instructions carefully before use. ✔ Ensure that only qualified personnel use this instrument. ✔ Do not heat highly flammable or highly volatile substances.
	✔ Be very careful when touching the plastic cover during the heating cycle. Remove the heating blocks ONLY by using the special support rod. The block temperature can reach up to 140°C. ✔ Be careful even when the instrument has been switched off.
	✔ Before use, make sure the instrument is connected to a grounded outlet.

- During work, personnel must prevent risks of:
  - ✔ Splashes and/or evaporation of liquids;
  - ✔ Emission of toxic or combustible gases.
- Place the instrument in a suitable area, on a stable, clean, non-slip, dry and fireproof surface.
- Do not use the instrument in explosive atmospheres, containing hazardous substances or under water.
- The set heating temperature must always be at least 50°C lower than the combustion temperature of the heated substance used.
- Pay close attention to risks due to:
  - ✔ Flammable materials or samples with a low boiling temperature;
  - ✔ The overfilling of samples;
  - ✔ Unsafe and/or unsuitable containers for heating.
- Use any pathogenic samples only in closed containers.
- Check that the instrument and accessories are in optimal condition before use. Never use damaged components.
- Safety and optimal function are only guaranteed with the described instrument and accessories in order. The accessories must also be securely connected to the device.
- The instrument can be switched off by disconnecting it from the power supply or unplugging the cable from it.
- The operating voltage indicated on the instrument label must correspond to the mains voltage to which it is connected.
- Ensure that the power cable does not touch the heating plate.
- The instrument must only be opened by specialised technicians.
- Keep the instrument away from electromagnetic fields.
- Observe the minimum distance between the devices and between the device and the wall (minimum 10 cm).



Controls and indicators



Command	Description
“Heat” button	Press the button to adjust (with knob) the temperature
“Timer” button	Press the button to adjust (with knob) the heating time.
Control knob - Start/Stop	Allows you to adjust the Temperature and Heating Time parameters, start a work cycle and manage the Calibration.
Heating led	When the heating function is active, the heating LED is green.
Time led	When the heating function is active, the time LED is green.
On/Off button	Switches the instrument on or off.
LED Display	The LED displays show the set values.

Display

Operating modes

Temperature Regulation

Press the ‘Heat’ button and the value on the display will start flashing. Adjust the desired value with the knob and confirm by pressing the knob. When the heating function is active, the ‘Temperature LED’ will turn green and the temperature on the display will rise to the Set Point. The device is controlled by digital temperature control technology and has overheating protection, the safety temperature is 140°C.

Note: The instrument automatically displays the last set speed and temperature parameters once it is switched on. Generally, the LED screen cannot display the actual temperature of the sample in the tube or on the surface of the thermoblock.

Adjusting the Heating Time

Press the 'Timer' button and the value on the display will start flashing. Adjust the desired value with the knob and confirm by pressing the knob. The 'time LED' will turn green and the countdown will begin.

The device can operate in continuous mode or with a time interval setting of your choice.

The cycle can be interrupted at any time by pressing the control knob. If the knob is pressed again, the cycle will start again and the timer will restart counting down (if a heating time is set). When the timer reaches zero, the unit will automatically stop.

Note: In continuous mode, the countdown will start immediately after the knob is pressed for confirmation. It will not start once the temperature set point has been reached.

Heating block management

Regardless of the type of heating block chosen (no. of places and Ø tubes), insertion and removal can be performed using the knurled metal rod supplied with the instrument. Each block has a threaded hole at its centre into which this rod can be installed in order to insert or remove the heating block.

Note: Never switch on the HB 120-C instrument without the heating block inserted and take special care when handling the heating block during removal to avoid burns and/or other injuries.
It is recommended to remove the heating block, if no longer in use, ONLY when it has cooled down.

Instrument calibration

The HB 120-C instrument can be calibrated (temperature parameter), to the 'target' value of 70°C, using a certified professional or perfectly working thermometer.

Complete the following steps:

- Insert a thermally stable fluid (e.g. silicone oil) into a test tube.
- Insert the test tube into the heating block.
- Insert the temperature probe of the 'reference' thermometer inside the tube with the liquid.
- Press and hold down the adjusting knob and switch the instrument on. The display will go in 'Calibration' mode.
- Using the knob, set to 70°C and press the knob once to start the heating cycle.
- Wait 30 minutes, after which the value on the display will start to flash.
- Adjust the temperature value with the knob to the value of the 'reference' instrument.
- Press the adjusting knob to end the calibration.

Note: As a check, it is recommended to switch the HB 120-C on again, set to continuous mode and temperature 70 °C. Verify (again using the thermometer in use) that the discrepancy is ± 0.05.

Malfunctions

- In the event of an instrument failure, it is recommended to switch it off.
- Switch the main ON / OFF button off for a few seconds, then switch the unit on again.
- If the instrument does not switch on, check if it is correctly connected to the power cable.
- Check whether the fuse is intact or damaged.

Cleaning and Maintenance

- Proper maintenance of the instrument ensures its good condition and extends its life.
- Unplug the power cord during cleaning.
- When cleaning, be careful not to spray detergent inside the instrument.
- Use only non-aggressive cleaning agents that do not contain corrosive substances.
- Before proceeding with cleaning or decontamination, the user must ensure that the cleaning method of choice won't damage the instrument.
- Wear appropriate protection when cleaning with chemicals.
- If the instrument has to be sent for technical assistance, it must be properly cleaned and, if necessary, decontaminated from pathogens. The instrument should also be returned for repair inside its original packaging.

Reference Standards

The instrument was manufactured in compliance with the following safety regulations:

EN 61010-1

UL 3101-1

CAN/CSA C22.2(1010-1) EN 61010-2-10

The instrument was manufactured in compliance with the following EMC standards:

EN 61326-1

European Guidelines:

EMC-guidelines: 89/336/EWG

Machine guidelines: 73/023/EWG

Technical features

Feature	Description
Display type	LED Display
Acoustic/visual alarms	Yes, with °C stability and end-of-cycle indication
Temperature Range [°C]	Room Temp+5 - 120°C
Settable temperature range [°C]	15-120°C
Temperature Accuracy [°C]	± 0,5°C
Temperature uniformity @37°C [°C]	± 0,5°C
Max heating rate	5.5°C/min
Heating curve (standard block)	17 min at 100°C
Heating curve (aluminium ball bath)	12 min at 100°C
Overheating protection	140°C
Settable time interval	Continuous mode / 1 min - 99h:59min
Num° of blocks that can be accommodated	1
Lid	Yes, for sample protection
Calibration	1 point @70°C
Dimensions (W x D x H)	175 x 290 x 85 mm
Weight	3.0 kg
Working temperature	10 - 40 °C
Max. operating humidity	<80%
Power supply	220/240 V - 50/60 Hz
Power consumption	160 W

Disposal of electronic equipment

Electrical and electronic equipment bearing this symbol may not be disposed of in public landfills. In accordance with EU Directive 2002/96/EC, European users of electrical and electronic equipment have the option of returning used equipment to the distributor or manufacturer when purchasing new equipment. Illegal disposal of electrical and electronic equipment is punishable by an administrative fine.