

Aluminum block Bath Mini-size Bath

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NEW

Constant temperature incubator/shaker
OD Monitor

For cell culture related products

Shaker

Mixer
Rotator
Stirrer

Bead beater
homogenizer
Ultrasonic
homogenizer

Aluminum
block Bath
Mini-size Bath

Water bath
Shaking Water bath
Immersion cooler

Hybridization
Incubator
Constant temperature
Chambers

Centrifugal
Concentrators
Cold Trap

Freeze dryers

Submarine
Electrophoresis apparatus
Blotting device for
hybridization

Constant-temperature
water circulating
system [Chiller]

Appendix

Aluminum block Bath

Dry Thermo Unit DTU-R



Cool Thermo Unit CTU-R



Dry Thermo Unit DTU-Mini



Cool Thermo Unit CTU-Mini



Dry Thermo Unit DTU-1BN



Dry Thermo Unit DTU-2BN



Dry Thermo Unit DTU-1CN

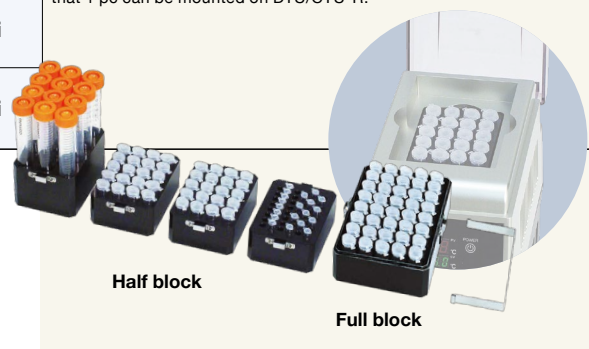


Dry Thermo Unit DTU-2CN



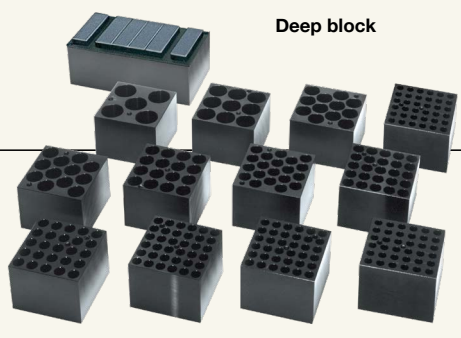
Prompt temp. transition with thin block. Cooling type is also available.

Page	Model	Compatible with various vessels by exchanging optional blocks.
P.114	DTU-R	0.2 (8-Tube strip is included)/0.5/1.5/2.0 mL Microtubes, Microplates, PCR plates 15 mL Disposable centrifuge tubes, 5 mL Eppendorf tubes, Micro vials. Blocks compatible with φ16.5 mm Test tubes are available.
P.114	CTU-R	
P.115	DTU-Mini	1 pc "Half block" can be mounted on DTU/CTU-Mini and 2 pcs "Half block" mounted on DTU/CTU-R. "Full block" is a thin type of block that 1 pc can be mounted on DTU/CTU-R.
P.115	CTU-Mini	



Deep type block with large capacity. Compatible with nitrogen gas spray.

Page	Model	Compatible with various vessels by exchanging optional blocks.
P.116	DTU-1BN	"Deep block" compatible with 0.5/1.5/2.0 mL Microtubes, 15 mL/50 mL Disposable and various dia. of Test tubes. 1 pc can be mounted on DTU-1BN/1CN and 2 pcs mounted on DTU-2BN/2CN (common to all models). Also, blocks compatible with Microplates/Slide glasses dedicated DTU-2BN/2CN are available.
P.116	DTU-2BN	
P.116	DTU-1CN	
P.116	DTU-2CN	



Mini-size Bath


e-IceBucket EIB




e-CoolingBucket ECB




e-HeatingBucket EHB



e-ThermoBucket ETB



e-FreezingBucket EFBN

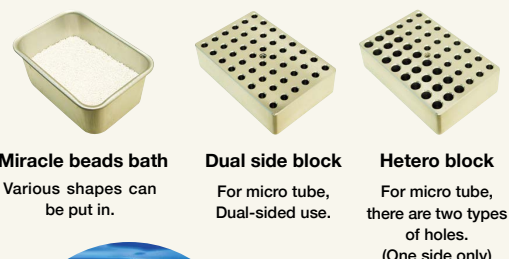


e-ThermoBucket WTB



Focuses on Easy and Usability. Compatible with Beads, Blocks, and Water.

Page	Model	Enables to use Miracle beads, Aluminum blocks, and Water properly according to the application and vessels.
P.120	EIB	e-Bucket series has unique features compatible with three types of heat medium. "Miracle beads bath", "Hetero block", and "Dual side block" can be selected according to the container. "Water" can be used in WTB only when optional shaking unit is used.
P.120	ECB	
P.120	EHB	
P.120	ETB	
P.120	EFBN	
P.122	WTB	

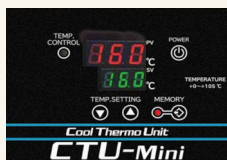


How to use as a Water bath (Other than EFBN)

NEW

	Features	Applications	Cooling method	Temp. control accuracy	Temperature range	Page
	<ul style="list-style-type: none"> •Simple operation for easy and safe use by everyone •For 2 pcs "Half block" and 1 pc "Full block" 	<ul style="list-style-type: none"> •Enzyme reactions •Heat denaturation of DNA and RNA 	-		•+ 5°C above Room temperature to + 105°C	P.114
	<ul style="list-style-type: none"> •Simple operation for easy and safe use by everyone •For 2 pcs "Half block" and 1 pc "Full block" •Possible for Temp. control from 0°C [CTU-R] 	<ul style="list-style-type: none"> •DNA Ligation at low temp. •Enzyme reactions •Heat denaturation of DNA and RNA 	✓ Peltier element		•0°C to + 105°C	P.114
	<ul style="list-style-type: none"> •For 1 pc "Half block". Changeable block (Optional) •Easy to use, Frequently used Temp. can be memorized 	<ul style="list-style-type: none"> •Enzyme reactions and Heat denaturation of DNA and RNA •Incubation, etc. in ELISA 	-	•±0.1°C to ±0.2°C	•+ 3°C above Room temperature to + 95°C above Room temperature (*)	P.115
	<ul style="list-style-type: none"> •For 1 pc "Half block". Changeable block (Optional) •Easy to use, Frequently used Temp. can be memorized •Possible for Temp. control from 0°C 	<ul style="list-style-type: none"> •Enzyme reactions and Heat denaturation of DNA and RNA •DNA Ligation at low temp. •Incubation, etc. in ELISA 	✓ Peltier element		•30°C below Room temperature to + 85°C above Room temperature (*)	P.115

(*)The settable temperature range is 0°C to +105°C.



Simple operation, Compact sized (Mini)

As memory setting can be made, the frequently used temp. can be invoked. The footprint is about 40% of our conventional one.

	Features	Applications	Cooling method	Temp. control accuracy	Temperature range	Page
	<ul style="list-style-type: none"> •For 1 pc "Deep block", Changeable block (Optional) •With Up to 110°C 	<ul style="list-style-type: none"> •Enzymatic reactions, Heat denaturation of DNA and RNA •Hydrolytic reaction of Sugar, Protein, Fatty acid, etc. •Concentration of Solvent with Nitrogen gas spraying (Optional) 	-	•Below ±0.1°C	•+ 5°C above Room temperature to + 110°C	P.116
	<ul style="list-style-type: none"> •For 2 pcs "Deep block", Changeable block (Optional) •With Up to 110°C 				•+ 5°C above Room temperature to + 200°C	P.116
	<ul style="list-style-type: none"> •For 1 pc "Deep block", Changeable block (Optional) •With Up to 200°C •With Temp. output 				P.116	
	<ul style="list-style-type: none"> •For 2 pcs "Deep block", Changeable block (Optional) •With Up to 200°C •With Temp. output 				P.116	



Concentration of Solvent with Nitrogen gas spraying. (Evaporation Head)

Nitrogen gas is blown while heating the sample with DTU-1/2 series to accelerate the evaporation of the solvent. Insert the nozzle for the same qty. as the sample and then fix by turning the chuck of root in use. The gas blowout at the place not used can be stopped by the stopper. Blocks for vials dedicated to concentration drying are also available.

	Features	Applications	Cooling method	Temp. control accuracy	Temperature range	Page
	<ul style="list-style-type: none"> •Substitute for Ice bucket 	•Low temperature DNA ligation	✓ Peltier element	•Below ±1.0°C	•+3°C only	P.120
	<ul style="list-style-type: none"> •For Low Temp. range 	•Low temperature DNA ligation	✓ Peltier element		•+ 3°C to + 20°C	P.120
	<ul style="list-style-type: none"> •For medium to high Temp. range 	•Enzymatic reactions, Heat denaturation of DNA and RNA	-		•Around 30°C to 70°C	P.120
	<ul style="list-style-type: none"> •For low to high Temp. range 	•Low temperature DNA ligation	✓ Peltier element		•+ 3°C to + 70°C	P.120
	<ul style="list-style-type: none"> •For below freezing to low temperature range •Cold Shock and Low temp. response experiment 	•Cold Shock and Low Temp. response experiment	✓ Peltier element		•-10°C to + 20°C	P.120
	<ul style="list-style-type: none"> •For low to high Temp. range •Used also as a constant temp. water bath and a block water bath •Energy saving with Peltier, Antifreeze is unnecessary even at 4°C •Also used as a shaking water bath combined with the WTB-ShakerUnit 	<ul style="list-style-type: none"> •Incubation and preservation of samples and reagents, Enzyme reaction •Low temperature DNA ligation •Temp. control for Serum inactivation and pH adjustment object 	✓ Peltier element	•Within ±0.1°C to ±0.2°C (Other than beads bath)	•+ 4 to + 70°C (Other than beads bath)	P.122



Shaking unit (For EIB/ECB/EHB/ETB, Optional) --> P.121

Water can be used in EIB/ECB/EHB/ETB only when optional shaking unit is used.



Shaking unit (For WTB, Optional) --> P.123

Water can be used in WTB as standard. Dedicated shaking unit is also available.

Constant temperature incubator/shaker OD Monitor

For cell culture related products

Shaker

Mixer Rotator Stirrer

Bead beater homogenizer Ultrasonic homogenizer

Aluminum block Bath Mini-size Bath

Water bath Shaking Water bath Immersion cooler

Hybridization Incubator Constant temperature Chambers

Centrifugal Concentrators Cold Trap

Freeze dryers

Substrate Electrophoresis apparatus Blotting device for hybridization

Constant-temperature water circulating system [Chilled]

Appendix

NEW

Dry Thermo Unit DTU-R/Cool Thermo Unit CTU-R

The aluminum block Bath that heats and cools Microtubes, Centrifuge tubes, etc. Fast temp. transition with thin block. Cooled-type CTU with CFC-free.

• "Guide to custom-made aluminum block" --> P.119



DTU-R CTU-R
Aluminum blocks (Optional) for use



Features

- Simple operation for easy and safe use by everyone
- For 2 pcs "Half block" and 1 pc "Full block"
- Possible for Temp. control from 0°C [CTU-R]

Applications

- DNA Ligation at low temp. [CTU-R]
- Enzyme reactions
- Heat denaturation of DNA and RNA

Simple operation

There are no complicated operations such as program functions or timers, so anyone can easily set and operate the system.

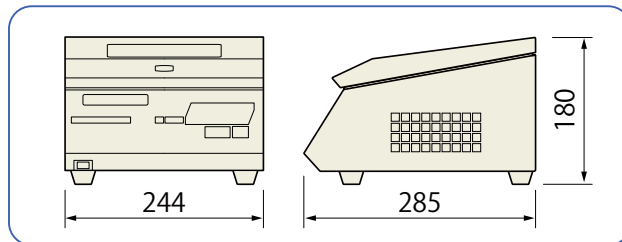
Electronic cooling with Peltier element [CTU-R only]

CTU-R uses electronic cooling with Peltier elements, eliminating the need to inspect for refrigerant gas leaks.

Memory functions

A memory function allows you to quickly recall frequently used temperatures.

Dimensions



Please prepare an electrical adapter compatible with your country for use.

Model	DTU-R	CTU-R
Ambient temperature	+ 5°C to + 30°C (*1)	
Temperature range	+ 5°C above Room temperature to + 105°C (*2)	0°C to +105°C (*3)
Temp. control accuracy	±0.1°C to ±0.2°C (*4)	
Capacity	Half block x 2 pcs or Full block x 1 pc	
Temp. Display	Digital	
Heating/Cooling method	Heater, Heat dissipation by fan	Peltier element
Safe devices	Fuse, Overvoltage/Overcurrent/Overheat protection	
Safe protections	Non-volatile memory error, Sensor error Sample protection (High temp.), Sample protection (Low temp.: CTU-R only)	
Dimensions (WxDxH)/Weight	244 x 285 x 180 mm, Approx. 6 kg (DTU-R), Approx. 5.5 kg (CTU-R)	
Power supply	AC 100 to 240 V	
Standard accessories	Power cord, Hook handle, Fuse (built-in fuse holder)	

(*1)The specifications may not be met when the hood is open, ambient above 30°C, or in low-temperature environment. (*2)The maximum operating temperature is 80°C above Room temperature. (*3)The lowest operating temperature is 30°C below Room temperature when cooling and the maximum is 80°C above Room temperature. (*4)Values are for an operating temperature around +25°C.

Optional parts: Half block for Microtubes

Model	Capacity	Hole depth	Dimensions/Remarks
OB-0648	0.1/0.2 mL x 48 pcs (8-Tube Strip)	15 mm	67.5 x 93 x 35H mm (50H mm) Some tubes may not be closely contacted to the holes depending on those sizes. Self-stand tubes cannot be used.
OB-0835	0.5 mL x 35 pcs	24.5 mm	
OB-1120A	1.5 mL x 20 pcs	34 mm	
OB-1120B	2.0 mL x 20 pcs	34 mm	
OB-1515	5.0 mL x 6 pcs + 1.5 mL x 8 pcs	48 mm 34 mm	

Optional parts: Half block for Micro Vials

Model	Capacity	Hole depth	Dimensions
OB-1220	1.5/2.0 mL x 20 pcs	25 mm	67.5 x 93 x 35H mm

Optional parts: Half block for Disposable centrifuge tubes

Model	Capacity	Hole depth	Dimensions
OB-1612L (*1)	15 mL x 12 pcs (*2)	48 mm	67.5 x 93 x 50H mm

Optional parts: Half block for Test tubes

Model	Capacity	Hole depth	Dimensions
OB-1712L (*1)	φ16.5 mm x 12 pcs	48 mm	67.5 x 93 x 50H mm

(*1)The lid cannot be closed while in operation, and the specifications of the temperature range and temperature control accuracy may not be met. (*2)Eppendorf 5 mL tube (0030 119) can also be used.

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TAITEC [General Catalog]

Optional parts: Full block for Microtubes

Model	Capacity	Hole depth	Dimensions
OB-1140	1.5 mL x 40 pcs	34 mm	135.5 x 93 x 35H mm

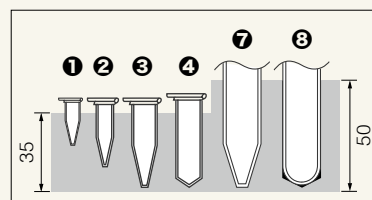
Optional parts: Full block for Microtubes/PCR plate

Model	Capacity	Hole depth	Dimensions
OB-0696 (*1)	0.1/0.2 mL x 96 pcs or PCR plate x 1 pc	14 mm	135.5 x 93 x 35.5H mm

(*1)Some PCR plates cannot be used. Thus, check if it can be used in advance.

Hole shape and fit condition of each vessel

The fit of ⑩ is similar to ③, and ① is almost the same as ① (slightly shallower). Note that ⑨ on the right page cannot be used with DTU/CTU-R.



Constant temperature incubator/shaker
OD Monitor
For cell culture related products
Shaker
Mixer
Rotator
Stirrer
Bead beater
homogenizer
Ultrasonic homogenizer
Aluminum block Bath
Mini-size Bath
Water bath
Shaking Water bath
Immersion cooler
Hybridization
Incubator
Consistent temperature
Chambers
Centrifugal
Concentrators
Cold Trap
Freeze dryers
Substrate
Electrophoresis apparatus
Blotting device for hybridization
Constant-temperature
water circulating
system [Chiller]
Appendix

Dry Thermo Unit DTU-Mini/Cool Thermo Unit CTU-Mini

The compact-sized aluminum block bath that heats and cools Microtubes and Centrifuge tubes. Fast temp. transition with thin block. Cooled-type CTU with CFC-free.

•"Guide to custom-made aluminum block" --> P.119

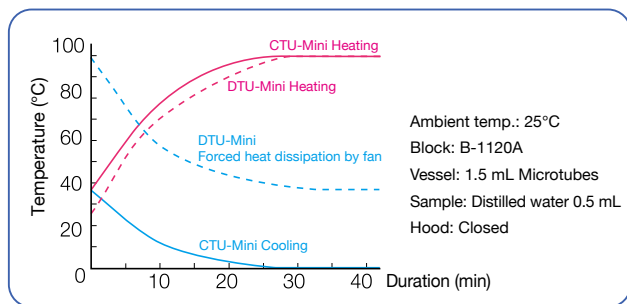
Features

- For 1 pc "Half block". Changeable block (Optional)
- Easy to use, Frequently used temp. can saved in the memory
- Possible for Temp. control from 0°C [CTU-Mini]

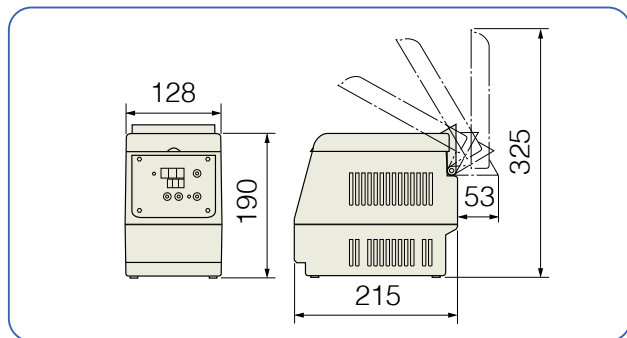
Applications

- Enzyme reactions and Heat denaturation of DNA and RNA
- DNA Ligation at low temp. [CTU-Mini]
- Incubation, etc. in ELISA

Example of Temperature transition time



Dimensions



DTU-Mini



CTU-Mini



[CTU-mini only]

Using with Aluminum blocks (Optional)

Model	DTU-Mini	CTU-Mini
Settable temperature range	0°C to +105°C	
Temperature range (*)	+ 3°C above Room temperature to + 95°C above Room temperature	+ 30°C below Room temperature to + 85°C above Room temperature
Temp. control accuracy (*)	±0.1°C to ±0.2°C (Set per 0.1°C)	
Capacity	Half block × 1 pc	
Temp. transition time at 25°C (Left figure for details) (*)	37°C --> 70°C: Approx. 10 min 70°C --> 37°C: Approx. 25 min	37°C --> 70°C: Approx. 10 min 37°C --> 4°C: Approx. 20 min
Temp. Display/Other functions	Digital (Preset/Current value), Temperature Memory × 1	
Heating/Cooling method	Heater, Heat dissipation by fan	Peltier element
Safe devices/protections	Sample protection (High/Low temp.), Sensor error, Non-volatile memory error, Automatic tuning error, Alarm setting error, Fuse (inside)	
Dimensions (W×D×H)/Weight	128 × 215 × 190 mm, Approx. 1.6 kg (Block is not included)	
Power supply	AC100V-240V/1.5A (universal power supply)	
Standard accessories	Block extraction hook handle × 1 pc (Blocks are sold separately)	

(*)The specifications may not be met when the hood is open and/or ambient 30°C.

Optional parts: Half block for Microtubes

Model	Capacity	Hole depth	Dimensions/Remarks
OB-0648	0.1/0.2 mL × 48 pcs (8-Tube Strip)	15 mm	67.5 × 93 × 35H mm (50H mm) Some tubes may not be closely contacted to the holes depending on those sizes. Self-stand tubes cannot be used.
OB-0835	0.5 mL × 35 pcs	24.5 mm	
OB-1120A	1.5 mL × 20 pcs	34 mm	
OB-1120B	2.0 mL × 20 pcs	34 mm	
OB-1515	5.0 mL × 6 pcs + 1.5 mL × 8 pcs	48 mm / 34 mm	

Optional parts: Half block for Micro Vials

Model	Capacity	Hole depth	Dimensions
OB-1220	1.5/2.0 mL × 20 pcs	25 mm	67.5 × 93 × 35H mm

Optional parts: Half block for Disposable centrifuges

Model	Capacity	Hole depth	Dimensions
OB-1612L (*)	15 mL × 12 pcs (*)	48 mm	67.5 × 93 × 50H mm

Optional parts: Half block for Test tubes

Model	Capacity	Hole depth	Dimensions
OB-1712L (*)	φ16.5 mm × 12 pcs (*)	48 mm	67.5 × 93 × 50H mm

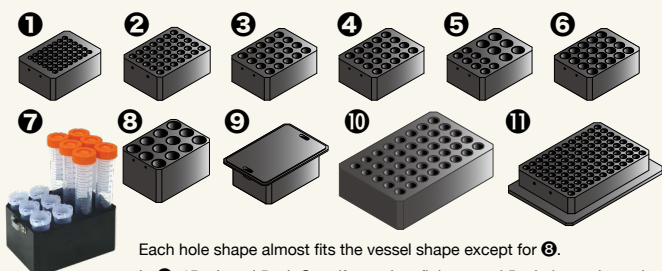
Optional parts: Half block for Microplate (for Mini)

Model	Capacity	Hole depth	Dimensions
OB-0001	Flat bottom × 1 pc (*)	-	77 × 116 × 39H mm

(*)The hood cannot be closed during use, and the specifications of the temperature range and temperature control accuracy may not be met. (*)Eppendorf Safe-Lock Tubes can be used. (*)The temperature transfer is inferior in Round bottom Microplates.

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Shape of each block of optional parts



Each hole shape almost fits the vessel shape except for ⑨.
In ⑦, 15 mL and 5 mL Centrifuge tubes fit in around 5 mL the scale marked.

NEW

Constant temperature incubator/shaker OD Monitor

For cell culture related products

Shaker

Mixer Rotator Stirrer

Bead beater homogenizer Ultrasonic homogenizer

Aluminum block Bath Mini-size Bath

Water bath Shaking Water bath Immersion cooler

Hybridization incubator Constant temperature Chambers

Centrifugal Concentrators Cold Trap

Freeze dryers

Submarine Electroporosis apparatus Blotting device for hybridization

Constant-temperature water circulating system [Chiller]

Appendix

Dry Thermo Unit DTU-1BN/2BN/1CN/2CN

The aluminum block Bath that heats and cools Microtubes, Centrifuge tubes, and Test tubes. The block enables vessels to be inserted deeply, which allows for the temp. control accuracy like a Constant temperature water bath. Compatible with the nitrogen gas spraying unit.

•"Guide to custom-made aluminum block" --> P.119



DTU-1CN

DTU-2BN

Using with Aluminum blocks (Sold separately)

Model	DTU-1BN	DTU-2BN	DTU-1CN	DTU-2CN
Temperature range	+ 5°C above Room temperature to +110°C		+ 5°C above Room temperature to + 200°C	
Temp. control accuracy	Below ±0.1°C (Set per 0.1°C)			
Capacity	1BN/1CN: Deep block × 1 pc 2BN/2CN: Deep block × 2 pcs			
Other functions	Automatic tuning, ON/OFF timer (1 min to 99 h 59 min), Setting time notification timer, Setting temp. reaching notification buzzer, Temp. memory × 3, temp. Output (DC 0 V to 1 V: 1CN/2CN) (*)			
Temp. Display	Digital (Preset/Current value)			
Heater	100 W	150 W	180 W	250 W
Safe devices/ protections	Fuse, Sensor open/short circuit alarm, High/Low temp absolute value alarm, Memory error, Automatic tuning error			
Dimensions (W×D×H)/ Weight	1BN/1CN: 210 × 318 × 130 mm, Approx. 4 kg 2BN/2CN: 318 × 318 × 130 mm, Approx. 6 kg			
Power supply	AC100V / 1.3A (Need a step-down transformer)	AC100V / 1.8A (Need a step-down transformer)	AC100V / 2A (Need a step-down transformer)	AC100V / 2.8A (Need a step-down transformer)
Standard accessories	Block extraction hook handle × 1 pc (Blocks are sold separately)			

(*)The current temperature can be outputted (*Alarm Out Cable AOC-2* is required for use).

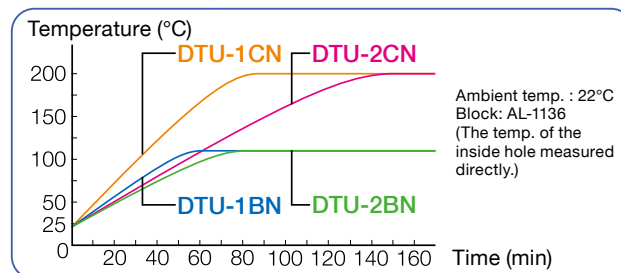
Features

- For "Deep block". Changeable block (Optional)
- "BN" with Up to 110°C, "CN" with Temp. output and Up to 200°C
- Equipped Temp. memory and Compatible with the Nitrogen gas spraying unit

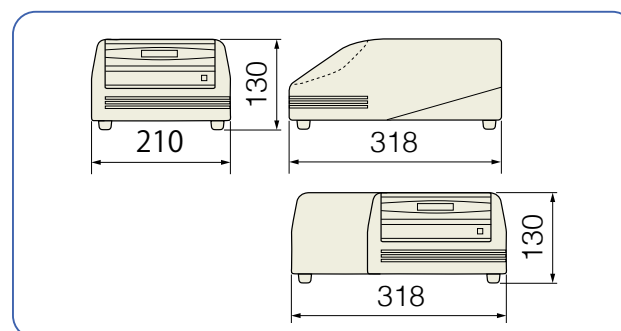
Applications

- Enzymatic reactions, Heat denaturation of DNA and RNA
- Hydrolytic reaction of Sugar, Protein, Fatty acid, etc.
- Concentration of Solvent with Nitrogen gas spraying (Optional)

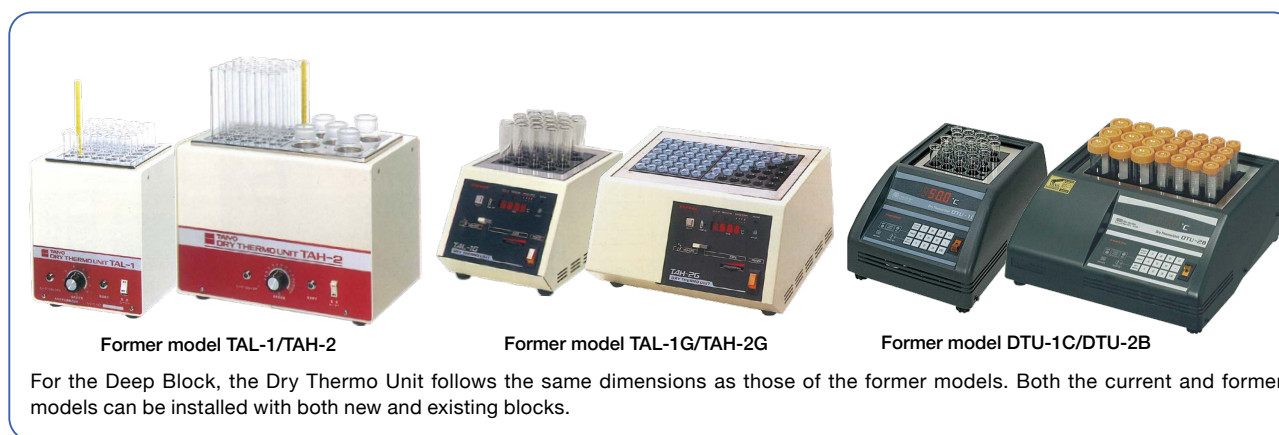
Examples of Temperature transition time



Dimensions



Compatibility with former models



Former model TAL-1/TAH-2

Former model TAL-1G/TAH-2G

Former model DTU-1C/DTU-2B

For the Deep Block, the Dry Thermo Unit follows the same dimensions as those of the former models. Both the current and former models can be installed with both new and existing blocks.

NEW

Constant temperature incubator/shaker
OD Monitor

For cell culture related products

Shaker

Mixer
Rotator
StirrerBead beater
homogenizer
Ultrasonic
homogenizerAluminum
block Bath
Mini-size BathWater bath
Shaking Water bath
Immersion coolerHybridization
Incubator
Consistent temperature
ChambersCentrifugal
Concentrators
Cold Trap

Freeze dryers

Substrate
Electrophoresis apparatus
Blotting device for
hybridizationConstant temperature
water circulating
system (Chiller)

Appendix

Optional parts

Optional parts: Deep block for Disposable centrifuge tubes

Model	Capacity	Hole depth	Dimensions
0AL-1616F	15 mL × 16 pcs	70 mm	108 × 108 × 80H mm
2AL-2909F	50 mL × 9 pcs		
3AL-5011F	15 mL × 8 pcs +50 mL × 3 pcs		

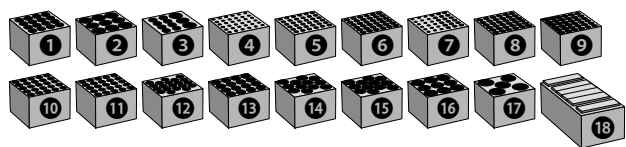
Optional parts: Deep block for Microtubes

Model	Capacity	Hole depth	Dimensions/Remarks
3AL-0836	0.5 mL × 36 pcs	25 mm	108 × 108 × 80H mm Some tubes may not be closely contacted to the holes depending on their sizes. Self-stand tubes cannot be used.
5AL-1136	1.5 mL × 36 pcs	35 mm	
5AL-1136B	2.0 mL × 36 pcs	39 mm	
7AL-8136	0.5 mL × 18 pcs	25 mm	
	+ 1.5 mL × 18 pcs	35 mm	

Optional parts: Deep block for Microplate/Microscope slide (for 2BN/2CN)

Model	Capacity	Dimensions
18AL-96MP	Flat bottom × 1 pc (*) or Microscope slide × 6 pcs	108 × 216 × 80H mm

(*)The temperature transfer is inferior in Round bottom Microplates. Use the Flat bottom Microplates.



Optional parts: Deep block for Vials (for Concentrating Drying)

It has a slit on the side for easily checking the degree of evaporation when Nitrogen gas is sprayed with EN1. Further, it can easily be checked with the Raising block.

Model	Capacity/Remarks
19AL-1336V	1.5/2 mL × 36 pcs (φ12 × 32H mm), Dimensions 108 × 108 × 80H mm
20AL-1525V	4 mL × 25 pcs (φ15 × 45H mm), Dimensions 108 × 108 × 80H mm
21AL-2412V	10 mL × 12 pcs (φ22.5 × 46H mm), 18 mL can also be used (*), Dimensions 108 × 108 × 80H mm
22AL-0030V	"Raising block" enables easily checking inside vials, Dimensions 108 × 108 × 80H mm

(*)The vials fit about half the height of those in the hole. •In consideration of the dimensional errors, the hole dia. is slightly larger.

Optional parts: Heat-proof Hood for DTU

Model	Applicable to	Usable temp.	Applicable vessels	Remarks
PF-1B	DTU-1BN	Max. 110°C at the setting of DTU	Test tubes (Below 120 mm) 15/50 mL Disposable centrifuge tubes, etc.	Dimensions 170 × 160 × 85H mm, Max height inside Chamber 60 mm
PF-2B	DTU-2BN			



Optional parts: Evaporation Head EN1 series

Nitrogen gas spraying unit used in combination with DTU-1 and 2, 1 set of EN1 for DTU-1, and 2 sets of EN1 for DTU-2. It is used for concentration of Solvent with setting Test tubes, Vials, and Block for Vials (Optional).

Correspondence table

Model	Nozzle	Applicable to	Applicable vessels outer dia.
EN1-36	36	DTU-1BN DTU-2BN (*) DTU-1CN DTU-2CN (*)	φ8, 11, 12, 13 mm
EN1-25	25		φ15, 16.5 mm
EN1-20	20		φ18 mm
EN1-16 (*)	16		φ21 mm
EN1-12 (*)	12		φ24, 25 mm
EN1-9 (*)	9		φ30 mm
EN1-5 (*)	5		φ35 mm

(*)2 sets (Different models mixed) can be attached. (*)Each gas can be stopped by attaching the accessory stopper instead of the nozzle. (*)Custom made •Nozzles are individually available [SUS Needle set for EN (10 pcs)]

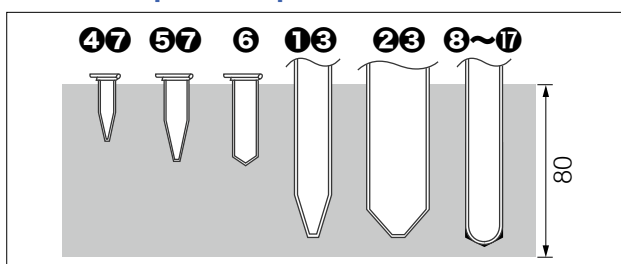
•Disposable nozzles are also available [PP Needle set for EN (20pcs)]

Optional parts: Deep blocks for Test tubes

Model	Capacity	Hole depth	Dimensions/Remarks
3AL-1236	φ12 mm × 36 pcs	75 mm	108 × 108 × 80H mm The hole bottom is not Round shaped, but Mortar shaped. See the below figure for details.
3AL-1336	φ13 mm × 36 pcs		
3AL-1525	φ15 mm × 25 pcs		
3AL-1625	φ16.5 mm × 25 pcs		
3AL-1820	φ18 mm × 20 pcs		
3AL-2116	φ21 mm × 16 pcs		
3AL-2412	φ12 mm × 24 pcs		
3AL-2512	φ25 mm × 12 pcs		
3AL-3009	φ30 mm × 9 pcs		
3AL-3505	φ35 mm × 5 pcs		

•We can also manufacture custom-shaped blocks according to the vessels. Please see P.119 for details.

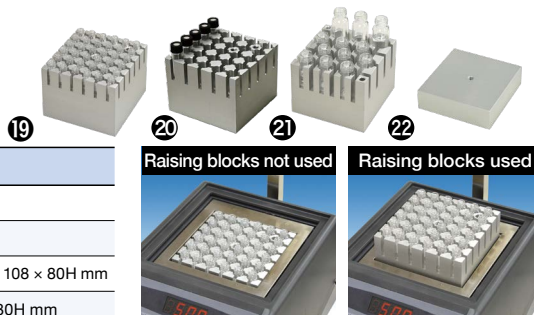
The hole shapes of Deep blocks



The hole shapes and fit conditions are as the above figure.

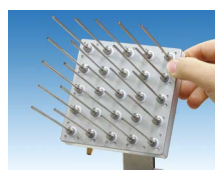
Each hole shape of a vessel almost fits to that of a Deep block except for 6 to 17.

In 1 and 3, 15 mL Centrifuge tubes fits in around 8 to 9 mL the scale marked, 2 and 5 fit in around 30 to 35 mL the scale marked.



Combination e.g.: DTU-2CN
+ Evaporation head EN1-25 × 2 pcs *
+ Deep block for Vials AL-1525V × 2 pcs *
+ Raising block AL-0030V × 2 pcs

* Possible to combine different types



Model	EN1 series
Applicable to	DTU-1BN/2BN/1CN/2CN (*)
Spray nozzle length	Effective length 88 mm (Nozzles are made of stainless steel)
Number of Spray nozzle	5 pcs to 36 pcs (depends on the model) (*)
Gas supply connection Dia.	Inner dia. φ6 mm Hose or Outer dia. φ6 mm Pisco tube
Head Dimensions (W×D×H)	105 × 105 × 15 mm

•Nitrogen gas Generator "N₂ GENESIS 200" where Nitrogen gas cylinder is unnecessary. --> P.051

NEW

Constant-temperature incubator/shaker
OD Monitor

For cell culture related products

Shaker

Mixer Rotator
Stirrer

Bead beater
homogenizer
Ultrasonic

Aluminum block Bath
Mini-size Bath

Water bath
Sparking Water bath
Immersion cooler

Hybridization Incubator
Constant-temperature Chambers

Centrifugal Concentrators
Cold Trap

Freeze dryers











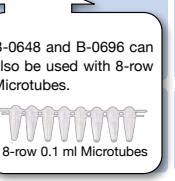




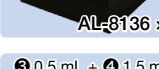
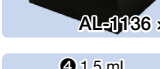
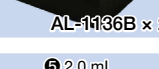
Substrate Electrophoresis apparatus
Blotting device for hybridization

Constant-temperature water-circulating system [Chilled]

Appendix

Guide for aluminum blocks for different type of vessels

Aluminum Blocks for Microtubes

						
						
	 <p>B-0648 and B-0696 can also be used with 8-row Microtubes.</p>					
						
Applicable vessels	① 0.1 mL · ② 0.2 mL	③ 0.5 mL	③ 0.5 mL + ④ 1.5 mL	④ 1.5 mL	⑤ 2.0 mL	④ 1.5 mL · ⑥ 5.0 mL



① 0.1 mL ② 0.2 mL

④ 1.5 mL

⑤ 2.0 mL ⑥ 5.0 mL

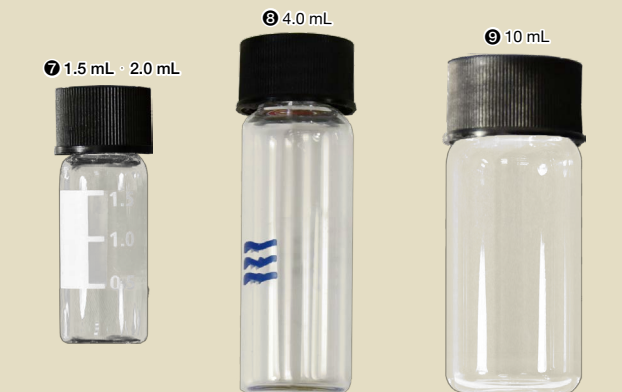
Aluminum block for Disposable centrifuge tubes





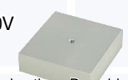






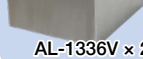

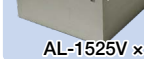
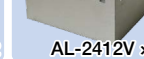
⑩ 15 mL ⑪ 50 mL






5 mL Microtubes with screw caps can be used as well as 15 mL Disposable centrifugal tubes.

Aluminum blocks for Micro Vials



⑦ 1.5 mL · 2.0 mL ⑧ 4.0 mL ⑨ 10 mL

		
		For the following three Deep blocks. "Raising block" enables easily checking inside vials.
		
		
		

NEW

Constant temperature incubator shaker OD Monitor

For cell culture related products

Shaker

Mixer Rotator Stirrer

Bead beater homogenizer Ultrasonic homogenizer

Aluminum block Bath Mini-size Bath

Water bath Shaking Water bath Immersion cooler

Hybridization Incubator Consistent temperature Chambers

Centrifugal Concentrators Cold Trap

Freeze dryers

Substrate Electrophoresis apparatus Blotting device for hybridization

Constant temperature water circulating system [Chiller]

Appendix

NEW

Constant temperature incubator shaker OD Monitor

For cell culture related products

Shaker

Mixer Rotator Stirrer

Bead beater Ultrasonic homogenizer

Aluminum block Bath Mini-size Bath

Water bath Shaking Water bath Immersion cooler

Hybridization Incubator Constant temperature Chambers

Centrifugal concentrators Cold Trap

Freeze dryers

Substrate Electrophoresis apparatus Blotting device for hybridization

Constant-temperature water circulating system [Chiller]

Appendix

Aluminum blocks for Test tubes/Glass centrifuge tubes

Outer dia. of Test tubes/ Glass centrifuge tubes					

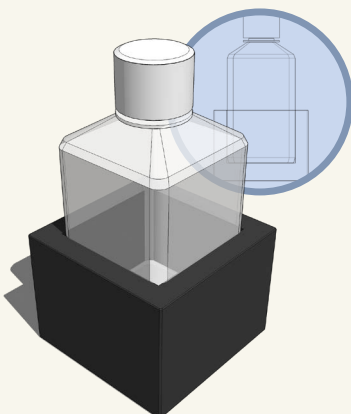
Guide for Custom-made aluminum blocks

Even for vessels that cannot be used with standard aluminum blocks, we can craft Custom-made aluminum blocks with various numbers, diameters, depths, and bottom-shaped holes.

Example of Custom-made blocks

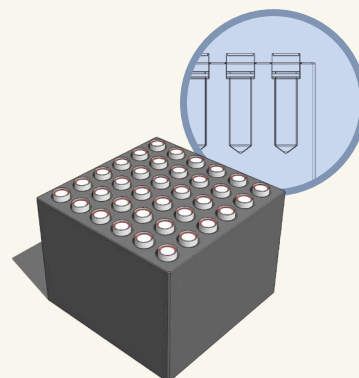
Aluminum block for 1 pc 500 mL square media bottle

Hole diameter: 75 mm × 75 mm
 Hole depth: 60 mm
 Hole bottom shape: Flat bottom
 Capacity: 1 pc



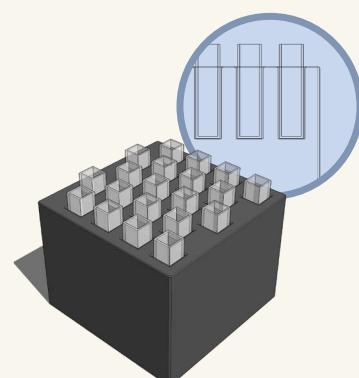
Aluminum block with screw lid 2 mL Microtubes fit until its cap.

Hole diameter: 11 mm (Min. dia. in hole 10.5 mm)
 Hole depth: 34 mm
 Hole bottom shape: Drill hole
 Capacity: 25 pcs



Aluminum block for square cells for the spectrophotometer

Hole shape: 12.5 mm × 12.5 mm
 Hole depth: 35 mm
 Hole bottom shape: Flat bottom
 Capacity: 20 pcs



We also designed various blocks other than these. Please contact us when you desire custom-made blocks.

e-Bucket series

CFC-free Mini-size Bath that can easily heat and cool Microtubes, etc. on bench top. User-oriented Miracle beads bath and aluminum block.



e-IceBucket EIB

e-CoolingBucket ECB

e-HeatingBucket EHB

e-ThermoBucket ETB

e-FreezingBucket EFBN

Features

- 5 models in the temp. range -10°C to +70°C
- CFC free and Operation at Low temperature (EHB for Heating only)
- User-oriented "Miracle beads bath (Optional: Except for the EFBN)"


Applications

- Ice bucket substitution [EIB], Enzyme reaction, etc.
- Low temperature DNA ligation [Except for EHB]
- Cold Shock and Low temp. response experiment [EFBN]



Model	EIB	ECB	EHB	ETB	EFBN
Temperature range	+3°C (Fixed)	+3°C to +20°C (*1)	Around +30°C to +70°C (*1,2,3)	+3°C to +70°C (*1,2,3)	-10°C to +20°C (*4)
Temp. control accuracy	Below ±1°C				
Standard Bath	Miracle beads bath (BMB-17)		Hetero block (BAL-8148)		-
Temp. Display	Digital				
Cooling/Heating method	Cooling with Peltier element		Heater	Heating/Cooling with Peltier element	Cooling with Peltier element
Safe devices/protections	Fuse, Overheat/Overcurrent/Overtoltage protection				
Dimensions (WxDxH)	170 × 240 × 220 mm				
Weight	Main unit: Approx. 2.2 kg + Miracle beads bath Approx. 1.8 kg		Main unit: Approx. 2.2 kg + Hetero block Approx. 1.2 kg		Main unit: Approx. 2.2 kg + Aluminum block
Power supply	AC100V-240V / 1A (universal power supply)				
Applicable Bath/Block	Miracle beads bath, Hetero block, Dual side block				4 kinds of Blocks (See details below)

(*1)The specifications may not be met the ambient temp. above 30°C or below 5°C. (*2)Miracle beads cannot be stably used over 50°C. The specifications may not be met below 20°C. (*3)When used as a water bath (eb-ShakerUnit used with) in EHB, the upper limit temp. is up to 50°C and ETB is up to 55°C. (ambient temp. 5°C to 30°C) (*4)The specifications may not be met the ambient temp. above 35°C or below 5°C.

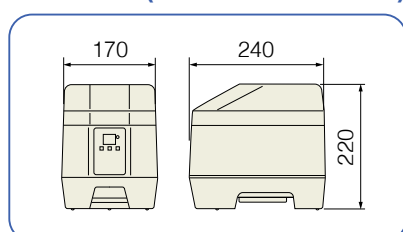
Optional parts: Miracle beads bath (for EIB/ECB/EHB/ETB)

Model	Capacity	Accessory beads	Bucket inner dimensions
 Miracle beads bath BMB-17 *Standard accessories in EIB/ECB	Tray with dia. 2 mm beads fully filled. Various shapes can be put in. The beads can be washed in water and autoclaved.	Diameter approx. 2 mm 1.7 kg	Opening 101 × 158 mm Bottom 94 × 143 mm Depth 74 mm





Optional parts: Aluminum block (for EIB/ECB/EHB/ETB)

Model	Capacity	Dimensions
 Dual side block BAL-8188	0.5 mL Microtube × 48 pcs or 1.5 mL Microtube × 40 pcs (One face 0.5 mL and the other 1.5 mL, Dual-sided use)	98 × 150 × 39 Hmm
 Hetero block BAL-8148 *Standard accessories in the EHB/ETB	0.5 mL Microtube × 24 pcs or 1.5 mL Microtube × 24 pcs (0.5 mL and 1.5 mL can be used simultaneously.)	98 × 150 × 39 Hmm

Dimensions (Common in all models)

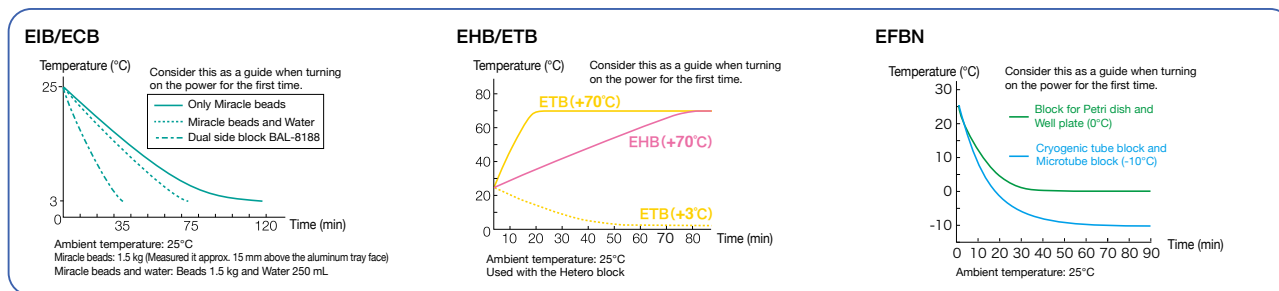


Optional parts: Aluminum block (for EFBN)

Model	Capacity	Dimensions
 Microtube block BAL-1120	1.5 mL Microtube × 20 pcs	67.5 × 93 × 35H mm
 Cryogenic tube block BAL-1320	2.0 mL Cryogenic tube × 20 pcs	67.5 × 93 × 35H mm
 Block for Petri dish BAL-6002	φ60 mm Petri dish × 2 pcs	84 × 136 × 43H mm
 Block for Well plate BAL-0001	Well plate × 1 pc	84 × 136 × 43H mm

•The outer dimensions are the same as those of aluminum blocks. Each comes with Styrofoam heat insulation (Approx. 100 × 150 × 45H mm).

Examples of Temperature transition time (EIB/ECB/EHB/ETB/EFBN) *See the specifications on the previous page.



eB-ShakerUnit

It is attached to the e-Bucket series EIB/ECB/EHB/ETB to enable it to be used as a shaking water bath. For when shaking is required in e-Bucket.

•Mini-size Bath "e-Bucket" series --> P.120 •Unit Water bath with Plastic water bath "Thermominder" series --> P.130/132

Features

- Combined with EIB/ECB/EHB/ETB for use
- Shaking speed 150 r/min, width 10 mm
- Spring net shaking platform is included

Applications

- Incubation such as Enzyme reaction
- Conditioned culture after Transformation of E. coli
- Incubation of dissolved culture medium

"e-Bucket" series (EIB/ECB/EHB/ETB) as a water bath

Required to use "e-Bucket" series except for WTB and EFBN as a shaking water bath. Shaking with this unit is effective for stirring the water in the tank to eliminate temp. bias. Note that Beads bath and Aluminum blocks cannot be used when this unit is combined. Use the Spring net shaking table (included).



Spring net shaking table (included)

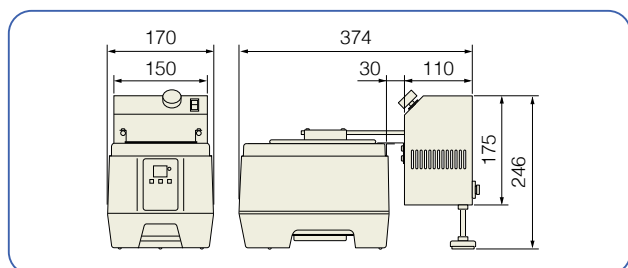
Effective use of Plastic Water bath C-type

To attach the "Plastic Water bath C-type" to the Unit water bath (130, 132 pages) with the attachments (PCA-1 *Optional) can make the "Thermominder" a shaking water bath.



Combined with Plastic water bath C-type (sold separately)

Dimensions (Combined with EIB/ECB/EHB/ETB)



Combined with the e-ThermoBucket ETB (Sold separately)

Model	eB-ShakerUnit
Applicable to	EIB, ECB, EHB, ETB (*1)
Shaking motion/speed	Reciprocal shaking, 30 to 150 r/min
Shaking width	10 mm
Capacity	1.5/2.0 mL Microtube × 20 pcs (approx. 30° tilted) (*2) 50 mL Disposable Centrifuge tubes × 4 pcs (approx. 30° tilted) (*3)
Platform size (W×D×H)	85 × 115 × 20 mm (Changeable height to Max. approx. 70 mm) (*3)
Maximum Load	Approx. 0.5 kg (Platform 0.29 kg is included)
Other function	Service outlet (Max. 14 A) × 1
Safe devices/protections	Fuse, Overcurrent/Overvoltage protection
Dimensions (W×D×H)	Main unit: 150 × 110 × 175 mm (Platform and Protrusions are not included) Combined: 170 × 374 × 246 mm
Weight	Approx. 3 kg (Combined: Approx. 5.2 kg)
Power supply	AC100V-240V / 1A (universal power supply)
Standard accessories	Spring net shaking platform × 1 pc, Aluminum tray × 1 pc

(*1) Cannot be used with the EFBN (*2) 24 pcs of Microtube can be loaded vertically to stand. (*3) When using long vessels such as a 50 mL Disposable centrifuge tube, raise the position of the Spring net of the platform (Default setting height 20 mm from the bottom plate. Changeable height: Max. approx. 70 mm). *Please note that the lid of the e-Bucket unit cannot be used when this unit is combined with the e-Bucket. Temp. range of EHB is up to 50°C and ETB is up to 55°C.

Optional accessories

Product Name/Model	Remarks
Plastic Water bath C-type	Min. Inner size: 180 × 320 × 155H mm, Heatproof temp.: 70°C
C-type Attachment PCA-1	For attachment of eB-ShakerUnit to Plastic Water bath C-type

NEW

Constant temperature incubator/shaker
OD Monitor

For cell culture related products

Shaker

Mixer Rotator Stirrer

Bead beater homogenizer Ultrasonic homogenizer

Aluminum block Bath Mini-size Bath

Water bath Shaking Water bath Immersion cooler

Hybridization incubator Constant temperature Chambers

Centrifugal Concentrators Cold Trap

Freeze dryers

Substrate Electrophoresis apparatus Blotting device for hybridization

Constant-temperature water circulating system [Chilled]

Appendix

e-ThermoBucket WTB

The industry's smallest electrical cooled water bath for heating and cooling. Even water at 4°C can be used. Also used as a block water bath and a miracle beads bath.

•"Deep block" --> P.117 •Shaking unit for WTB "WTB-ShakerUnit" --> P.123



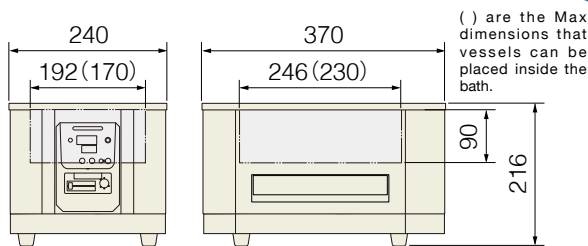
Features

- Used also as a constant temp. water bath and a block water bath
- Energy saving with Peltier and CFC Free
- Antifreeze is unnecessary even at 4°C
- Also used as a shaking water bath combined with the WTB-ShakerUnit

Applications

- Incubation and preservation of samples and reagents, Enzyme reaction
- Low temperature DNA ligation
- Temp. control for Serum inactivation and pH adjustment object

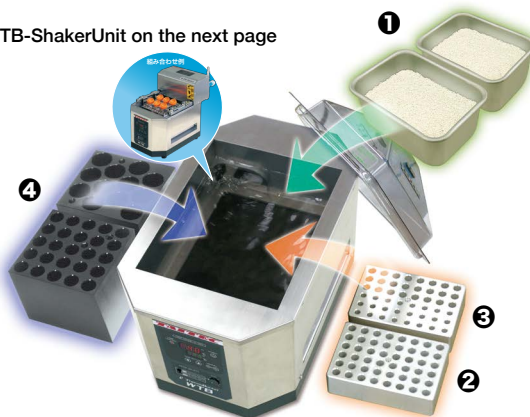
Dimensions (Common in all models)



Model	WTB
Temperature range	+ 4°C to + 70°C (*1, 2, 3)
Temp. control accuracy	±0.1 to 0.2°C
Capacity	70% water level for Water 3 L (Max. 2 L when WTB-ShakerUnit combined)
Temp. Display	Digital
Cooling/Heating method	Cooling/Heating with Peltier element
Other function	Stirrer bar (used with a constant temp. water bath)
Safe devices/protections	Fuse, Overheat/Overcurrent/Overvoltage protection, Sample protection (High/Low temp.), Non-volatile memory error, Sensor error, Automatic tuning error, Alarm setting error
Dimensions (WxDxH)/ Weight	240 x 370 x 216 mm (Lid is not included), Approx. 9 kg
Power supply	AC100V / 4A (Need a step-down transformer)
Applicable bath/blocks	Miracle beads bath, Hetero block, Dual side block, Deep block *2 pcs can be put in each.

(*1)The specifications may not be met the ambient temp. above 30°C or below 5°C. (*2)Miracle beads cannot be stably used over 50°C. The specifications may not be met below 20°C. (*3)Since the lid of the WTB-ShakerUnit unit cannot be used when this unit is combined with the WTB-ShakerUnit, Max. temp. will be 60°C and Min. temp. will be 20°C below Room temperature.

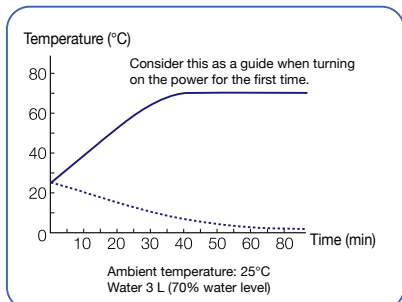
WTB-ShakerUnit on the next page



USER'S VOICE

This is useful because various blocks can be put inside, and it can be used as a water bath.

Examples of Temperature transition time



Optional parts: Miracle beads bath

Model	Capacity	Accessory beads	Bucket inner dimensions
①Miracle beads bath BMB-17 <small>*Standard accessories in EIB/ECB</small>	Any that can be placed inside the bath.	Diameter approx. 2 mm 1.7 kg	Opening 101 x 158 mm Bottom 94 x 143 mm Depth 74 mm

Optional parts: Aluminum block

Model	Vessels/Capacity	Dimensions/Remarks
②Dual side block BAL-8188	0.5 mL Microtube x 48 pcs or 1.5 mL Microtube x 40 pcs	98 x 150 x 39H mm
③Hetero block BAL-8148 <small>*Standard accessories in EHB/ETB</small>	0.5 mL Microtube x 24 pcs or 1.5 mL Microtube x 24 pcs	98 x 150 x 39H mm
④Deep block	Available for various vessels. See page 117 for details	

NEW

Constant temperature incubator/shaker
OD Monitor

For cell culture related products

Shaker

Mixer Rotator Stirrer

Bead beater homogenizer Ultrasonic homogenizer

Aluminum block Bath Mini-size Bath

Water bath Shaking Water bath Immersion cooler

Hybridization Incubator Constant temperature Chambers

Centrifugal Concentrators Cold Trap

Freeze dryers

Substrate Electrophoresis apparatus Blotting device for hybridization

Constant-temperature water circulating system [chiller]

Appendix

WTB-ShakerUnit

Attach this unit to the e-Bucket series WTB to realize a Mini-size shaking water bath that can control from low temp. to high temp. with "Water". Can easily drain with an equipped pump. With the Mini-size water bath WTB, it can chill" equipped pump.

•Mini-size Bath "e-ThermoBucketWTB" --> P.122

Features

- Combined with the Mini-size water bath WTB, it can chill
- Reciprocal shaking with 25 mm width, similar to "Bio Shaker"
- For experiments at temperatures below room temperature, even in small volumes

Applications

- Low-temp. culture of Protein expression E. coli
- Conditioned culture after Transformation of E. coli
- Enzyme reaction and Incubation of dissolved culture medium

CFC Free, From low temp to high temp. with "Water" realized



e-ThermoBucketWTB

Combination

+

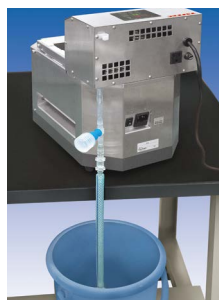
"Shaking" and
"Easily drain"



WTB-ShakerUnit

Energy saving and CFC free by electronic cooling with Peltier element. The conventional one requires antifreeze to prevent freezing of the heat exchange part when used at 7°C, whereas the WTB controls from 4°C (*20°C below Room temp.) with "Water".

Equipped with a Drainage pump



It is not equipped with a drain due to its construction. Use the Drainage pump of the WTB-ShakerUnit to drastically avoid the effort of troublesome drainage.

USER'S VOICE

Press it several times to start the drainage.
This is the principle of siphon!
It enables you to drain easier.



Exterior is Clean Stainless Steel

The exterior of the WTB and WTB-ShakerUnit are made of stainless steel. The inside bath of the WTB is Teflon treated that makes it easy to maintain cleanliness.

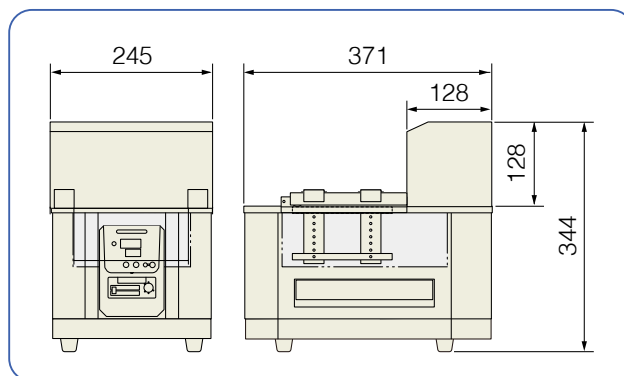


Combined with the e-ThermoBucket WTB

Model	WTB-ShakerUnit
Applicable to	WTB
Shaking motion/speed	Reciprocal shaking, 20 to 200 r/min
Shaking width	25 mm
Capacity	50 mL Disposable centrifuge tubes × 8 pcs (approx. 30° tilted) 250 mL Erlenmeyer flask/Medium bottle × 1 pc
Platform size (W×D×H)	170 × 150 × 80 mm
Maximum Load	Approx. 1 kg (Platform 0.5 kg is included)
Speed display	Digital
Other function	Speed memory × 1pc, Drainage pump, Service outlet (Max. 10 A)×1 pc
Safe devices/ protections	Fuse, Overcurrent/Overvoltage protection, Motor Overload protection, Speed limit error
Dimensions (W×D×H)	Main unit: 245 × 128 × 128 mm (Protrusions are not included) Combined: 245 × 371 × 344 mm
Weight	Approx. 4.2 kg (Combined: Approx. 13.2 kg)
Power supply	AC100V / 1A / Max.5A (Need a step-down transformer)
Standard accessories	Spring net shaking platform × 1 pc

(*)Increases according to the amount of service outlet use. Applied for only when using WTB as a water bath. The limitation of specs in WTB will occur when combined with this unit so be sure to refer and confirm the below specs and notes in WTB.

Dimensions (Combined with WTB)



Combined with the Mini-size Bath EFBN

•Mini-size Bath "EFBN" --> P.120
•Ultrasonic Homogenizer "VP-050N" --> P.108

Description of system configuration and optional parts

When the amount of bacteria liquid is large and ultrasonic crushing takes a long time, using ice for cooling may cause the vessel to float as it gradually melts. If a Mini-size bath is used instead of ice, the vessel can be maintained in a stable and fixed position during the crushing process.

①Mini-size bath EFBN

This is a compact Peltier-cooling tabletop aluminum block bath. By using an aluminum block (sold separately), it cools and stabilizes the vessel, eliminating the risk of contamination. The heat generated during ultrasonic crushing of 0.1 to 10 mL samples can be suppressed.

②Half block B-1515

Aluminum block for 1.5 mL Microtubes × 8 pcs and 5.0 mL Microtubes × 6 pcs

③Ultrasonic Homogenizer VP-050N

Small volume type for processing volumes from 0.1 to 10 mL. The system is equipped with simple auto-tuning that can be completed in 5 seconds and various operation modes according to the sample condition.

④Microchip (Oscillator)

Select the microchip that corresponds to the processing volume of the sample and the size of the vessel to be used.

⑤Stand and clamp for experiment (to be prepared by the customer)



Combination example
VP-050N + VP-MS02 + EFBN
(Prepare the stand separately.)

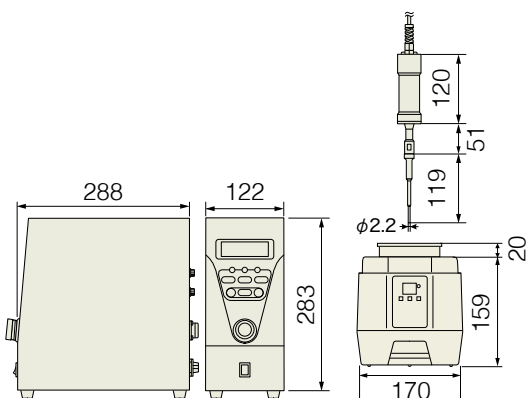
Model	EFBN
Temperature range	-10°C to + 20°C (*)
Temp. control accuracy	Within ±1°C
Temp. Display	Digital
Cooling/Heating method	Cooling with Peltier element
Safe devices/protections	Fuse, Overheat/Overcurrent/Overvoltage protection
Dimensions (W×D×H)	170 × 240 × 220 mm
Weight	Main unit: Approx. 2.2 kg + Aluminum block
Power supply	AC100V-240V / 1A (universal power supply)
Applicable Bath/Block	Dedicated Aluminum block (4 kinds of Blocks, See P.120.)

(*)The specifications may not be met the ambient temp. above 35°C or below 5°C.

Model	VP-050N
High Frequency Output	Max. 50 W
Transducer normal output	10 to 40 W
Oscillator frequency range	19.5 to 20.5 kHz
Tuning	Auto tuning
Operation mode	PWM operation: Automatic adjustment of output according to changes in viscosity of sample, etc. POW operation: Stable oscillation when viscosity and temperature changes are small
Other Functions	Timer operation (1 sec. to 120 min.) Programmed interval operation (ON: 3 to 60 seconds, OFF: 1 to 60 seconds)
Display	Output current value%, Output setting%, Output at oscillation start%, Oscillation frequency
Equipment Configuration	Main unit, converter (with integrated horn and oscillation switch)
Oscillation switch	Available on main unit and converter. (Optional foot switch can also be used.)
Dimensions (W×D×H)	122 × 288 × 283 mm
Weight	Approx. 4.5 kg
Power supply	AC100V / 1A (Need a step-down transformer)

•An optional step-type microchip (same type as for the former product VP-050) is required for use.
•The chip for the former VP-5S cannot be used. The chip for this product can be used with the former VP-5.
•The chip for this product cannot be used with the former VP-5.

Dimensions



Optional accessories

Product Name/Model	Remarks
φ2 mm Step-type Microchip VP-MS02	Processing volume 0.1 to 10 mL
φ3 mm Step-type Microchip VP-MS03	Processing volume 0.25 to 10 mL
φ6 mm Step type Microchip VP-MS06	Processing volume 2 to 10 mL
Foot switch VP-FS01	Same type as VP-300N
Half block B-1515	1.5 mL Microtubes × 8 pcs + 5.0 mL Microtubes × 6 pcs

•Microtubes (0.5/1.5/2.0 mL) available are φ2 mm and φ3 mm. •Each chip is made of titanium. Chips wear out with use and should be replaced as necessary. •Compatible with former products (VP-5S/15S/30S/60S). Refer to the instruction manual of your product to confirm applicable chips.