



Constant Temperature Bath

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Oil Bath

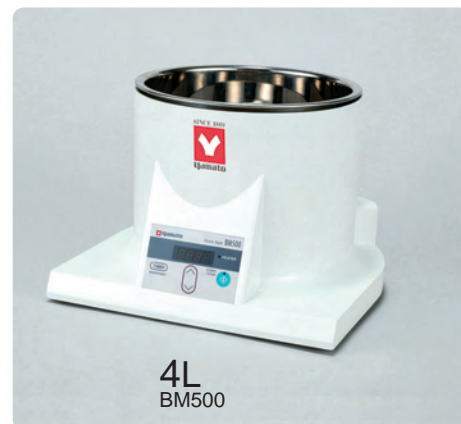
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Economy Constant Temperature Water Bath

BM Series

Setting system	Analog (BM100/110/200/210)	Digital (BM401/410/500/510)	Operating temp. range	Room temp. +5~95°C (BM100/110/200/210/401/410)	Room temp. +5~90°C (BM500/510)	Bath capacity	4L (BM100/110/500/510)	7L (BM200/210/401/410)
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Easy to use, compact design water bath



BM100/110/200/210

- Analog set up system
- Thermometer is included to verify actual temperature
- Protected water tank prevents burns caused by contact
- Equipped with a drain (BM200/210)

BM401/410

- Digital temperature setting by ▲/▼ keys
- Protected water tank prevents burns caused by contact
- Equipped with a drain

BM500/510

- Digital temperature setting by ▲/▼ keys
- Removable water tank for convenient cleaning and changing of water
- Heater situated outside the water tank
- Exclusive connection for bath operational setting function with RE601/801 rotary evaporator

Specifications

Model	BM100	BM110	BM200	BM210	BM401	BM410	BM500	BM510
Operating temp. range *1	Room temp. +5~95°C *1						Room temp. +5~90°C	
Temp. adjustment accuracy*2	±2°C (at 60°C)				±1°C (at 60°C)		±1.5°C (at agitation)	
Temp. control system	ON/OFF control				PID control by microprocessor			
Temp. setting / display method	Analog setting (Glass thermometer indication)				Digital setting by ▲/▼ keys		Digital 7 segment LED Digital setting by ▲/▼ keys	
Operation function	Operation at fixed point						Fixed temperature, quick auto stop, auto start	
Additional function	--				Temp. preset function (preset / select one temp.)		Keypad lock, maintenance function (RE signal transmission and reception), calibration off-set, power failure recovery	
Heater	SUS316 pipe heater 500W		SUS316 pipe heater 1kW			1kW (100V) 1.44kW (120V)	1kW (200V) 1.44kW (220V)	
Sensor	Liquid expansion type				Pt100Ω		K thermocouple	
Safety device	Bath protection cover						Bath protection cover (ABS heat-resistant resin)	
	Overcurrent protection (fuse: 7A), thermal fuse		Overcurrent protection (fuse: 15A), thermal fuse		Self-diagnostic functions (Automatic overheat prevention, Sensor trouble, Triac short circuit, heater disconnection, main relay failure), circuit protector, thermal fuse		Self-diagnostic functions (Automatic overheat prevention, Sensor trouble, Triac short circuit, heater disconnection, main relay failure), circuit protector, thermal fuse, micro switch to detect heating without water	
Water tank	Capacity	~4L		~7L			~4L	
	Dimensions	I.D.200 x D120mm		I.D.250 x D150mm			Max. I.D.240 x bottom dia165 x D122mm	
External dimensions	W240 x D300 x H150mm		W310 x D360 x H230mm			W340 x D349 x H231mm		
Weight	~3.5kg		~6kg			~7kg		~5.5kg
Power source (50/60 Hz)	AC115V 4.5A paddle switch	AC220V 2.3A paddle switch	AC115V 9A	AC220V 4.5A	AC115V 9A	AC220V 4.5A	AC100V~120V 10.5~12.5A	AC200~240V 5.5~6.5A
Accessories	Bar thermometer (10~110°C) with immersion line				--		--	

*1. No load operation of bath only. Maximum temperature varies based on different circumstances and operational conditions.

*2. Measured under ambient temperature of 23°C±5°C, humidity of 65%RH±20%.

Constant Temperature Water Bath

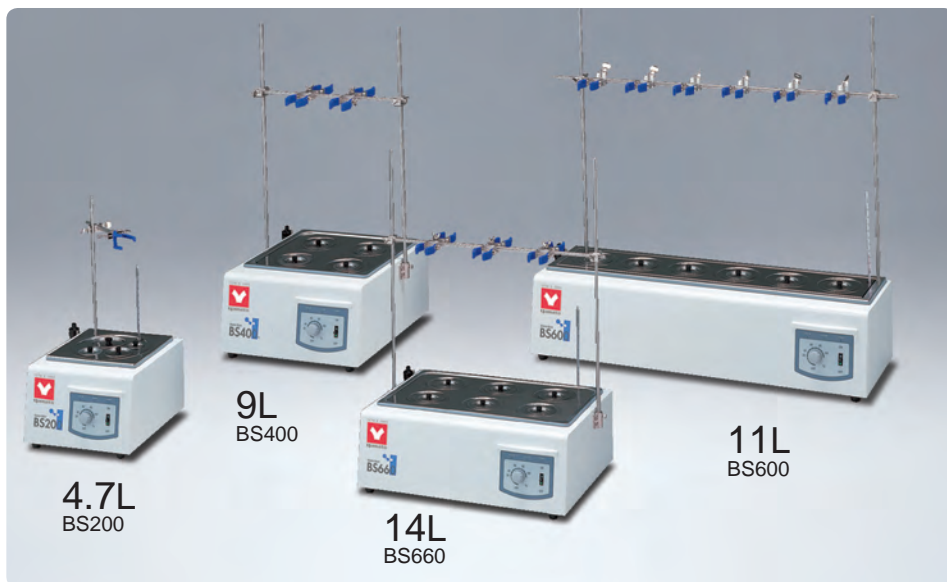
BS Series

Operating temperature range RT+5°C~Water boiling point

Temperature distribution accuracy ±5°C (at 70°C)

Bath capacity 4.7L BS200 9L BS400 11L BS600 14L BS660

Standard equipped with overheat prevention device, electric leakage breaker.

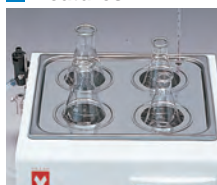


- BS200
 - 4 types of accessorial baskets. Maximum 5L beaker can be set after removing the lid
- BS400
 - Comes with 4 container mounting clamps and cooling water distributor (optional item)
- BS600
 - Up to 6pcs. of containers can be used simultaneously
- BS660
 - Fits small and large containers. Up to 6pcs. can be used simultaneously. Sink level can be adjusted

Control Panel



Features



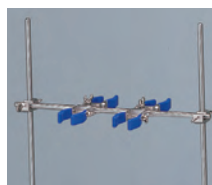
For different flask size



Removable lid



Easy to change water level by adjusting over flow



Sturdy die-cast clamps

Specifications

Model	BS200	BS400	BS600	BS660
Operating temperature range	RT+5°C~Water boiling point *1			
Temperature adjustment accuracy	±3°C (at 70°C)			
Temperature distribution accuracy	±5°C (at 70°C)			
Max. temperature reaching time	~35min.		~60min.	~50min.
Internal tank material	Stainless steel			
Heater	Copper Pipe Heater (Nickel Plated)			
	0.9kW	1.4kW	1.3kW	
Safety device	Overheat prevention system (Liquid expansion type, Self sustaining relay, Alarm lamp), Electric leakage breaker with overcurrent protection			
Internal dimension	ø200 x D149mm	L328 x W302 x D99mm	L790 x W150 x D102mm	L502 x W302 x D99mm
Effective internal dimension	ø186 x D115mm	L298 x W260 x D64mm	L776 x W140 x D73mm	L468 x W260 x D66mm
External dimension *3	L300 x W364 x H216mm	L390 x W438 x H214mm	L864 x W288 x H215mm	L565 x W437 x H214mm
Bath capacity	~4.7L	~9L	~11L	~14L
Power source (50/60Hz)	AC115V, 8A AC220V, 4.5A	AC115V, 12.5A AC220V, 6.5A	AC115V, 11.5A AC220V, 6A	
Opening size, quantity	—*2	ø115mm, 4pcs.	ø115mm, 6pcs.	
Weight	~5kg	~9.5kg	~16kg	~12kg
Accessories	Ring (excluding BS200), lid, clamp, stand, clamp bar (excluding BS200), connector (for stand), thermometer (0~+100°C alcohol type), bottom plate and basket (for BS200)			

*1. Ambient temperature might impact the boiling point. Conditions: RT23°C±5°C, humidity 65%±20% (no load).

*2. 4 lids. Suitable for erlenmeyer flask up to ø96 x D50mm 300ml, ø56 x D40mm 50ml, ø40 x 30mm.

*3. Protrusions not included. Power cord length 2m.

Optional items

Product code	Description	Suitable models
222081	Cooling water distributor (supply/drain tube ø12mm, caliber of spout ø8.5mm)	BS400
222086	Cooling water distributor (supply/drain tube ø16mm, caliber of spout ø8.5mm)	BS600

Includes distribution pipe 2pcs., connector 4pcs., 2pcs.=1set (supply/drain). One connected to water faucet will inject water to 4 cooling water distributors.



Cooling water distributor for BS400

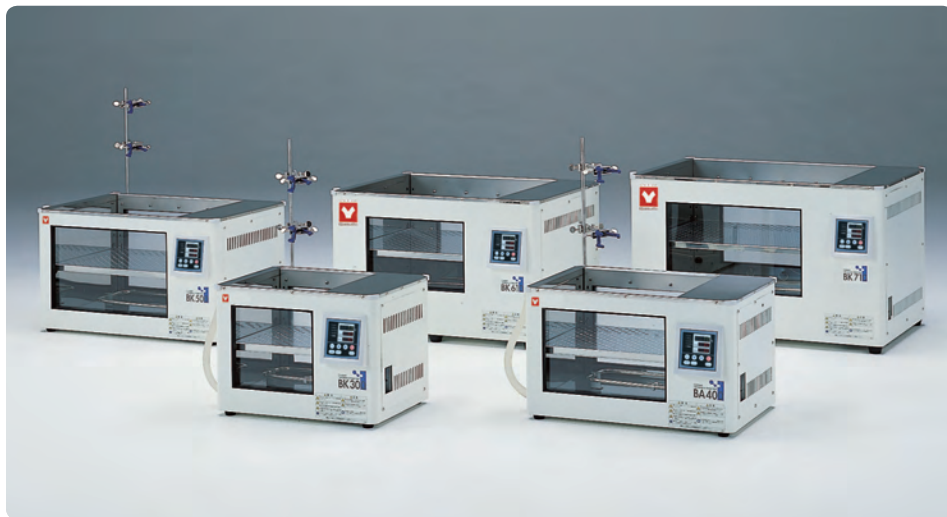
Precision Constant Temperature Agitating Water Bath

BK · BA Series

Operating temperature range RT+5~80°C

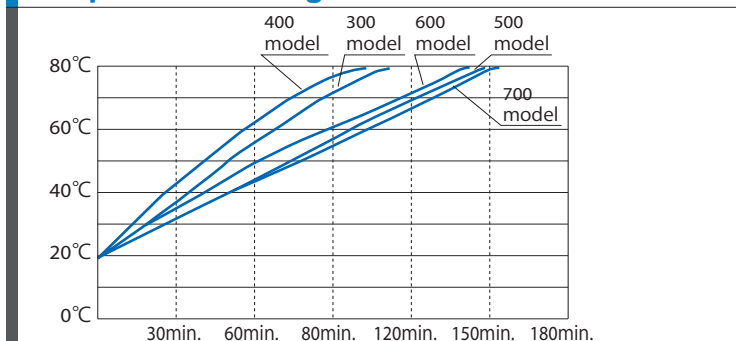
Temperature control accuracy ±0.02°C~±0.07°C

Bath capacity 27L~144L



- BK series - Fixed temperature operation
BA series - Program operation
- In addition to BK series function, BA series adopted controller with program operation function (1 pattern 30 steps or 2 pattern 15 steps)
- Tank capacity: 27L, 42L, 70L, 109L, 144L
- Extremely high degree of temperature adjustment precision achieved by adopting high-precision thermostat and circulation pump
- Digital display setting and indicated value of temperature and time
- Equipped with observation window
- Optional items include cooling coil, top cover, mounting rack, and viscosity meter support

Temperature Rising Curve



Control Panel



BK series control panel



BA series control panel

Specifications

Model	BK300	BA300	BK400	BA400	BK500	BA500	BK610	BA610	BK710	BA710
Stirring method	Stir by pump									
Operating temp. range	RT+5~80°C									
Temp. control accuracy	±0.02~±0.07°C									
Temp. distribution accuracy	±0.3°C									
Max. temp. reaching time	~120min.		~110min.		~165min.		~160min.		~200min.	~160min.
Interior material	Stainless steel and glass									
Temp. controller	PID control by microprocessor (BK: Fixed temperature operation, BA: Fixed temperature and program operation, 1 pattern 30 steps or 2 pattern 15 steps)									
Sensor	W sensor: Pt resistance thermometer, Pt 100Ω(temp. controller) + K thermocouple (overheat protector)									
Temp. setting / display method	Digital setting / display									
Overheat protector	ON / OFF by microprocessor									
Heater (SUS316)	1.3kW		2.2kW		2.4kW		3.5kW		4.5kW	
Stirring System (Magnet pump)	6W		30W				60W			
Timer	1min.~99Hrs. 59min. to 999Hrs. 50mins, Digital setting, Auto start, Auto stop, Quick auto stop									
Safety device	Self-diagnostic functions (Heater disconnection, SSR short circuit, Abnormal sensor, Over current), Electric leakage breaker, Over heat protector									
Internal dimensions (W x D x H mm)	300×300×300		400×350×300		500×400×350		548×500×400		640×500×450	
External dimensions (W x D x H mm)	490×360×367		590×410×367		690×460×417		738×560×467		830×560×517	
Window dimensions (W x H mm)	240×215		340×215		440×265		340×215		440×265mm	
Bath capacity	~27L		~42L		~70L		~109L		~144L	
Shelf pitch	30mm									
Number of plates	5				6		9		10	
Drain hose	ø15×20mm									
Power source 50/60Hz	AC115V / AC220V						Single phase AC220V			
	12.5 / 6.5A		20A / 10.5A		22A / 11.5A		17.5A		23A	
Weight	~19kg		~25kg		~30kg		~36kg		~46kg	
Included accessories	Shelf plate 1pc., clamp 2pcs., stand 1pc., clamp holder 2pcs., tube connector 1pc., drainage cap 1pc.									

Optional Items

Shaking unit

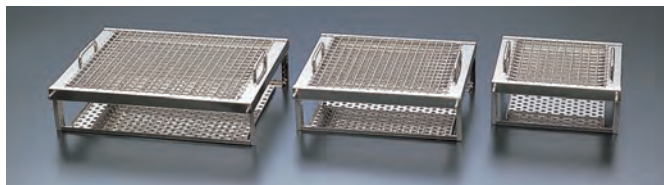
Model	Shaking range	Shaking frequency
BN300	10-30 mm	20-160 rpm



BK400 + BN300

Mounting rack

Product code	Dimension (W x D x H)	Suitable models
221195	294 x 272 x 148.5mm	BK/BA300
221196	394 x 322 x 148.5mm	BK/BA400
221197	494 x 372 x 148.5mm	BK/BA500



Mounting rack

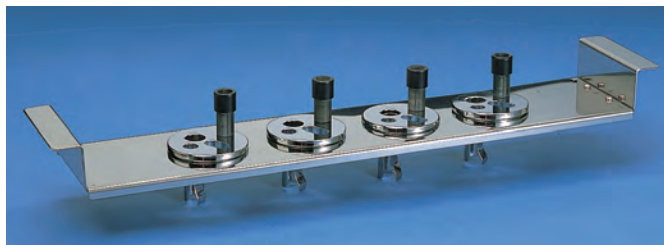
Viscosity meter support

Product code	Specification	Suitable models
221189	4 pcs. / bracket	BK/BA300
221183	4 pcs. / bracket	BK/BA400
221184	5 pcs. / bracket	BK/BA500

Able to hold Cannon-Fenske and Ubbelohde viscometer, easy to measure kinematic viscosity.

Base: Stainless steel 304

Holder: Brass nickel plated



Viscosity meter support

Water pump

Model	Specification
PT-16	Operating temperature range RT-80°C Lift about 2m, water supply about 9L/min. Dimension: 17mm

Pump water in closed container, which includes distillation column, refractometer and other instruments inside, to continuously circulate and keep warm or warm up liquid.



Water pump

Cooling coil

Product code	Specification	Suitable models
221182	Copper pipe nickel plating I.D. 8mm x Length 1.8m E.D. 12mm	BK/BA300, 400, 500

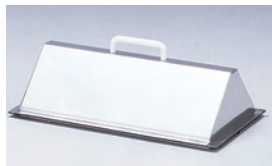
Use inside a tank. Cooling water pipe not included.



Cooling coil

Top cover of water tank (stainless steel)

Product code	Suitable models
221192	BK/BA300
221193	BK/BA400
221194	BK/BA500
221383	BK/BA610
221384	BK/BA710



Top cover for BK/BA300,400,500



Top cover for BK/BA610,710

Stand with caster

Product code	Suitable models
221385	BK/BA610
221386	BK/BA710

Programmable Precision Constant Temperature Water Bath

BH Series

Operating temp. range

RT+15~100°C (BH401)
Water bath

RT+15~200°C (BH501)
Water or oil bath

Temp. adjustment accuracy

±0.01°C

Bath capacity

~13L(liquid 10L)

Benchtop precision constant temperature bath equipped with high performance controller for higher precision and wider temperature range.



■ Operation and functions

- Precision controller enables temperature adjustment accuracy of ±0.01°C (at 20°C)
- BH501 can be used as precision water or oil bath
- Maximum of 99 steps of programming operation, fixed temperature operation, Quick auto stop, Auto stop and Auto start functions
- RS485 communication function, Temperature output terminal (1~5V), Alarm output terminal, calibration offset function and key lock function
- Better external circulation with powerful circulation pump
- Circulation pump flow changeable up to 10 patterns
- Circulated water temperature (closed type) can be controlled precisely by external sensor
- Control panel can be removed for remote control by using communication cable (sold separately)

■ Safety features

- Self diagnostic functions, Earth leakage circuit breaker, Empty boiling prevention switch, Automatic overheating prevention, Independent overheating prevention

■ Specifications

Model	BH401	BH501
Circulation system	Water jet pump circulation (closed system circulation)	
Operating temperature range	RT+15~100°C	RT+15~200°C
Temperature adjustment accuracy	±0.01°C (water: RT+15°C~80°C), ± 0.1 (silicon oil: KF96/50cst 70°C~200°C)	
Temperature indication unit	0.1°C	
Circulation Pump (50/60Hz)	Water jet pump circulation	
Pump max. flow	14/15L/min. (Circulation pressure loss when below 10kPa)	
Pump max. lift	2.8/3.4m (water flow about 0.5L/min)	
Heater	1kW	1.2kW
Ambient temperature range	5~30°C	
Temperature control / system	PID control by microprocessor	
Temperature setting / display method	Digital setting / display	
Sensor	W sensor: Pt 100Ω A-class (for temperature control)+ K-thermocouple (for overheat prevention) double sensor	
Timer	1min.~99hrs.59min., 100~9999hrs Timer/Time switchable function	
Operation function	Fixed temp. operation, Quick auto stop, Auto stop / start at setting time, Program operation (max. 99 steps, repeating, gradient operation), Program auto start operation	
Safety device	Earth leakage circuit breaker, Key lock function, Breakout protection function, Automatic overheating prevention, Independent overheating prevention, Float switch	
Other functions	RS485 communication function, Temperature output terminal, Alarm output terminal, Calibration offset function	
Dimensions	W239 x D299 x H200mm	
Internal capacity	13L (liquid 10L)	
Effective water bath dimension	W227 x D150 x H200mm (front corner R34)	
External dimension	W310 x D396 x H607mm (water bath height)	
Power source	AC115V 10A / AC220V 5A	AC115V 11.5A / AC220V 6A
Weight	~20kg	
Accessories	Hose nipple (1/2 x ø14mm) 2pcs.	

*1. Performance value test condition: room temperature 20°C, no load, power source 50Hz

*2. Protrusions not included



Detachable control panel.
Remote control power source (optional item) needed in case remote control communication cable is longer than 5m.

Control Panel

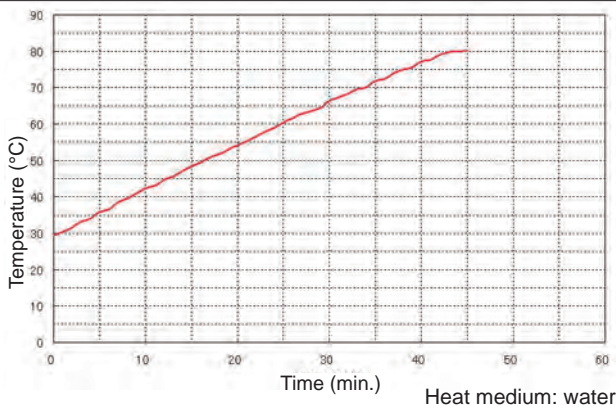


Program controller CR5 model

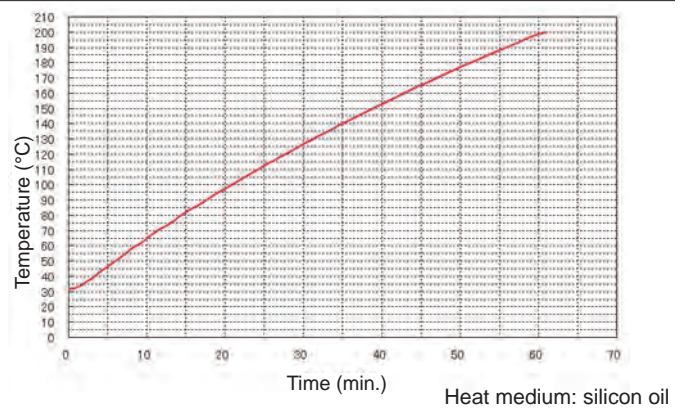
Rear View (Circulation port)



BH401 Heating Performance



BH501 Heating Performance



Optional items

Product code	Description	Specifications
280094	Silicon hose for circulation	I.D. ø12mm, Length 2m, 1pc.
281388	External communication adapter	RS485 – RS232C conversion
281350	External Pt sensor	Pt 100Ω, A level with protection tube, 3m
281397	Communication cable for remote control	4 holes, 5m
281398	Remote control panel stand	
281399	Remote control power	AC100V – DC5V (For 115V/220V compatibility verification)



Remote control panel stand



Remote control power

Low Constant Temperature Water Bath

BBL101/301

Temperature control range

-10~+80°C

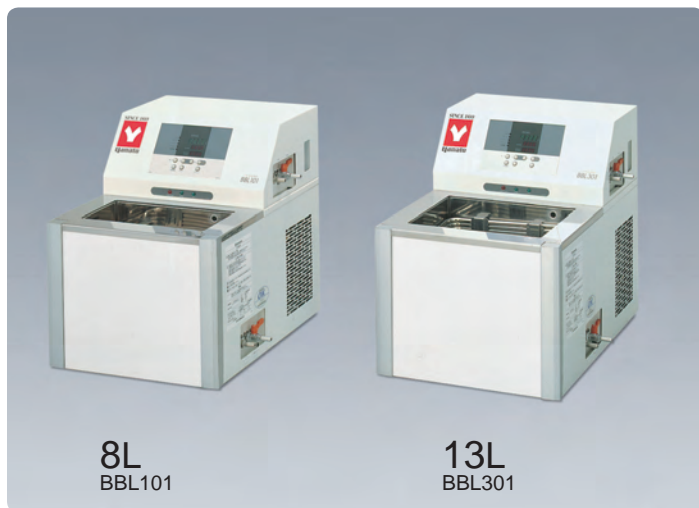
Temp. distribution accuracy

±0.3°C

Internal capacity

8L	13L
BBL101	BBL301

Benchtop water bath with wide operating temperature range and sufficient bath capacity.



8L
BBL101

13L
BBL301

Benchtop constant low temperature water bath, with capacity 8L/13L and operating temperature range -10~80°C

- Precision control with temperature adjustment accuracy of ±0.1°C
- More applications available with larger tank space
- Internal / External Circulation can be changed easily
- Shelf height is 2 stage adjustable for different flask sizes
- Standard equipped with auto stop, auto start, RS485 communication function, temperature output terminal (4~20mA)
- Enhanced safety features includes self diagnostic function, over-current circuit breaker, refrigerator overload relay, empty boiling prevention float switch, refrigerator protection delay timer function

Specifications

Model	BBL101	BBL301
System	Pump circulation cooling / external circulation system	
Temperature control range *1	-10~+80°C (at room temperature 20°C)	
Temperature adjustment accuracy *1	±0.1°C	
Temperature distribution accuracy *1	±0.3°C	
Cooling capacity *1	~370W (320Kcal/h) (at liquid temp. 15°C)	~410W (350Kcal/h) (at liquid temp. 15°C)
Ambient temperature *1	5~30°C	
Temperature control	PID control	
Operation function	Fix temperature, Auto stop, Auto start	
Temperature sensor	Double sensor: Pt100Ω (for temp. control) and K-thermocouple (for overheat prevention device)	
Refrigerator / coolant	160W Air-cooled fully closed compressor R134A	300W Air-cooling sealed rotary R404A
Circulation method	Magnet pump circulation	
Circulation system capacity (50/60 Hz)	Maximum flow rate (pump capacity): 3.7/4.7L/min. (11.0/12.0L/min.) Maximum pump head (pump capacity): 1.0/1.5m (1.5/2.1m)	
Heater	700W	900W
Safety device	Earth leakage breaker, refrigerator overload relay protecting circuit, refrigerator pressure detection, empty boiling prevention float switch, delay timer for refrigerator protection, overheating prevention device, power failure protection function, key lock function	
Other function	Drain port, condenser filter, RS485 communication function, temperature output terminal, refrigerator pressure switch indicator, calibration offset	
Bath dimensions *2	W300 x D150 x H177.5 (Effective dimensions 238 x 100 x 85mm)	W300 x D240 x H177.5 (Effective dimensions 238 x 190 x 85mm)
Internal (effective) capacity	8 (6.95) L	13 (11.5) L
External dimensions *2	W500 x D530 x H500mm (water bath height 330mm)	W502 x D603 x H500mm (water bath height 330mm)
Power source (50/60Hz)	AC115V 8A / 220V 4A	AC115V 11A / 220V 6A
Weight	~50kg	~55kg
Accessories	Bottom shelf 1 pc., lid, drain hose 0.5m 1pc., over flow hose 0.5m 1pc.	

*1. Performance data tested at RT20°C, no load, rated power 50Hz, performance might vary in different conditions

*2. Projections not included

Note: Refrigerator turns OFF when setting temperature higher than 40.1°C.

Max. quantity of erlenmeyer flask

Model	300mL	500mL	1000mL
BBL101	3 pcs.	2 pcs.	--
BBL301	5 pcs.	3 pcs.	2 pcs.

Optional items

Product name	Description	Product code
External communication adapter	RS485-RS232C conversion	281387
Shelf for BBL101	Shelf support 4pcs.	221586
Shelf for BBL301	Shelf support 4pcs.	221587

Control Panel



Monitoring indicator for pump and refrigerator

Side View

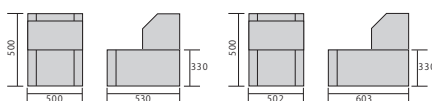


Equipped with water switch valve for easy switch ON/OFF the external circulation. Nozzle diameter 10.5mm.

Example of Application



Dimensions (mm)



BBL101

BBL301

Immersion Constant Temperature Device

Thermomate® BF Series

Operating
temp. range

Room temp. +5~80°C
BF200/400/500

Room temp. +5~180°C
BF600

Multi-function immersion thermostatic device for various usage



Immersion constant temperature device with improved performance, operability and safety

Variation

- No protrusions, easy to set up
Can be used as constant temperature water bath, shaking incubator (when combined with bath with shaker) or oil bath (when combined with bath made of different material)

Operation and functions

- Four models including basic model with only fixed temperature operation and multi-function models with segment programming function, external output and external communication function
- Water jet strength can be adjusted in 10 patterns
- Temperature preset function enables memory and read out of temperature
- BF600 can be used for water or oil

Safety features

- Self-diagnostic functions, circuit protector, water level detection sensor and buzzer alarm for errors

Specifications

Type	Basic	Multi-function		Oil/water compatible
Model	BF200	BF400	BF500	BF600
Temp. setting range	-20.0~100°C*1			0~200°C
Temp. control range	RT+5~80°C*2			RT+5~180°C*4
Temp. control accuracy	±0.05~0.1°C*3		±0.02~0.05°C*2	±0.05~0.2°C*4
Stirrer	Propeller stirring		Water jet stirring	Propeller stirring
Heater	Stainless pipe heater 1.0kW			1.2kW
Temp. control system	PID control by microprocessor			
Temp. setting	Digital setting by ▲▼ keys			
Temp. display	Digital display by green LED			
	Minimum display indication: 0.1°C			Display indication: 1°C
	Switch between setting temperature and measured temperature		Displayed on main indicator (setting temperature displayed on sub indicator)	
Timer	--	1min. to 99hrs.59min. and 100hrs. to 999hrs.		
Timer resolution	--	1min. and 1hr.		
Operation functions	Fixed temperature operation	Fixed temperature operation: Continuous operation at set temp., Quick Auto stop Program operation: 1~3 patterns, maximum 5 segment patterns (Repeat, gradient operation)		
Additional functions	Temperature presetting (temperature memory / recall)	Temperature presetting (up to 10 temperature memory / recall), operation time accumulation function (up to 49999 hours), key lock function		
	--	--	Water jet strength 10 patterns changeable function. Pump discharge port variable function	--
	--	--	Temp. output (10mV/°C)*5*6	--
	--	--	External alarm output*5*6	--
	--	--	Time up output*5*6	--
Heater circuit	Triac Zero-cross type			
Sensor	Thermister			Pt Sensor
Safety device	Self-diagnostic functions (Automatic overheating prevention, Temperature sensor abnormal, Heater disconnection*, Triac short circuit**, Main relay defect**), Circuit protector, Water level detection sensor (float type), Buzzer alarm for abnormal condition			
External dimension*8	W140 x D138 x H305mm ~7kg			
Clamp available thickness	Up to 35mm			
Power source 50/60Hz	AC115V 10A / AC220V 5A			AC115V 11.5A / AC220V 6A
Included accessory	Testing bath model BY100 (Polypropylene)			

*1. When using under room temperature +5°C, please combine with constant low temperature water bath or neo cool dip BE model

*2. When using testing bath BY100

*3. Setting temperature 60°C, using testing bath BY100

*4. Setting temperature 100°C, using testing bath BZ100D, viscosity 50cst silicon oil

*5. Output by one output terminal

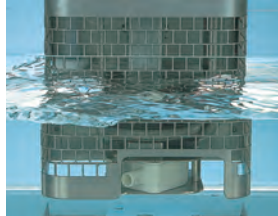
*6. Connection cable optional item

*7. BF200 not tested

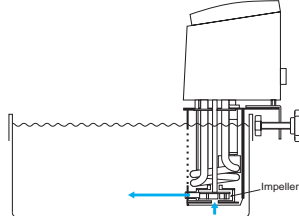
*8. Protrusions not included

Function Chart

Model	BF200	BF400	BF500	BF600
Digital setting / display	●	●	●	●
Temperature preset	●	●	●	●
Program function		●	●	●
Water jet strength changeable function		●	●	
Propeller stirring	●			●
External output, communication function			●	
Oil temperature control				●



Water jet stirring (BF400/500)



Structure of water jet stirring

Control Panel



BF200

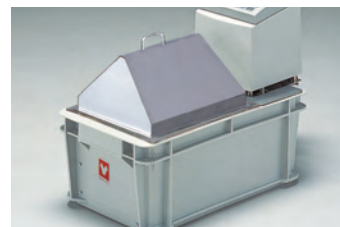


BF400/500

Optional items



1-Level controller 2-Cooling pipe



3-Bath cover



4-External circulation nozzle



5-Float for micro tubes



Testing bath: select according to purpose, sample amount and temperature



Combination of Thermomate BF600 and BZ series testing bath

No.	Product code	Model	Product Name	Specifications
1	221570	OBF10*	Level controller (Automatic water supply unit)	Directly connected to tap water (Electromagnetic valve open / close) Equipped with float type water level detection function Fixed to testing bath by clamp
2	221572	OBJ10	Cooling pipe	SUS304 O.D.φ10mm Neoprene hose 3m (φ13 x φ9)
3	221578	OBI11	Bath cover (Additional process needed when combined with cooling pipe and external circulation nozzle)	Polycarbonate cover for testing bath BY100 (Cover cannot be used together with Automatic water supplier, external circulation nozzle, and Cooling pipe)
4	221573	OBG10	External circulation nozzle	External closed circulation available by connecting to BF400/500 I.D.9mm Neoprene hose 3m Flow rate: ~8L/min Lift: ~1.8m
5	221575	OBH10	Float for micro tubes	(For ø8mm) External dimension: 90x137mm
	221576	OBH20		(For ø11mm) External dimension: 90x137mm
6	221574	OBL10	Cable for BF500	Temperature output, External alarm output, Time up output
	221577	OBK10		Cable for external communication
	281257	RC23		Interface for computer connection (with AD adapter)

*Supply water pressure 50~500kPa (0.5~5kgf/cm²).

Material	Product code	Bath dimension	Capacity	Permissible operating temperature
Stainless steel plate	BZ100	230x390x150mm	12L	Room temperature to +200°C Use for high temperature and oil bath
	BZ100D	240x300x200mm	13L	
	BZ200	300x500x150mm	20L	
	BZ300	300x500x200mm	27L	
Polypropylene	BY100	327x185x156mm	8L	+5°C~+80°C
	BY200	455x300x160mm	18L	
Acrylic	BX100	230x390x150mm	12L	≤50°C Dedicated for water
	BX100D	240x300x200mm	13L	
	BX200	300x500x150mm	20L	

Immersion Constant Temp. Device Combination Examples

Constant temperature		
BF200	BF200	BF400
Constant temp. water bath	Low temp. water bath + Neo cool dip	Shaking bath BW series
Thermomate BF200 + Testing bath BZ100D	Thermomate BF200 + Testing bath BZ100D + Neo cool dip BE201F	Thermomate BF400 + Shaking bath BW400

Immersion Cooler (Neo Cool[®] Dip)

BE Series

Operating temp. range -20~+35°C

Easy to use compact benchtop immersion cooler in combination with water bath



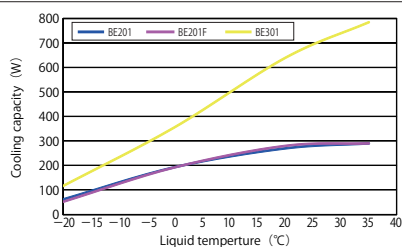
- Cools down water bath immediately by dipping cooling coil into fluid
- Improved safety by adopting overcurrent circuit breaker
- Spiral tube of BE201 changed from copper to chrome plated copper with high corrosion resistance
- Stainless steel flexible cooling coil of BE201F/301 is high corrosion resistant and can be easily bent to fit various bath capacities
- Comes with handles for better usability

Specifications

Model	BE201	BE201F	BE301
Operating temp. range	-20~+35°C		
Ambient temperature	+5~+35°C		
Cooling capacity	190W at 0°C Naiburain 60% 5L Room temp. 20°C		350W at 0°C Naiburain 60% 10L Room temp. 20°C
Refrigerator	Reciprocating type 160W		Reciprocating type 400W
Refrigerant / amount	R134a/110g	R134a/160g	R404A/170g
Cooling coil	Chrome plated copper Spiral tube ø30x170mm (Winding O.D.xLength)	SUS 304 Flexible Tube ø15x500mm (O.D.xLength)	ø15x1,000mm (O.D.xLength)
Power source	AC115V 50/60Hz 3A/2A AC220V 50/60Hz 2A/1.5A		AC115V 50/60Hz 5A/4.5A AC220V 50/60Hz 2.5A/2.5A
External dimensions*	W410xD320xH303mm		
Weight	~24kg		~25kg

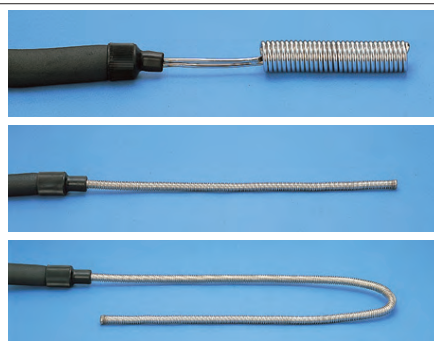
* Protrusions not included

Cooling Capacity



Conditions:
Room temperature: 20°C
Power source: AC115V/50Hz
Cooling liquid: Naiburain 60% dilution
With tank lid and stirring bar in the tank

Cooling Coil



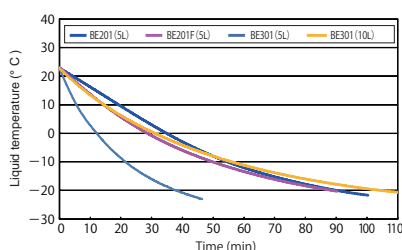
BE201
(Dia.30 x length170mm)

BE201F
(Dia.15 x length500mm)

BE301
(Dia.15 x length1000mm)

Cooling coils are made of different material and shape for different usage.

Temperature Decreasing Curve



Conditions:
Room temperature: 23°C
Power source: AC115V/50Hz
Cooling liquid: Naiburain 60% dilution
With tank lid and stirring bar in the tank

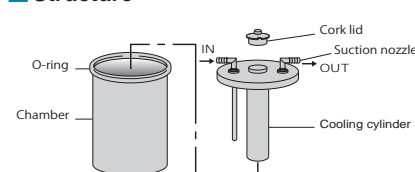
Cold Trap (optional item)

Cold trap made of Aluminum, easy cooling by Neocool dip.

Specifications

Product code	221481
External dimensions	ø210x290mm
Chamber dimensions	ø180x245mm
Cooling cylinder dimensions	ø45x220mm
Suction nozzle	ø18 (O.D.)
Chamber material	Aluminum (anodized finish)

Structure



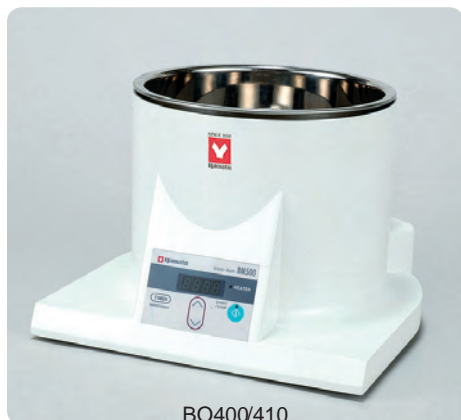
Hose sold separately

Economy Constant Temperature Oil Bath

BO Series

Operating temp. range	Room temp.+10~180°C (BO400/410)	Room temp.+5~199°C (BO500)	Room temp.+5~180°C (BO601)	Bath capacity	4L (BO400/410)	5.2L (BO500)	7L (BO601)
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Easy to use, digital setting, compact design oil bath



BO400/410

- Digital temperature setting by ▲/▼ keys
- Removable oil tank for convenient cleaning and changing of oil
- Heater situated outside the water tank
- Exclusive connection for bath operational setting function with RE601/801 rotary evaporator



BO500 + MB800 (Magnetic Stirrer)

- Stainless steel oil bath
- Bath protection sheet to prevent operator from burning
- Must be used with MB800 magnetic stirrer



BO601

- Digital temperature setting by ▲/▼ keys
- Protected oil tank prevents burns caused by contact
- Equipped with a drain

Specifications

Model	BO400	BO410	BO500	BO601
Operating temp. range*1	Room temp. +10~180°C		Room temp. +5~199°C	Room temp. +5~180°C
Temp. control accuracy*2	±2°C (at agitation)		±0.5°C	±2°C (at 100°C)
Temp. control system	PID control by microprocessor		Proportional control	PID control by microprocessor
Temp. setting / display method	Digital setting by ▲/▼ keys		Digital / Glass thermometer	Digital setting by ▲/▼ keys
Operation function	Fixed temperature, quick auto-stop, auto stop, auto start		--	Fixed temperature, quick auto-stop, auto stop, auto start
Additional function	Keypad lock, RE signal transmission and reception, power failure recovery, calibration off-set		--	Keypad lock, power failure recovery, calibration off-set
Heater	1.44kW (120V)	1.44kW (240V)	Pipe heater 700W	SUS316 pipeheater 1kW
Sensor	K thermocouple		Pt100Ω	K thermocouple
Safety device	Bath protection cover (ABS heat-resistant resin) Self-diagnostic function (automatic overheat prevention, temperature sensor error, triac short circuit, heater disconnection, main relay failure), circuit protector, thermal fuse, micro switch to detect heating without oil		Bath protection sheet	Bath protection cover Self-diagnostic function (automatic overheat prevention, temperature sensor error, triac short circuit, heater disconnection, main relay failure), circuit protector, thermal fuse
Interlocking control function	RE601/801 signal transmission and reception (constant operation, heat retention operation, stop), Error report to RE601/801		--	--
Water tank	Capacity	~4L	~5.2L	~7L
	Dimensions	Max. I.D.240 x bottom Dia165 x D122mm	ø240 x 130mm	I.D.250 x D150mm
External dimensions	W340 x D349 x H231mm		W250 x D290 x H130mm	W310 x D360 x H230mm
Weight	~5.5kg		~1.4kg	~8kg
Power source (50/60 Hz)	AC100~120V 10.5~12.5A	AC200~240V 5.5~6.5A	AC115V 7A / AC220V 4A, no breaker*3	AC115V 11A / AC220V 7A

*1. No load operation of bath only. Maximum temperature varies by different circumstances and operational conditions.

*2. Measured under ambient temperature at 23°C±5°C, humidity of 65%RH±20%.

*3. When combined with magnetic stirrer MB800, power source is from MB800 main unit outlet.

Model	MB800 (in combination with BO500)
Stirring plate	Material: Aluminum, dimension: W250xD220mm
Stirring capacity	100ml~10L
Rotation speed	70~1200rpm
Motor	AC motor, Electronic control
Overheat prevention	70~200°C
Sensor	Thermistor
Safety device	Current leakage breaker, Oil bath power shutdown overheat prevention device
Power source (50/60Hz)	AC115V 10A / AC220V 5A (MB800+BO500 combined with oil bath)
External dimensions	W250xD270xH150mm
Weight	~4.2kg
Accessories	Stirrer 40mm 1pc.

Economy Constant Temperature Oil Bath

Large capacity

BOA200/310

Temperature control range

RT+10°C~200°C
BOA200

RT+10°C~270°C
BOA310

Bath capacity

37L

Large capacity 37L oil bath with temperature control of up to 200/270°C



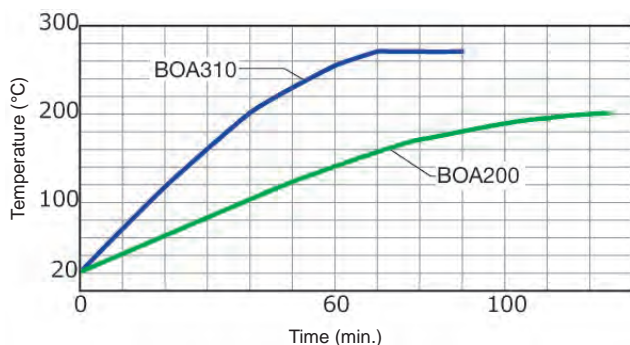
Operation and functions

- High temperature distribution accuracy by adopting jet stirring
- Advanced supportive functions
Standard equipped with external alarm output, temperature output terminal (4~20mA, 1~5V adjustable) RS485 communication function, key lock function, calibration offset function

Safety features

- 3 overheating preventors (Heater cut off automatically when reaching setting temperature + 6°C, overheating preventor, Individual overheating preventor)
- Standard equipped with emergency stop switch. Forces cut off of the overcurrent circuit in case of emergency
- Float switch for empty boil prevention
- Float switch for oil overflow prevention
- Glass control panel protect from liquid dripping
- Large operation lamp lighting during operation for attention
- Self diagnostic function, overheat prevention device, over current leakage breaker, key lock function, power failure compensation function

Temperature Rising Curve

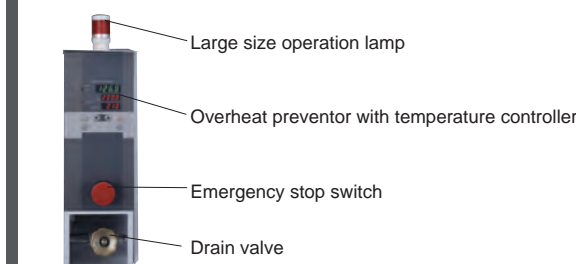


Operate with exhaust device such as fume hood

Specifications

Model	BOA200	BOA310
Temp. control range	RT+10~200°C	RT+10~270°C
Temp. adjustment accuracy	±0.1°C	
Temp. distribution accuracy	±0.2°C	±0.3°C
Max. temp. reaching time	120 min.	70 min.
Temp. control	PID control	
Sensor	W sensor: Pt100Ω(Temp. adjuster) + K Thermocouple (Overheat prevention function)	
Operation function	Fixed Operation	
Stirring method	Water Jet Stirring	
Heater	SUS316 Pipe Heater 2kW	SUS316 Pipe Heater 4.5kW
Safety device	Electric leakage breaker for over current protection, Self diagnostic function, Temp. sensor error, Heater error, Automatic overheat prevention function, Overheat preventor, Independent overheat preventor (Fixed 230°C for BOA200, Fixed 300°C for BOA310), Float switch detector for overflow oil, Float switch detector, Emergency stop switch	
Other functions	Drain valve, Large operation lamp, External alarm output terminal, Temp. output terminal (1~5V, 4~20mA adjustable), RS485 communication function, Key lock function, Power failure Protection Function, Calibration Offset Function, External Communication Adapter (optional)	
Oil bath dimensions	W296 x D340 x H270mm	
Bath capacity	37L	
External dimensions	W531 x D520 x H578 (oil bath depth397) mm	
Power source	AC115V 18.5A / AC220V 10A AC220V 21A	
Weight	~37kg	
Accessories	Shelf 1pc., lid 1pc.	

Control Panel



Recommended silicon oil

Silicone oil is one of the heat transfer media. Please select silicone oil (heat resistant dimethyl silicone oil, viscosity 100mm²/s [cSt] or less)

Maker	Toshiba Silicon (or equivalent)	
Product name	TSF458-50	TSF458-100
Recommended temp.	200°C or less	200°C~270°C
Appearance	Pale yellow transparent	Pale yellow transparent
Specific gravity (25°C)	0.961	0.963
Viscosity (25°C)	50mm ² /s (cSt)	100mm ² /s (cSt)
Volatilization (150°C, 24h)	0.3%	0.3%
Viscosity temperature coefficient	0.59	0.59
Flash point	325°C	342°C
Pour point	-50°C or less	-50°C or less
Viscosity increase rate (300°C, 168h)	40%	35%

Degradation rate (change in viscosity) of silicone oil is different at different temperatures.

When using TSF458-100 over 200°C, viscosity barely changes, 1000 hours at 250°C and 100 hours at 270°C. Please inquire with silicon oil maker when purchasing.