

**Low Temperature Circulating Bath**  
**DLK-5003**  
**User Manual**



Please read operating manual before installation and operation.

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**Characteristics:**

1. Low Temperature Coolant circulator is used wind-cool-type and complete-close-compressor set to refrigerate. By microprocessor control, cooling systems automatically start, time-lapse turn off, with over-heat and over-current protection
2. The Circulator may export the coolant from reservoir, cool or maintain the temperature of out side lab vessel or establish second constant temperature field.
3. Microprocessor controls the time switch from 0-100 hours.
4. Dual windows, Red and Green LED display the set temperature and the actual temperature, respectively. The readout accuracy is  $\pm 0.1^{\circ}\text{C}$ , and the stability is  $\pm 0.1^{\circ}\text{C}$ .
5. Microprocessor-controlled-lock function may lock all parameters.
6. Having Easy-to-use microprocessor control touch keys.
7. Run continuously.
8. Low temperature circulating water (fluids) or low/constant temperature water (fluids) provided by wind-cool-type complete close compressor and microprocessor control system will fit for several apparatus, such as revolving evaporator, fermenter, electron microscope, low temperature chemical reaction kettle, electron power spectrograph, mass spectrograph, densimeter, freeze dryer, vacuum plating, etc.
9. The stainless steel materials were used. Had better use high quality water into reservoir for circulation use. Make sure run the precision apparatus correctly, to prolong the life of use.
10. May be matched with 2 ~ 50 liters revolving evaporator, replace tap water condensation , especially fit for the need of condensation for low boiling point or heat-sensitive materials.
11. In the running reservoir, may put in a container containing biochemical reagents or samples to be performed low temperature test or detection.

**Technical Parameters:**

Model	Temp. range (°C)	V/AC	Capacity (L)	Cooling capacity(W) (20°C)	Accuracy (°C)	Pump flow (L/min)	Pump pressure (bar)	Dimensions (mm)
DLK-5003	-5-RT	220V/50Hz	3	430	$\pm 2$	20	1.2	390*435*430

**Operation Process:**

Add liquid media in bath, with liquid level no less than 30mm lower than work bench.

1. Selection of liquid media

- A) When work temperature is below 5 °C, liquid media shall be alcohol.
- B) When work temperature is between 5 °C-80°C, normally liquid media shall be pure water.
- C) When work temperature is between 80°C-90°C, normally liquid media shall be 1 5 % glycerin water solvent.
- D) When work temperature over 90°C, normally liquid media shall be Silicone oil

2. Connection of cycling pump:

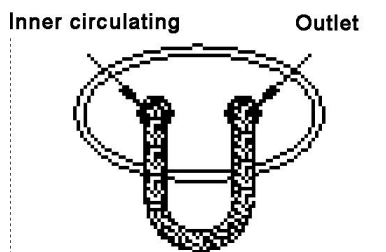
- A) For connection of internal and external cycling pumps, the user only need to connect liquid outlet tube to liquid inlet tube with hose which will be provided with the machine).
- B) Connect external cycle of external cycling pump, connect liquid outlet tube to inlet of vessel outside the bath, and connect liquid inlet tube to outlet vessel outside the bath.

(Note: tube on the left side of front panel of instrument is liquid inlet tube, and the one on the rack panel of the instrument is liquid outlet tube)

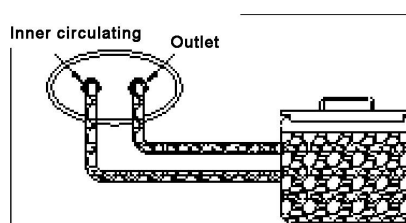
3. Put on the power (on rack control panel)

4. Instrument shall be operated as follows:

Circulating details



Picture 1.1 Inner Loop



Picture 1.2 Outer Loop

- Inner loop: connect with outlet and inner circulating via hose



- Outer loop: The outlet and inner circulating connected to the outer container respectively, set up the second temperature container (Picture 1.2)
- Drain: When finish all process or need change water, open the drain valve, water can achieved, under the water must a water container, or use the water pipe connected to the gutter



**Picture 2: Display**

—) Function key :

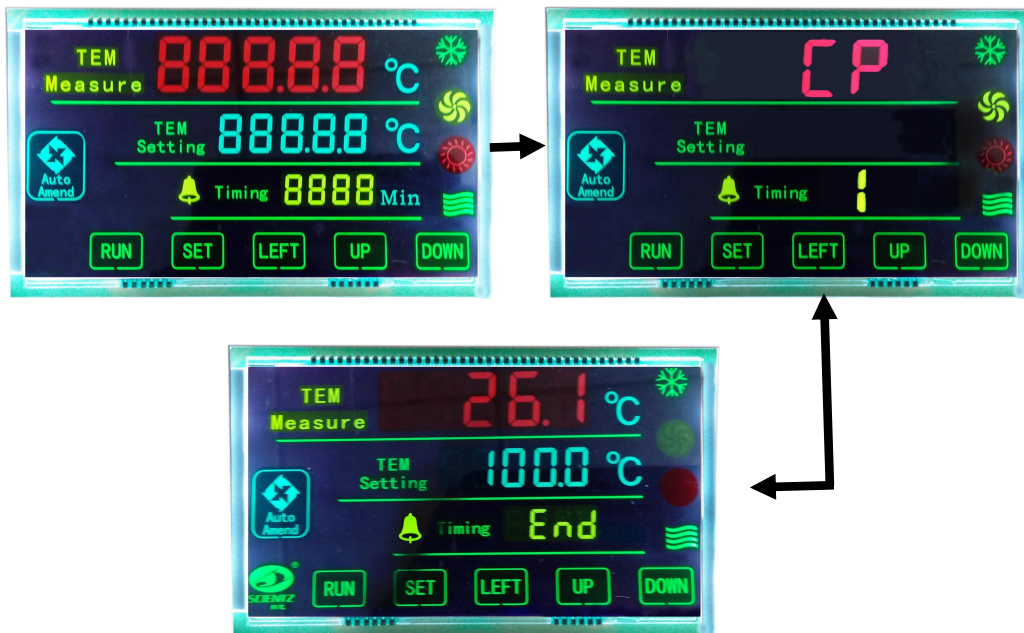
1. ( 1 ) Refrigeration light : When the light flashing refrigeration is on, the cooling function start working after 2-3 minutes, Refrigeration lights long time bright
2. ( 2 ) Circulating pump light: when long press the RUN key button machine, circulating pump auto working, when shut off, the light dark
3. ( 3 ) Water lever light: the light tip groove liquid lever cannot under working table 30mm
4. RUN key : Long press 5 second, the the device start or stop working
5. SET key : TEM Setting and TEM Measure set confirm, and amend etc
6. LEFT MOVE KEY: SETTING data move key
7. UP and DOWN KEY: SETTING DATA “ + “or” -”Long press UP key ,can be check environment temperature

**Notice :if** TEM Measure area display “”, indicate sensor input or the signal over measurement limit ,if display “”, indicate sensor short circuit or the input signal is lower than the lower limited range when the input signal is beyond the scope of range ,buzzer ,press any key be muted.

**二) Data setting**

- A) Please join the bath in liquid medium (such as alcohol).
- B) Turn on the power

**1、 When turn on the device** , ( as picture 3 ) display CP, the first row it's sing point control ,the second empty ,the third it's number 1 ,means reach setting value ,if it's 0 ,that means electric start timing )buzzer alarm ,automatically after 3 ring back to standby model as picture 3

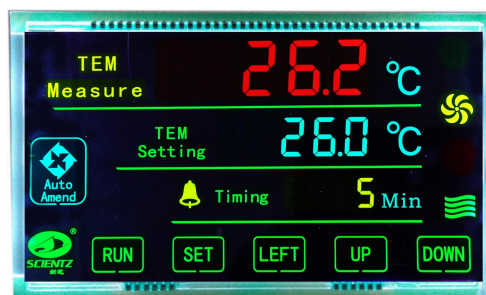


**Picture 3**

**2、 Setting temperature and time:**

**1 ) Press SET key** , TEM Setting area temperature value bottom flash, via pressing(LEFT) shift, increased (UP), and reduce key (DOWN), to SET the required temperature.

**2 ) Press SET key enter into Timing area** value bottom flash, via pressing(LEFT) shift, increased (UP), and reduce key (DOWN), to SET the required time ,press SET key ,then save and return to standby model (see picture 4).



**Picture 4 Temperature and time setting**

### 3、Timing function

When the Timing is set to 0, instrument cancel the Timing function and instrument always running; When Timing set not 0, the meter is timing function, when the meter running time, Timing show END, buzzer, instrument to stop working, and press any key can be muted.

The device work start/stop:

Long press the RUN more than 3 seconds, compressor buzzing, cooling and circulating pump began to work. If you want to stop working and long press the RUN button will stop working, the buzzer alarm, press any key mute.(see picture 5) :



**Picture 5 Timing function**

#### Tech Tip

1. Before using, should add full liquid medium.
2. The power supply should be match with the technical parameter. The power should be greater then or equal to the total power of the machine. Ground wire should be used (Connect the snail located at the left bottom on the rear side) .
3. The machine should be put in dry and drafty place, rear and two sides 400mm apart from other articles.
4. After done, all switches should be in turn off Pull out plug, dry and clean bath

#### Packing list :

1. Main machine	1set
2. Power supply wire	1pc
3. Rubber tube	1pc
4. Cover	1pc
5. Operational Manual	1copy

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