

# Heating Bath Circulators (Programmable)

Highly intuitive user interface is insured by equipping the new smart programmable controller.

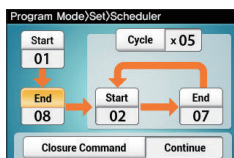
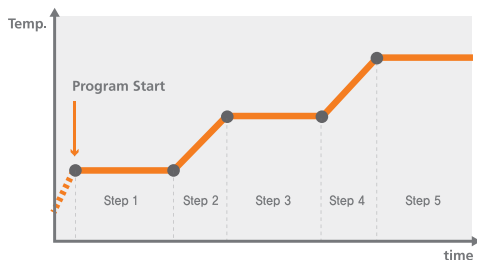


## CW3-P models

- Standard accessories**
- Stainless steel flat cover
  - Silicone rubber tubing (1ft length / 12mm inner dia.)

- Optional accessories**  
see page 28-29
- Test tube racks, Spring wire racks

### Intelligent program control



Convenient scheduler

Program Mode/View

Prog. No.	Temp.	Time	DO Ch.
01	150 °C	20:50	3
02	80.0 °C	10:25	4
03	150 °C	20:50	3
04	80.0 °C	10:25	4
05	100.0 °C	30:15	1

Program view at a glance

Touch LCD Controller



## Intelligent program control

- 10 programs available for temperature ramp up and dwell control.
- 10 steps per a program and 99 hours 59 minutes per a step.
- Stored programs are easily linkable.
- Programs can be repeated up to 99 cycles.
- Pre-heating and heating time are settable before program starts.

## Performance

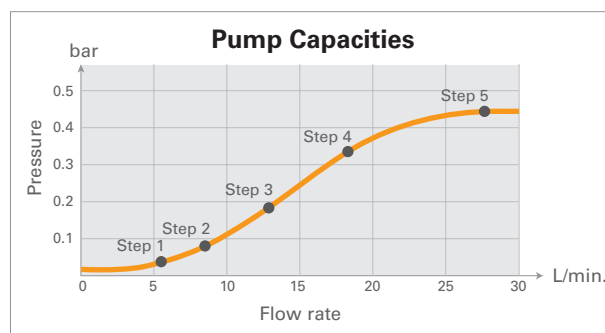
- Temperature range from ambient +5 °C to 150 °C.
- Microprocessor PID control.
- Three point temperature calibration / Automatic tuning / Automatic run.
- Accurate, stable, and efficient temperature management by using a powerful variable-speed pump. (1 to 3 steps of pump for internal circulation and 4 to 5 steps for external circulation)
- Powerful pump pressure and flow rate throughout the whole temperature range.

## Convenience

- Intuitive touch screen LCD controller with easy icons and logical menus.
- Dual wait on/off timer modes. (1 min. to 99 hr. 59 min.)
- Digital input and output control function for interlocking external devices.
- Corrosion-resistant, leak-proof, round-cornered, and easy-to-clean stainless steel bath with front access drain valve.
- RS-232 interface for external control and data collection. (RS-232 to USB serial converter is provided)
- Built-in casters and side handles for easy transport and installation.

## Safety

- Isolated design of agitator, heater, and sensor by a baffle plate to minimize the turbulence in the bath fluid and also to protect users and samples against direct contact.
- Complete safety protection system with warning alarms.
  - Low fluid level and dry-running, over-temperature, over-current.
- Keypad lock function prevents accidental changes during operation.
- Splash-proof keypad.



Pump Step	1	2	3	4	5
Max. pressure (psi)	0.5	1.1	2.4	4.9	5.9
Max. flow rate (L/min)	5.6	8.0	12.8	18.8	28.0

\* Bath fluid: water at the normal temperature.

Model	CW3-05P	CW3-10P	CW3-20P	CW3-30P
Bath volume (L / cu ft)	5 / 0.2	10 / 0.4	20 / 0.7	30 / 1.1
Working temperature range <sup>2)</sup> (°C / °F)	Amb. +5 to 150 / Amb. +9 to 302			
Temperature stability <sup>1)</sup> (± °C / °F)	0.05 / 0.09			0.08 / 0.14
Pump	Max. pressure			
	5.9 PSI (406.8 millibar)			
Pump	Max. flow rate			
	7.4 gallons / minute (28 liters / minute)			
Dimension	Bath opening / depth (WxL, D) (mm / inch)			
	150×99, 160 / 5.9×3.9, 6.3      211×154, 180 / 8.3×6.1, 7.1      290×214, 200 / 11.4×8.4, 7.9      300×264, 230 / 11.8×10.4, 9			
	Exterior (WxLxH) (mm / inch)			
220×395×424 / 8.7×15.6×16.7      281×450×444 / 11.1×17.7×17.5      360×510×464 / 14.2×20.1×18.3      370×560×494 / 14.6×22×19.4				
Net weight (kg / lbs)				
12.5 / 27.6      15 / 33      17.5 / 38.6      19.5 / 43				
Electrical requirements (230V, 50/60 Hz)				
8.5A				
Cat. No.	AAH52741K	AAH52751K	AAH52761K	AAH52771K
Electrical requirements (120V, 60 Hz)				
8.6A				
Cat. No.	AAH52742U	AAH52752U	AAH52762U	AAH52772U

1) Technical data according to DIN 12876. (bath fluid : water at 50 °C)

2) If you operate the unit in 1 to 3 steps of pump, the temperature range can be from Amb. +5 °C but in 4 and 5 steps, the range will be from Amb. +15 °C.

\* FDA establishment registered company. FDA listed products.

# Accessories & Options

## for Heating Baths & Bath Circulators



Transparent polypropylene gable covers



Stainless steel flat covers



Open-rings covers

### Transparent polypropylene gable covers

Designed to protect samples from contamination due to direct dripping of the bath liquid.

Cat. No.	Suitable for
AAA45531	BW-05H / BW-05B
AAA45532	BW-10H / BW-10B
AAA45533	BW-20H / BW-20B

### Stainless steel flat covers

Made of stainless steel to prevent corrosion and rust.

Cat. No.	Suitable for
AAA45541	BW-05H / BW-05B
AAA45542	BW-10H / BW-05B
AAA45543	BW-20H / BW-05B

### Open-rings covers

Beakers or Erlenmeyer flasks can be placed directly onto the perforated stainless steel half-shelf adjuster or water tank bottom.

By adjusting ring size for each glassware, liquid loss due to evaporation is minimized.

Cat. No.	Description	Suitable for
AAA45521	with 2 openings ø80mm / ø3.1"	BW-05H / BW-05B
AAA45524	with 1 opening ø110mm / ø4.3"	
AAA45522	with 4 openings ø80mm / ø3.1"	BW-10H / BW-10B
AAA45525	with 2 openings ø110mm / ø4.3"	
AAA45526	with 1 opening ø185mm / ø7.3"	BW-20H / BW-20B
AAA45523	with 8 openings ø80mm / ø3.1"	
AAA45527	with 6 openings ø110mm / ø4.3"	BW-05G
AAA45528	with 2 openings ø185mm / ø7.3"	
AAA41561	with 2 openings ø80mm / ø3.1"	BW-10G
AAA41564	with 1 opening ø110mm / ø4.3"	
AAA41562	with 4 openings ø80mm / ø3.1"	BW-20G
AAA41565	with 2 openings ø110mm / ø4.3"	
AAA41566	with 1 opening ø185mm / ø7.3"	BW-20G
AAA41563	with 6 openings ø80mm / ø3.1"	
AAA41567	with 4 openings ø110mm / ø4.3"	
AAA41568	with 1 opening ø185mm / ø7.3"	

### Test tube racks

Highly durable stainless steel test tube racks feature adjustable angle and tube height support without requiring any base plate.

You can easily mount and release test tube racks.

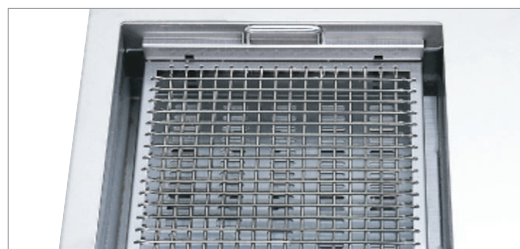
Cat. No.	Description	Insert Capacity of Racks*	
AAA44581	for 86 test tubes ø8mm / ø0.3"	BW-10G CW-20G/P, 30G/P RW3-2025/P, 2040/P RW-33025/P, 3040/P 2ea	BW-20G 3ea
AAA44582	for 86 test tubes ø10mm / ø0.4"		
AAA44583	for 58 test tubes ø12mm / ø0.5"		
AAA44585	for 32 test tubes ø16mm / ø0.6"		
AAA44586	for 19 test tubes ø25mm / ø1.0"	BW-05H BW-05B BW-05G 1ea	RW3-1025/P RW3-1040/P CW3-10/P
AAA41531	for 50 test tubes ø8mm / ø0.3"		
AAA41532	for 50 test tubes ø10mm / ø0.4"		
AAA41533	for 33 test tubes ø12mm / ø0.5"		
AAA41535	for 16 test tubes ø16mm / ø0.6"	BW-10H BW-10B 1ea	BW-20H BW-20B 2ea
AAA41539	for 10 test tubes ø25mm / ø1.0"		
AAA45551	for 176 test tubes ø8mm / ø0.3"		
AAA45552	for 176 test tubes ø10mm / ø0.4"		
AAA45554	for 84 test tubes ø12mm / ø0.5"	1ea	2ea
AAA45556	for 68 test tubes ø16mm / ø0.6"		
AAA45561	for 33 test tubes ø25mm / ø1.0"		

\* No declination.

### Spring wire racks

Ideal for holding a wide variety of tubes, flasks, and other glassware. All components are made of stainless steel.

Cat. No.	Suitable for
AAA45502	BW-10H / BW-10B
AAA45503	BW-20H / BW-20B
AAA41502	BW-10G
AAA41503	BW-20G
AAA51522	CW3-20/P / RW3-2025/P, 2040/P
AAA51523	CW3-30/P / RW3-3025/P, 3040/P



Spring wire racks (two tier rack with flexible crossed spring)

### Half-shelf adjusters

Stainless steel perforated sample tray shelves with adjustable height support prevent leaks and guard against rust and contamination.

Cat. No.	Suitable for
AAA45511	BW-05H / BW-05B
AAA45512	BW-10H / BW-10B
AAA45513	BW-20H / BW-20B
AAA41551	BW-05G
AAA41552	BW-10G
AAA41553	BW-20G



Half-shelf adjusters

### for Viscometer Heating Baths

#### Viscometer tube holders

Specially designed to hold a two-opening viscometer glass tube and made of Bakelite, renowned for its high thermal endurance.

Cat. No.	Suitable for
AAA43501	VB-25G (need max. 5 holders)
	VB-40G (need max. 8 holders)



Viscometer tube holders

### Cooling circulators

The temperature range of viscometer heating baths can be lowered up to +10 °C (+50°F) when used with an optional cooling circulator.

Cat. No.	Description	Suitable for
AAH57051K	RW3-1025 (230V, 60Hz)	VB-25G (230V, 60Hz)
AAH57651K	RW3-1025P (230V, 60Hz)	
AAH57052K	RW3-1025 (230V, 50Hz)	VB-25G (230V, 50Hz)
AAH57652K	RW3-1025P (230V, 50Hz)	
AAH57061K	RW3-2025 (230V, 60Hz)	VB-40G (230V, 60Hz)
AAH57661K	RW3-2025P (230V, 60Hz)	
AAH57062K	RW3-2025 (230V, 50Hz)	VB-40G (230V, 50Hz)
AAH57662K	RW3-2025P (230V, 50Hz)	

\* Refer to p.22 to 25 for more information on the cooling circulators.