

Constant-temperature water circulating system [Chiller]

■ General Guide	.....166
■ Hot water circulator / High temperature circulator	
Hot water circulator HC-03/06/09/12/15/24	.....168
Heat exchanger TEX-25A	.....169
■ Chiller for open circuit	
Coolpomp CP-80R/150R	.....170
Coolnit CL-80R/150R/300N/600N	.....171
■ Energy saving stocked ice chiller	
Stock chiller YW-12	.....173
■ Constant temperature water bath with exocyclic coolnit bath	
Coolnit bath EL-8F/15F	.....174
Thermo supplier EZ-101/EZL-81F	.....175
■ [Compact CH series]	
■ Model Selection Guide for Compact CH series	.....176
Cooling pump CH-151AF/601A	.....178
Cooling pump CH-151BF/601B	.....179
Cooling pump CH-402B/602B/802B	.....180
Cooling pump CH-802BF	.....181
■ Pump units for Compact CH series	
Pump units (100V) P-11/21/310	.....182
Pump units (200V) P-320/420/520	.....182

■ [Simple Chiller series]	
■ Model Selection Guide for Simple Chiller series	.....184
■ Simple series	
Cooling pump CHA-500/900/1500/2200	.....186
Cooling pump CHW-900/1500/2200	.....187
■ [Large Chiller CH/Large inverter chiller CHV series]	
■ Model Selection Guide for CH/CHV series	.....189
■ Large inverter chiller CHV series: Water-cooled integrated type	
Cooling pump CHV-750W/1500W/2200W/3750W	.....190
■ Large chiller CH series: Water-cooled integrated type	
Cooling pump CH-6000W-18000W	.....191
■ Large inverter chiller CHV series: Air-cooled separate type	
Cooling pump CHV-750AS-6000AS	.....192
■ Large inverter CH series: Air-cooled integrated type, Outdoor use	
Cooling pump CH-1500ASO-7500ASO	.....193
■ Ultra low temperature circulator/Chiller unit for low temperature range	
Super cool SC-60	.....194
Chiller unit for low temperature range	.....194

Selection guide
Constant temperature incubator shaker CO ₂ incubator shaker Shaker
Mixer Rotator Stirrer
Bead beater homogenizer Ultrasonic homogenizer
Aluminum block bath Minimize bath
Water bath Shaking water bath Immersion cooler
Hybridization oven Constant temperature chamber
Centrifugal concentrator Cold trap
Freeze dryer
Electrophoresis and blotting apparatus
Constant temperature water circulating system [Chiller]
Appendix

For the heating control

Hot water circulator
HC series

High temperature circulator



For open circuit

Coolnit
CP series
CL series

Stocked ice chiller

Stock chiller



Water bath with exocyclic coolnit bath

Coolnit bath



Thermo supplier



Compact & portable

Standard
Compact CH
A-typePrecise
Compact CH
B-type

Simple & various options

Air-cooled
Simple seriesWater-cooled
Simple series

Large inverter chiller

Air-cooled
Large inverter
chiller
CHV seriesWater-cooled
Large inverter
chiller
CHV series

Large chiller

Air-cooled
Large chiller
CH series
(Outdoor use)Water-cooled
Large chiller
CH series

Ultra low temp.

Supercool



Circulation the hot water/Fluorine-based heat

Page	Model	Circulation	Heater output	Heating medium	Temp. range	Control accuracy
P.168	HC-03	Closed circuit	3.0kW	Tap water	+40°C ~ +80°C	±0.1°C
	HC-06		6.0kW			
	HC-09		9.0kW			
	HC-12		12.0kW			
	HC-15		15.0kW			
P.169	HC-24		24.0kW			
	TEX-25A		2.5kW	GALDEN HT270	+70°C ~ +200°C	±2.0°C

The line-up of chiller for open circuit (closed circuit)

Page	Model	Circulation	Compressor output	Cooling capacity (*)	Temp. range	Control accuracy
P.170	CP-80R	Open circuit	Air-cooled, 75W	approx. 140W	-10°C- Room temp.	±1.5- 2.0°C
	CP-150R		Air-cooled, 150W	approx. 270W		
P.171	CL-80R		Air-cooled, 75W	approx. 140W	-10°C- +70°C	±0.03- 0.3°C
	CL-150R		Air-cooled, 150W	approx. 270W		
	CL-300N		Air-cooled, 300W	approx. 410W	-15 - +70°C	±0.05- 0.5°C
	CL-600N		Air-cooled, 600W	approx. 750W		

Utilize melting heat of ice which was stored during

Page	Model	Circulation	Compressor output	Cooling capacity (*)	Temp. range	Control accuracy
P.173	YW-12	Closed circuit	Air-cooled, 75W	approx. 1100W	around 0°C	—

External circulation while using water bath

Page	Model	Circulation	Compressor output	Cooling capacity (*)	Temp. range	Control accuracy
P.174	EL-8F	Closed circuit	Air-cooled, 80W	approx. 140W	10°C- +70°C	±0.1- 0.3°C
	EL-15F		Air-cooled, 150W	approx. 290W		
P.175	EZ-101		—	—	+60°C- +200°C	
	EZL-81F		Air-cooled, 80W	approx. 140W	-10°C- +100°C	

The Standard Small Chiller unit "Compact CH series"

Page	Model	Circulation	Compressor output	Cooling capacity (*)	Temp. range	Control accuracy	
P.178	CH-151AF	Closed circuit	Air-cooled, 150W	0.29kW	-10°C- +25°C	±2.0°C	
	CH-601A		Air-cooled, 600W	1.0kW			
P.179	CH-151BF		Air-cooled, 150W	0.29kW	-10°C- +80°C	±0.5°C	
	CH-601B		Air-cooled, 600W	1.0kW			
P.180	CH-402B		Air-cooled, 400W	0.7kW			
	CH-602B		Air-cooled, 600W	1.0kW			
P.181	CH-802B		Air-cooled, 750W	1.3kW	+10°C- +70°C		
	CH-802BF		Water-cooled, 750W	1.9kW			

Simple chiller series can respond to various needs

Page	Model	Circulation	Compressor output	Cooling capacity (*)	Temp. range	Control accuracy
P.186	CHA-500-2200	Closed circuit	Air-cooled, 0.5- 2.2kW	1.2- 6.0kW	+7°C ~ +25°C	±2.0°C
P.187	CHW-900-2200		Water-cooled, 0.9- 2.2kW	2.8- 9.4kW		

Large chiller "CH/CHV series" Can be customized

Page	Model	Circulation	Compressor output	Cooling capacity (*)	Temp. range	Control accuracy
P.192	CHV-750AS	Closed circuit	Air-cooled, 0.75kW	3kW	+10°C- +25°C	±0.1°C
	CHV-1500AS		Air-cooled, 1.1kW	5kW		
	CHV-2200AS		Air-cooled, 2.2kW	8kW		
	CHV-3750AS		Air-cooled, 3.75kW	18kW		
	CHV-4500AS		Air-cooled, 4.5kW	25kW		
P.190	CHV-6000AS		Air-cooled, 6.0kW	28kW		
	CHV-750W		Water-cooled, 0.75kW	3kW		
	CHV-1500W		Water-cooled, 1.1kW	6kW		
	CHV-2200W		Water-cooled, 1.9kW	9kW		
	CHV-3750W		Water-cooled, 3.75kW	14kW		
P.193	CH-1500AS0	Closed circuit	Air-cooled, 1.5kW	4.0kW	+5°C- +25°C	±2.0- 3.0°C
	CH-2200AS0		Air-cooled, 2.2kW	5.8kW		
	CH-3750AS0		Air-cooled, 3.75kW	11.2kW		
	CH-5500AS0		Air-cooled, 5.5kW	17.5kW		
	CH-7500AS0		Air-cooled, 7.5kW	22.0kW		
P.191	CH-6000W		Water-cooled, 6.0kW	22.8kW		
	CH-7500W		Water-cooled, 7.5kW	27.4kW		
	CH-9000W		Water-cooled, 9.0kW	31.9W		
	CH-11000W		Water-cooled, 11.2kW	40.4kW		
	CH-15000W		Water-cooled, 7.5kW×2	46.4kW		
P.194	SC-60	Closed circuit	Water-cooled, 1.5kW	1kW (*)	-60°C- +40°C	±0.5°C

medium for the heating control

	Features
	<ul style="list-style-type: none"> ● Basic operating temperature range up to + 80°C. ● Available in Cooling function by Primary cooling water. ● Heater output, Pumping capacity and Wetted part etc. can be changed.
	<ul style="list-style-type: none"> ● Accurately controlled the heating temperature in wide high temperature range. ● Inverter controlled, The pump is free from risk of liquid leakage. ● Temp. drop being in a short time by making cooling water flow into cooling coil.

is also available as an option.)

	Features
	<ul style="list-style-type: none"> ● For open circuit machine use for circulate mainly to water bath. ● Closed circuit is also available as an option.
	<ul style="list-style-type: none"> ● For open circuit machine use for circulate mainly to water bath. ● Can be circulated to closed circuit machine as an option. ● Various output and external sensor can be used. ● Cooling in high temperature range[CL-600N].

(*)When circulating fluid is +10°C, 50Hz.

non-operation time

	Features
	<ul style="list-style-type: none"> ● To cool melting heat of ice which was stored during non-operation time such as nighttime.

(**)In case of stop external circulation and cooling from around +20°C.

	Features
	<ul style="list-style-type: none"> ● Water bath is that free of projections and easy to put test tube stands etc. ● External circulation function by variable flow rate. ● Remote control setting input is available as an option.
	<ul style="list-style-type: none"> ● Silicon oil can be used in the heat insulated water bath. ● Temperature in low temperature range can be adjusted in EZL-81F. ● External circulation function by variable flow rate. Wetted parts are made of all stainless overall.

(*)When circulating fluid is +10°C, 50Hz.

	Features
	<ul style="list-style-type: none"> ● The air-cooled integrated chiller, not requires the primary cooling water and plumbing. ● The unit type pumps can be selected according to purpose.
	<ul style="list-style-type: none"> ● The air-cooled integrated chiller, not requires the primary cooling water and plumbing. ● The unit type pumps can be selected according to purpose. ● Various output and external sensor can be used.
	<ul style="list-style-type: none"> ● The air-cooled integrated chiller, not requires the primary cooling water and plumbing. ● The unit type pumps can be selected according to purpose. ● Cooling in high temperature range.
	<ul style="list-style-type: none"> ● The water-cooled integrated type is ideal for cleanroom. ● The unit type pumps can be selected according to purpose. ● Cooling in high temperature range. Various output and external sensor are available.

(*)When circulating fluid is +10°C, 50Hz.

by selecting various options.

	Features
	<ul style="list-style-type: none"> ● The air-cooled integrated chiller, not requires the primary cooling water and plumbing. ● The water-cooled integrated type is ideal for cleanroom. ● Available various optional pump units by select. ● The enhancement for the precision of temperature control, pure water etc are available as an option.

(*)When circulating fluid is +20°C, 50Hz.

upon request.

	Features
	<ul style="list-style-type: none"> ● The air-cooled separate type, no noise or vibration in the room. ● The equipped inverter enable to save energy and realize high accuracy. ● Plumbing the indoor unit and the outdoor unit required.
	<ul style="list-style-type: none"> ● The water-cooled integrated type is ideal for cleanroom. ● The equipped inverter enable to save energy and realize low operation noise and small consumption current. ● Customizable to upon request as special order.
	<ul style="list-style-type: none"> ● The all-weather unit for outdoor. ● Customizable to upon request. ● Can be operated by the remote control panel indoor.
	<ul style="list-style-type: none"> ● The water-cooled integrated type is ideal for cleanroom. ● Customizable to upon request as special order. ● The compressor output above 18 kW is available on custom-made.
	<ul style="list-style-type: none"> ● Can be stable cooling even in ultra low temperature range (Lowest temp. -60°C). ● The sealed tank. The pump is free from risk of liquid leakage.

(*)When circulating fluid is +10°C or +20°C, 50Hz. (**)When circulating fluid is -40°C

● Protuberances not included in Dimensions. ● Vessels of photo not included.

Proud of supply record as many as 18,000 TAITEC Chiller units from Laboratories to Various industries.

Chiller is a machine that circulates water or heating medium to an equipment while the temperature control of that, widely used among Measuring equipment, Food processing equipment, Scientific equipment, etc. Not only "Chiller = Chilling" but also "Hot water Circulator" and "Heat Exchanger" that control the temperature by giving heat to the object. TAITEC offers various Chiller units to meet user's needs such as Ultra-low temperature circulating fluid -60°C to High temperature circulating fluid 200°C, Customizable cooling capacity and circulating fluid amount etc.

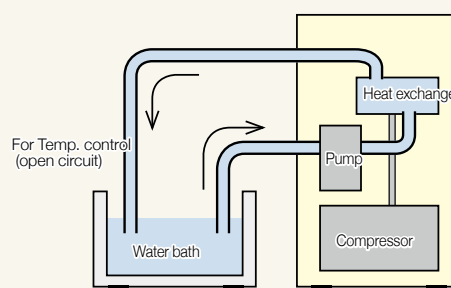
Taking advantage of supply record as many as 18,000 TAITEC Chiller units, we offer various kinds of Chiller units in different applications require cooling water circulation. Hence, the experienced TAITEC Chiller units respond to your intended use suitably.



For Open circuit and Closed circuit

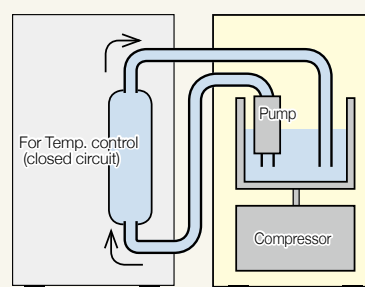
Chiller for open circuit

Chiller unit for open circuit is used for circulation to the outside water bath without its water bath. This Chiller unit can be also used for closed circuit.



Chiller for closed circuit

Chiller unit for closed circuit is used for circulation to the analytical instruments and others. This Chiller has the water bath.



Hot water circulator HC-03/06/09/12/15/24

Circulation the hot water up to +80°C with high accuracy $\pm 0.5^\circ\text{C}$. Various customized such as heater output and pump capacity upon the request.



HC-06

NEW

Features

- Basic operating temperature range up to + 80°C.
- Available in cooling function by primary cooling water.
- Heater output, pumping capacity and wetted part etc. can be changed.

Main Applications

- Hot water circulation to molding machine, Semiconductor manufacturing equipment, HVAC etc.
- A source of heat load for equipment testing.

Hot water circulator with high accuracy. Various customized such as heater output and number of pumps etc.

Heating temperature control with high accuracy $\pm 0.5^\circ\text{C}$ in temperature range 40°C to 80°C.

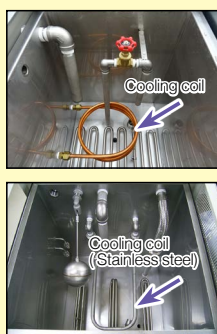
Various customized such as heater output and number of pumps, piping material, etc. based on the following models. Please feel free to contact us.

Model		HC-03	HC-06	HC-09	HC-12	HC-15	HC-24
Temperature range (*1)		+40°C to +80°C					
Control accuracy		PID controller, ±0.5°C					
Heater output		3.0kW	6.0kW	9.0kW	12.0kW	15.0kW	24.0kW
Pump ability (50/60Hz)	Max. discharge pressure [MPa]	0.52			0.59		
	Flow rate [L/min] (*2)	22/31			42/55		
	Motor output [kW]	0.4			0.75		
Water bath capacity (at 80% water level)		28L			110L		
Safety device/function		Short/Over current breaker, Phase-reversal relay, Warning and Cut off for low water, Circulating water high temperature, Pump overcurrent, Overheating protection					
Connecting pipe diameter (Circulating fluid in/out)				Rc3/4		Rc1	
Dimensions		386×512×865Hmm			627×772×1130Hmm		
Weight		approx. 105kg	approx. 110kg	approx. 120kg	approx. 190kg	approx. 200kg	approx. 220kg
Power Supply (three phase AC200V, 50/60Hz)		20A	30A	40A	50A	60A	100A
Operation current (50/60Hz)		12A	21A	29A	38A	46A	72A

(*1)The lower limit might be changed depending on operating conditions. Cannot be used for applications circulating water return temperature increases. (*2)Capacity when using tap water. The value when the discharge pressure at 0.3MPa. •The sensitivity current in ELCB should be set larger than 30 mA. •The primary cooling water is required when cooling function added. The cooling capacity depends on the cooling water conditions (Water temperature and Flow rate). •The fee for Delivery, Installing, Piping work and Wiring work are quoted separately.

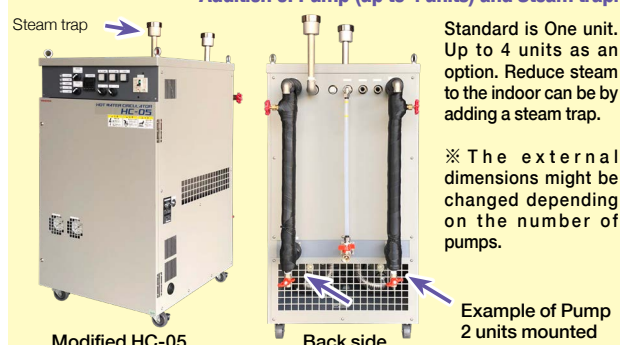
Examples of Customization

•The primary cooling water is required when cooling function added.



The standard model of Hot water circulator HC series is equipped with only Heating function. The cooling function can be added to by increasing the cooling coils into the water bath when the steps to lower the temperature are required. Recommended when lower the tank temperature earlier than waiting for natural cooling.
※ The primary cooling water is required when cooling function added. Please contact us for more information.

•Addition of Pump (up to 4 units) and Steam trap.



Standard is One unit. Up to 4 units as an option. Reduce steam to the indoor can be by adding a steam trap.

※ The external dimensions might be changed depending on the number of pumps.

Modified HC-05

Back side

Example of Pump 2 units mounted

Heat exchanger TEX-25A

Specialized in using with fluorine-based heating medium for the heating control in high temperature range.



TEX-25A

Hot medium circulator specializes in the heating temperature control.

Designed being used with fluorine-based heating medium (Galden® HT270 or HT200) for the heating control in high temperature range (+70°C to +200°C).

Features

- Accurately controlled the heating temperature in wide high temperature range.
- Inverter controlled, The pump is free from risk of liquid leakage.
- Temp. drop being in a short time by making cooling water flow into cooling coil.

Main Applications

- Heating control in high temp. range for Semiconductor manufacturing equipment.

Temperature drop quickly for Maintenance.

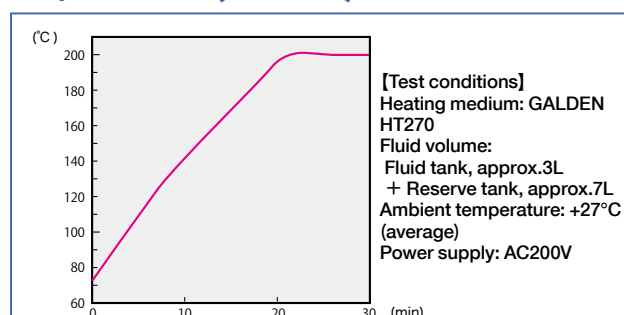
Make cooling water flow into cooling coil. e.g.; In the case the cooling water +20°C, it takes approx. 25 minutes to lower +70 °C from +200 °C.

Model		TEX-25A
Temperature range		+70°C to +200°C
Control accuracy (*1)		PID controller, ±0.5°C
Heater output		2.5kW
Pumping capacity	Flow rate [L/min]	14 (0.2MPa at 60Hz)
	Motor output [kW]	1.1
Temp. rise and drop time (*2)		Temp. rise time (+70°C→+200°C) : approx. 30 min (cooling water OFF) Temp. drop time (+200°C→+70°C) : approx. 25 min (cooling water ON), Cooling water condition : approx.8L/min at +20°C
Safety device/function		Short/Over current breaker, Circulating fluid high temperature, Temperature abnormal, Low fluid out off, Liquid high-level, Pump overload
INPUT/OUTPUT functions		Remote temperature control connector, Temp. monitor signal output, Safety device actuation signal output
Heating medium (Circulating fluid)		GALDEN HT270 or HT200 (cannot be mixed)
Fluid tank capacity		approx.3L (+Reserve tank : approx.7L)
Connecting pipe diameter		Circulating fluid in/out : Rc1/2, Primary cooling water in/out : Rc1/2
Dimensions / Weight		406×761×924Hmm, approx. 115kg
Power Supply (three phase AC200V, 50/60Hz)		15A
Operation current		12A
Standard accessories		Signal connector, power connector, spare fuse

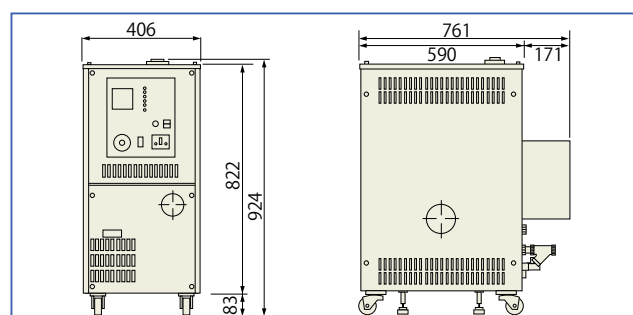
(*1)When the circulation flow rate is less 5 L/min at no-load. (*2)The unit alone at no-load. The specifications were when using GALDEN HT270.

•Ambient temperature range for this product is +7°C to +35°C. •The fee for Delivery, Installing, Piping work and Wiring work are quoted separately.

Temp. rise curve (Reference)



External dimensions



Coolpump CP-80R/150R

The line-up of chiller for open circuit can be chosen according to the required capacity and temperature control accuracy. Closed circuit is also available as an option.



CP-80R

CP-150R

[CP / CL series] For open circuit machine use for circulate mainly to water bath.

Circulation system for open circuit is used mainly for preparing constant temperature chamber. It is optimum for control temperature of sample.



Features

- For open circuit machine use for circulate mainly to water bath.
- Closed circuit is also available as an option.

Main Applications

- Circulation into temperature control water bath for inspection samples.
- Temperature control for culturing apparatus and analytical instruments is available as an option.

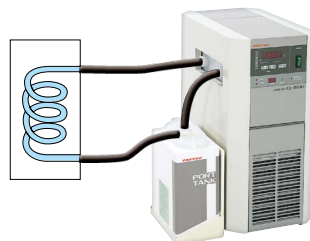
USER'S VOICE

I often see this circulator at research institutes of brewing. TAI TEC chiller can be used safely due to its reliability and long history of achievements.



[CP / CL series] Closed circuit is also available as an option.

Use optional port tank and the thermal insulation water tank for circulation into scientific instrument (closed circuit circulation). Even for objects with high piping resistance such as rotary evaporators, circulation can be easily started with the built-in priming pump.



Model		CP-80R	CP-150R
Temperature range		-10°C- Room temp.	
Control accuracy		±1.5 - 2.0°C (*1)	
Cooling capacity (*2)		approx. 140W	approx. 270W
Compressor (air cooled-type) output, Refrigerant		75W, R134a	150W, R134a
Pumping capacity (50/60Hz)	Max. flow rate	approx. 7/8 L/min	approx. 9/10 L/min
	Max. lift height	approx. 2/2.8 m	approx. 4/6 m
Heater		—	—
Nozzle diameter		Outer diameter φ13mm	
Safety device/function		Short/Over current breaker, Freezer protection circuit (1: auto stop at 40°C of circulating fluid, 2: timer ON-OFF cycle 3min), Real flow monitor (buzzer and LED display)	
Other Functions		Digital flow display, Sensor disconnection/Short circuit self-diagnosis	
Dimensions		230×395×455Hmm	250×425×525Hmm
Weight		approx. 26kg	approx. 34kg
Power Supply (*3)		AC100V·3.5A	AC100V·4.5A
Standard Accessory		Heat insulating hose for circulation (1m) x 2, Hose band x 2	

(*1) There may be a case where this value cannot be kept because of freezer protection timer depend on heat load.

(*2) When circulating fluid is +10°C, 50Hz.

(*3) Allowance of voltage variation is ±5% for AC 100V.

• Environmental temperature for this product is +5°C - +30°C. When using at above +30°C, cooling capacity may reduce. Lid of water bath may needed depend on bath shape and setting temperature.

• Please do not use pure water or distilled water. These may cause breakdown of machine.

• Please use heating medium when setting below +7°C.

Coolnit CL-80R/150R/300N/600N

The line-up of open circuit chillers can be chosen according to the required capacity and temperature control accuracy. Precise temperature control type. Various output and external sensor can be used. Closed circuit can be available as an option.

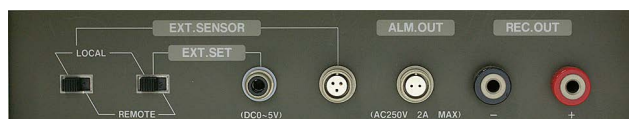
Features

- For open circuit machine use for circulate mainly to water bath.
- Can be circulated to closed circuit machine as an option.
- Various output and external sensor can be used.
- Cooling in high temperature range [CL-600N].

Main Applications

- Circulation into temperature control water bath for inspection samples.
- Temperature control for culturing apparatus and analytical instruments [option].

Thermograph and safety device actuation signal can be used.



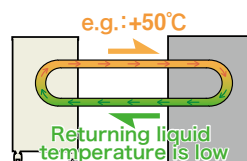
Output of thermograph, safety device actuation signal and optional external sensor. Programmed control is available by using optional program unit.



CL-600N

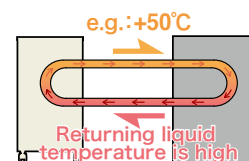
Cooling in high temperature range [CL-600N]

[Heating control]



For temperature control in high temperature range, general chiller is only heating control.

[Cooling control]



Cooling in high temperature range is required in this temperature control.

CL-600N is equipped with a function "Cooling at high temperature range" can cooling control in even high temperature region.

Model		CL-80R	CL-150R	CL-300N	CL-600N
Temperature range		-10°C to +70°C		-15°C to +70°C	
Control accuracy (*1)		±0.03 - 0.3°C		±0.05 - 0.5°C	
Cooling capacity (*2)		approx. 140W	approx. 270W	approx. 410W	approx. 750W
Compressor (air cooled-type) output, Refrigerant		75W, R134a	150W, R134a	250W, R404A	600W, R404A
Pumping capacity (50/60Hz)	Max. flow rate	approx. 7/8 L/min	approx. 9/10 L/min	approx. 15/17 L/min	
	Max. lift height	approx. 2/2.8 m	approx. 4/6 m	approx. 8/11 m	
Heater		450W	600W	1.4kW	1.8kW
Nozzle diameter		Outer diameter φ13mm		Outer diameter φ22mm	
Safety device/function		Short/Over current breaker, Low flow (buzzer and LED display), High temperature, Freezer high temperature cutting circuit (auto stop at 40°C of circulating fluid in CL-80R, CL-150R and CL-300N)			
Other Functions		Digital flow display, Remote temperature control connector, Connector for external sensor, External output terminal of cutout operation, Output terminal for thermograph (DC 0 - 1V, -20 - +80 °C)			
Dimensions		230×395×455Hmm	250×425×525Hmm	380×540×706Hmm	
Weight		approx. 26kg	approx. 35kg	approx. 62kg	approx. 74kg
Power Supply (*3)		AC100V・7.3A	AC100V・13.5A	AC100V・20A	AC100V・30A
Standard Accessory		Heat insulating hose for circulation (1m) x 2, Hose band x 2			

(*1) When using enough water and agitation inside water bath is good. Temperature regulation accuracy may vary depend on circulating fluid, setting temperature, environmental temperature, bath volume and circulating flow.

(*2) When circulating fluid is +10°C, 50Hz. (*3) Allowance of voltage variation is ±5% for AC 100V.

•Environmental temperature for this product is +5°C - +30°C. When using at above +30°C, cooling capacity may reduce. Lid of water bath may needed depend on bath shape and setting temperature.

•Please do not use pure water or distilled water. These may cause breakdown of machine.

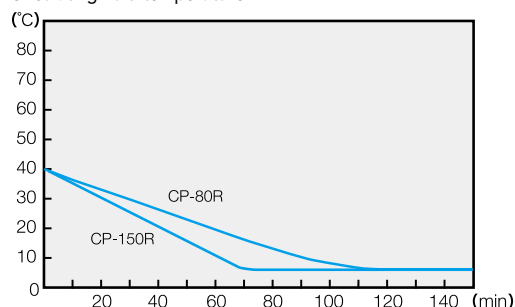
•Please use heating medium when setting below +7°C.

•External program control is possible by using optional program unit only in the case below 40°C.

CP/CL series Optional parts and Curved graphs etc.

Cooling curve for CP-80R/150R

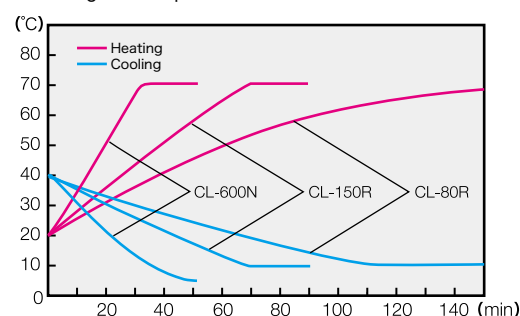
Circulating fluid temperature



(Conditions)
Preset temp. : +7°C Water bath: Thermal insulation water bath (w/o Lid)
Environmental temp. : 25°C average
Circulating fluid: Tap water, AC100V 50Hz

Heating / Cooling curve for CL-80R/150R/600N

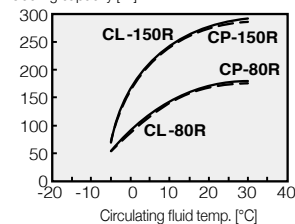
Circulating fluid temperature



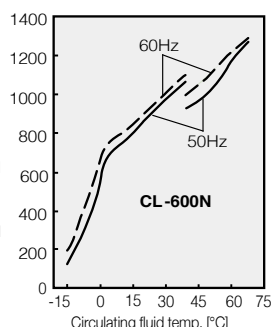
(Conditions)
Circulating fluid: Tap water Liquid measure: 10L (15L for CL-600N)
Water bath: CP-80R: Thermal insulation water bath (w/o Lid)
Environmental temp. : 25°C average Power supply: AC100V 50Hz
CL-150R/600N: Stainless thermal insulation water bath type A (Lid with nozzle)
*The cooling up until the operating point of freezer protection.

Cooling capacity curve for CP/CL series

Cooling capacity [W]



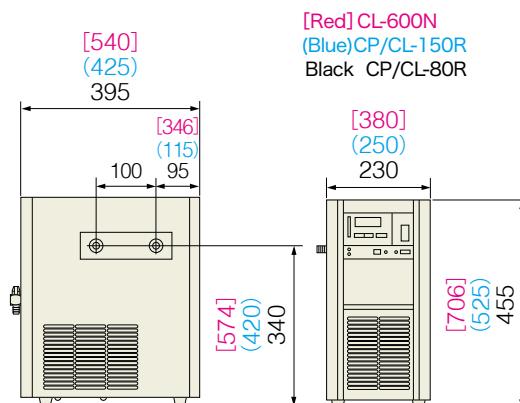
[Left panel]
Heating medium: Antifreeze (MC/Ethylene glycol) solution
Liquid measure: 10L
Room temp. : approx. 25°C
Power supply: AC100V 50Hz
Water bath: Stainless thermal insulation water bath A (Lid with nozzle)



[Right panel]
Heating medium: Tap water/80% Antifreeze solution Liquid measure: 15L
Room temp. : approx. 25°C
Power supply: AC100V 50/60Hz
Water bath: Stainless thermal insulation water bath A (Lid with nozzle)

External dimensions for CP/CL series

CL-600N accommodates casters.



Optional Accessories

Product Name / Model	Remarks
Port tank	For CP-80R/150R CL-80R/150R for open circuit
Stainless thermal insulation water bath type A ϕ13mm	Inner Dimension 300×400×200Hmm, With nozzle (ex.dia. ϕ 13mm)
Stainless thermal insulation water bath type A ϕ22mm	Inner Dimension 300×400×200Hmm, With nozzle (ex.dia. ϕ 22mm), CL-600N: Available Circulation to closed circuit machine.
PVC thermal insulation water bath type D ϕ13mm	Inner Dimension 164×294×150Hmm, With nozzle (ex.dia. ϕ 13mm)
Spring net rack type B2	External dimensions 280×320×140Hmm
Spring net rack type C	External dimensions 140×240×140Hmm
Caster	Set of 4, For CP-80R/150R CL-80R/150R
External temperature sensor for CL series SP-2504R	Outer diameter ϕ 4×250Lmm, For CL series
Record out cable ROC-5	For CL series
Alarm out cable AOC-2	For CL series
Program setting unit PU-5	Can set apart when connecting via line and can be used for remote temperature control for CL series.
Heating medium for low temperature "Antifreeze Show Brine Blue"	Use when needed together with low temperature water bath unit or immersion cooler 20kg, 1 can, use when setting below +7 °C

•For detail about antifreeze medium, see p198.

Stock chiller YW-12

Utilize melting heat of ice which was stored during non-operation time such as nighttime. Reasonable for usage which does not require severe temperature control.

Features

- To cool melting heat of ice which was stored during non-operation time such as nighttime.

Main Applications

- Cooling for Rotary evaporator (closed circuit circulation)



YW-12

Storage ice effect = idea is here

Melting heat of 0°C 1g of ice into 0°C water is 80cal (approx. 335J) compare to heat energy of 1cal (approx. 4.2J) to change temperature for 1°C of 1g of water. That means 0°C ice has cooling capacity about 80 times more than 0°C water. StockChiller put this principle into practice.

Circulation nozzle can be rotated at 360°

Direction of circulation nozzle can be adjusted depending on setting place.

Cool water circulation even with not enough electric capacity

For example, at cooling for Rotary evaporator, this device works well at "no need for severe thermoregulation, want to circulate water at around 0°C, but electric capacity of the facility is already occupied and cannot use high power cooler" kind of situation.

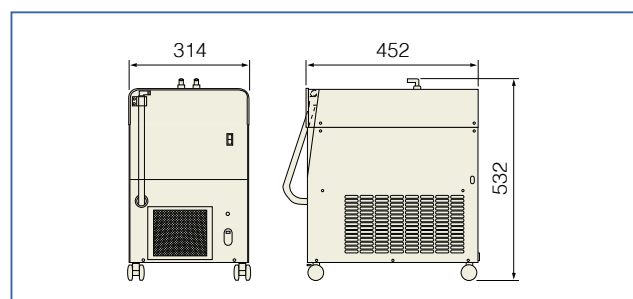
Model	YW-12
Temperature range	around 0°C
Ice storage capacity	approx. 12kg/12h (*1)
Cooling capacity	approx. 1100W (*2)
Compressor output, Refrigerant	75W, R134a
Pumping capacity (50/60Hz)	Max. flow rate: approx. 6.5/7.5L/min, Max. lifting height: approx. 5.0/6.8m
Dimensions inside bath	270×310×258Hmm (Bath volume: approx. 17L at Water level 80%)
Dimensions	314×452×532Hmm
Weight	approx. 20kg
Power Supply	AC100V-3A
Standard Accessory	L-shaped hose mouth (Outer diameter ϕ 9mm) × 2, Hose band × 2, Connector for irregular tube × 2

(*1)In case of stop external circulation and cooling from around +20°C.

(*2)Potential total work with maximal stored ice. Since this device utilizes melting heat of the ice for cooling, listed capacity may not be constantly obtained.

•Please do not use pure water or distilled water. These may cause breakdown of machine.

External dimensions



Optional Accessories

Product Name / Model	Qty
L-shaped hose mouth	2 pcs
Thermal insulation hose (inside dia. ϕ 9mm)	1 m/per

Coolnit bath EL-8F/EL-15F

External circulation while using water bath, variable flow rate. Can also be used for calibrating the thermometer. Remote control and temperature programming is available as an option.



EL-8F

EL-15F



Inside of the water bath filled with a test tube stand
(Not included in the product).

Model	EL-8F	EL-15F
Temperature range	-10°C to +70°C (*1)	
Control accuracy	±0.1 to 0.3°C (*2)	
Cooling capacity	approx. 140W (*3)	approx. 290W (*3)
Compressor (air cooled-type) output, Refrigerant	75W, R134a	150W, R134a
Pumping capacity (50/60Hz)	Max. flow rate approx. 4.2/4.5 L/min Max. lift height approx. 2.1/3.1 m	approx. 8.2/10 L/min approx. 5/6 m
Heater	500W	800W
Nozzle diameter	Outer diameter φ10mm	
Safety device/function	Short/Over current break, Floating type boil without water protection, High temperature	
Other Functions	Remote temperature setting input (DC 0-5V), agitating inside water bath	
Dimensions inside bath	250×310×150Hmm	250×395×150Hmm
Effective dimensions inside bath	250×190×150Hmm	250×250×150Hmm
Water bath capacity (water level 80%)	approx. 8L	approx. 12L
Dimensions	310×475×505Hmm	310×560×575Hmm
Weight	approx. 25kg	approx. 35kg
Power Supply	AC100V·9A	AC100V·14A
Standard Accessory	Stainless steel lid x1	

(*1) Please use heating medium for low temperature when setting at below 7°C. When using optional program unit, temperature range is -20°C - +80°C (There may be a case of difficult to use at below -10°C depending on operating condition).

(*2) Performance may not be maintained due to environmental temperature, power supply etc.

(*3) When circulating fluid is +10°C, 50Hz.

• Please do not use pure water or distilled water. These may cause breakdown of machine.

Features

- Water bath is that free of projections and easy to put test tube stands etc.
- External circulation function by variable flow rate.
- Remote control setting input is available as an option.

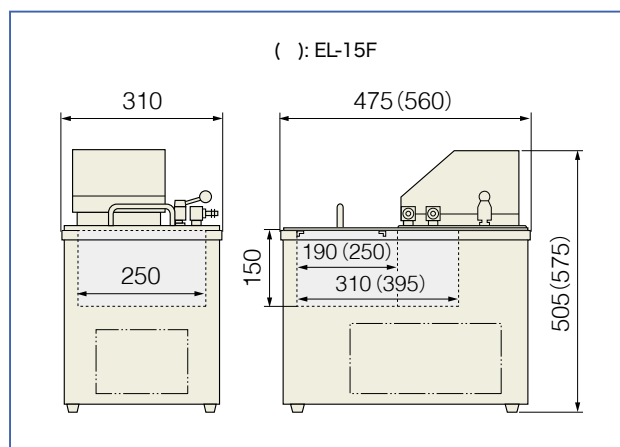
Main Applications

- Temperature regulation of culturing apparatus and analytical device.
- Calibration of thermometer in water bath. Keeping temperature of the sample.



Can temperature program control with an optional program unit.

External dimensions



Optional Accessories

Product Name / Model	Remarks
Circulation nozzle ex.dia. φ13mm	For changing nozzle diameter
Caster	Set of 4, For EL-8F/15F CP-80R/150R CL-80R/150R
Program setting unit PU-5 (*)	Can set apart when connecting via line and can be used for remote temperature control.
Heating medium for low temperature Antifreeze "Show Brine Blue"	Use when needed together with low temperature water bath unit or immersion cooler, 20kg, 1 can, use when use below +7 °C

(*) For detail, please contact us. -For detail about antifreeze medium, see p198.

Thermo supplier EZ-101/EZL-81F

External circulation while using water bath is available. Addressed to high temperature, silicon oil can be used as well. EZ-101 for high temperature range, EZL-81F for low to high temperature range.

Features

- Silicon oil can be used in the heat insulated water bath.
- Temperature in low temperature range can be adjusted in EZL-81F.
- External circulation function by variable flow rate. Wetted parts are made of stainless steel overall.

Main Applications

- Circulation to device which need temperature regulation at high temperature.
- Quality test at high temperature using water bath.
- Moisturizing and Cooling for samples.



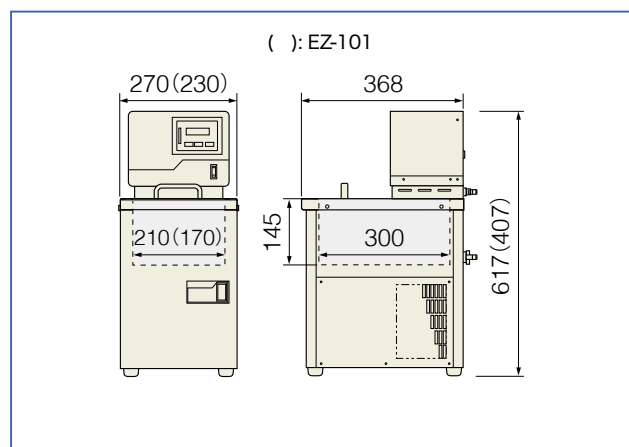
Available from -30°C to +200°C by combining the optional immersion cooler "Cool pipe" (when setting +30°C or more, cool pipe is removed).



EZ-101

EZL-81F

External dimensions



Optional Accessories

Product Name / Model	Remarks
Immersion cooler Cool pipe series	The immersion cooler can be used with EZ-101. (*)
Heating medium for high temp. Silicon oil MA-50	Kinetic viscosity 50mPa sec (cSt), 18kg, for precise temperature control and use higher than +70 °C.
Heating medium for high temp. Silicon oil MA-100	Kinetic viscosity 100mPa sec (cSt), 18kg, for use higher than +70 °C.
Heating medium for low temp. Antifreeze "Show Brine Blue"	Use when needed together with low temperature water bath unit or immersion cooler, 20kg, 1 can, use when use below +7 °C.

(*)For detail, please contact us. -For detail about heating medium, see p198.

Model	EZ-101	EZL-81F
Temperature range	+60°C to +200°C (*1) (*2)	-10°C to +100°C (*1) (*2)
Control accuracy	±0.1 - 0.3°C (*3)	
Cooling capacity	—	approx. 140W (*4)
Compressor (air cooled-type) output, Refrigerant	—	80W, R134a
Pumping capacity (50/60Hz)	Max. flow rate	approx. 8/10 L/min (variable)
	Max. lift height	approx. 4/5 m
Heater	1200W	800W
Nozzle diameter	Outer diameter φ10mm	
Safety device/function	Short/Over current breaker, Fuse (3A), Floating type boil without water protection (with protection of chattering), Thermosense type boil without water protection, Thermal switch for motor protection, High and Low temperature protection of sample, Freezer protection (approx. +40°C, only for EZL-81F), Diagnosis of temperature sensor error (disconnection/short), Diagnosis of low water level error, Alarm for high and low temperature protection of sample	
Other Functions	Agitating inside water bath, Cooling pipe (Outer diameter φ8mm) (*2), Immersion cooler port (Only EZ-101)	
Dimensions inside bath	170×300×145Hmm	210×300×145Hmm
Effective dimensions inside bath	150×100×140Hmm	
Water bath capacity (water level 80%)	approx. 6L	approx. 7.3L
Dimensions	230×368×407Hmm	270×368×617Hmm
Weight	approx. 15kg	approx. 35kg
Power Supply	AC100V-13A	AC100V-12A
Standard Accessory	Stainless steel lid×1	

【About EZ-101】

(*1)Temperature setting is available between -30°C - +200 °C. When setting temperature lower than RT, please use Immersion cooler together. There is special opening for Immersion cooler. When setting below +7°C, please use antifreeze. When setting above +70°C, please use heating medium for high temperature. (*2)When setting around RT - +60°C, please circulate cooling water (tap water) in cooling pipe. Temperature rise by work heat from mixing pump need to be minimized at below +60°C.

【About EZL-81F】

(*1)When setting below +7°C, please use antifreeze. When setting above +70°C, please use heating medium for high temperature. (*2)When setting around +40°C - +60°C, please circulate cooling water (tap water) in cooling pipe. Temperature rise by work heat from mixing pump need to be minimized at below +60°C. (*4)When environmental temperature is +25°C and circulating fluid is 10°C, 50Hz.

【Common to EZ-101 and EZL-81F】

(*3)Performance may not be maintained due to environmental temperature, power supply etc.
•Please do not use pure water or distilled water. These may cause breakdown of machine.

Selection guide

The Standard Small Chiller unit "Compact CH series" supports various industries!

Features

Cooling in High Temp. Range

The compressor continues to operate even at high temp. range to cool quickly the circulating fluid in high temp. range (200V Precise Temp. control type).

Can be made of stainless steel overall

The wetted parts of the chiller unit and pump can be made of stainless steel overall and used with pure water. These modifications are standard equipment in some models and optional as Custom order in other models.

Portable & Compact design

Compact design with casters and Air-cooled compressor (including 1 model of Water-cooled) enable the installation and the movement with ease.

The attachment/detachment pump enables replacement with ease.

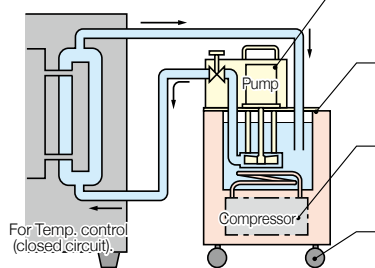
The unit type pump sold separately easily be removed from the chiller unit that controls the temperature for circulating fluid.

TAITEC VOICE

Please note the following matters.



Excellent portability design



The unit type pump is easy to maintain.
Original vertical leak-less pump (See the right page).

Compact size

Even with the largest CH-802B, 407×565×996 Hmm

Mainly Air-cooled type, easy to install (including 1 model of Water-cooled).

Easy to install and move it as primary cooling water and piping connections not required.

The casters enable the movement with ease.

The metal fittings can be fasten with the floor if necessary (Available the metal fittings in some models).

Pump unit
P-11



Pump unit
P-21



Pump unit
P-310



Pump unit
P-320



Pump unit
P-420



Pump unit
P-520



Standard Temp. Control (Control accuracy : $\pm 2.0^{\circ}\text{C}$)

•Air-cooled type for 100V

•Ideal for using for cooling and cold water production in the case their calorific values are known.



CH-151AF --> P.178

- Temperature range : -10°C to $+25^{\circ}\text{C}$
- Cooling capacity (at 50Hz) : approx. 0.29kW
- External dimensions : 407×485×676Hmm
- Power supply : Single-phase 100V



CH-601A --> P.178

- Temperature range : -10°C to $+25^{\circ}\text{C}$
- Cooling capacity (at 50Hz) : approx. 0.7/1.0kW
- External dimensions : 407×565×766Hmm
- Power supply : Single-phase 100V

Precise Temp. control (Control accuracy : $\pm 0.5^{\circ}\text{C}$)

•Air-cooled type for 100V/200V

•Precise Temp. control by heater

•Various output and external



CH-151BF --> P.179

- Temperature range : -10°C to $+80^{\circ}\text{C}$
- Cooling capacity (at 50Hz) : approx. 0.29kW
- External dimensions : 407×485×676Hmm
- Power supply : Single-phase 100V



CH-402B

CH-601B --> P.179

- Temperature range : -10°C to $+80^{\circ}\text{C}$
- Cooling capacity (at 50Hz) : approx. 1.0kW
- External dimensions : 407×565×766Hmm
- Power supply : Single-phase 100V

CH-402B/602B --> P.180

- Temperature range : -10°C to $+80^{\circ}\text{C}$
- Cooling capacity (at 50Hz) : approx. 0.7/1.0kW
- External dimensions : 407×565×766Hmm
- Power supply : Three-phase 200V

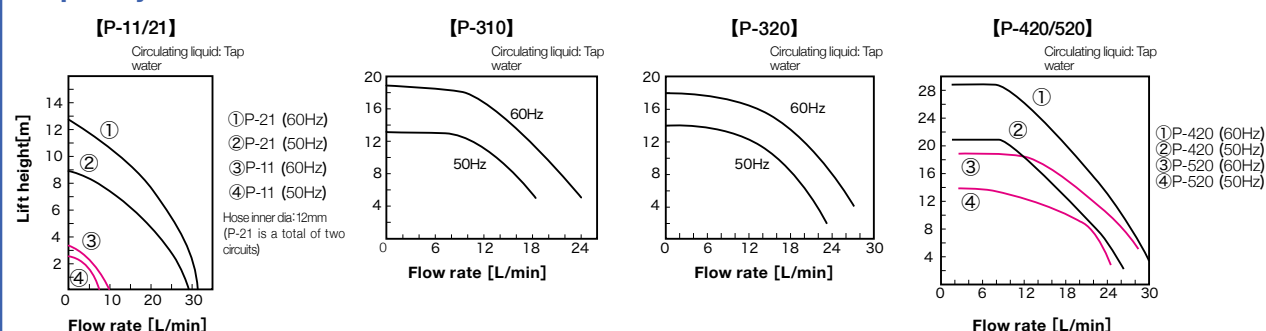
Constant temperature incubator shaker
CO₂ incubator shaker
Shaker
Mixer
Rotator
Stirrer
Bead beater
homogenizer
Ultrasonic homogenizer
Aluminum block bath
Minimize bath
Water bath
Shaking water bath
Immersion cooler
Hybridization oven
Constant temperature chamber
Centrifugal concentrator
Cold trap
Freeze dryer
Electrophoresis and blotting apparatus
Constant temperature circulating water circulating system [Chiller]
Appendix

Pump unit can be selected according to required capacity. Correspondence table for optional pump unit.

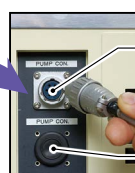
Types and abilities of pump unit (option/sold separately)

Discharge pressure	Model	Max. head (at 50Hz)	Max. flow (at 50Hz)	Number of circuit	Power supply	Applicable model	Remarks	Page on
Low	P-11	3m	8L/mim	1	100V	CH-151AF/601A CH-151BF/601B	The wetted parts made of stainless overall is available as an option.	P.182
	P-21	9m	29L/mim (2 circuits in total)	2		CH-601A		
	P-310	12.5m	19L/mim	1		CH-601A CH-601B	The wetted parts made of stainless overall.	
High	P-320	14m	23L/mim	1	200V	CH-402B/602B/802B CH-802BF	The wetted parts made of stainless overall.	
	P-420	20m	25L/mim	1			The wetted parts made of stainless overall. Usable heating medium: Tap water, Antifreeze (Show Brine Blue) and Galden®.	
	P-520	13m (Tap water)	23L/mim (Tap water)	1				

Pump ability curve Our original vertical leakless pump --> P.182



Easy attachment/detachment, Powersupply from the main unit, can be attached up to 2 units (Except for P-310/520)

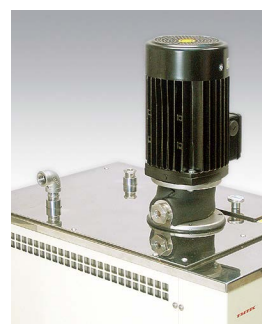


The connector for pump unit
(Power • Signal)

Use for the second pump unit

Up to 2 sets of pump unit can be mounted on Compact CH series. *The second pump unit can be mounted for an extra cost if chiller unit has enough cooling capacity.

A modified pump unit with further capacities (Pump head and Flow rate) can be mounted.



Modified pump unit that can meet the required specs is available. (Please ask us the price and more information).

◀ Example of Modified pump unit mounted



sensor are available.



CH-802B --> P.180

- Temperature range : -10°C to +80°C
- Cooling capacity (at 50Hz): approx. 1.3kW
- External dimensions : 407x565x996Hmm
- Power supply: Three-phase 200V



CH-802BF --> P.181 (Water-cooled type)

- Temperature range : +10°C to +70°C
- Cooling capacity (at 50Hz): approx. 1.9kW
- External dimensions : 407x590x771Hmm
- Power supply: Three-phase 200V

Cooling pump CH-151AF/601A

Air-cooled type CH series having excellent in portability for 100 V power supply. Ideal for using for cooling and cold water production in the case their calorific values are known.

Pump unit (Sold separately) --> P.182 External dimensions --> P.183



CH-151AF

CH-601A

The pump unit is sold separately.

For standard temperature adjustment type and cold water-producing equipment.

Temperature control is simple control by ON / OFF of compressor. Designed to demonstrate the most cooling capacity in the temperature range from -10°C to room temperature. Ideal for cold water production etc. Ideal for in the case their calorific values are known.

Optional pump is the unit type, shortens maintenance time.

Our original vertical leakless pump. The unit type can make shortens maintenance time due to its easy attachment/detachment.

Model	CH-151AF	CH-601A
Temperature range (*1)	-10°C to +25°C	
Ambient temperature range	+5°C to +35°C	
Control accuracy (*2)	±2.0°C, Compressor On-Off control	
Compressor output, Refrigerant	150W, R134a	600W, R404A
Cooling capacity (at 50Hz) (*3)	approx. 0.29kW	approx. 1.0kW
Temperature setting display	Digital system (setting/display switching system)	
Safety device/function	Short/Over current breaker, High temperature cutout, Alarm and warning for compressor, Phase-reversal relay, Alarm and warning for pump motor, Abnormal temperature sensor diagnosing circuits	
Other Functions	Temperature check monitor, Freezer pause timer	
Water bath capacity (water level 80%) (*4)	approx. 14L	approx. 26L
Applicable pump unit (*5)	P-11	P-11, P-21, P-310
Dimensions (Pump unit not included)	407×485×676Hmm	407×565×766Hmm
Weight (Pump unit not included)	approx. 42kg	approx. 69kg
Power Supply (Pump unit not included)	AC100V·50/60Hz, Single-phase	
	15A	20A
Operation current (Pump unit not included)	4A	9A
Standard Accessory	Power code, Drain hose x 1	

(*1)When setting below +7°C, please be sure to use antifreeze (Please ask us what type of).

(*2)Performance may not be maintained due to heating medium, environmental temperature, heat load, circulation pipe distance etc.

(*3)Capacity when using tap water and the circulating fluid temperature at 10 °C. The capacity varies with the pump unit mounted. The capacity decreases when the ambient temperature above +30°C.

(*4)Due to not the sealed structure, the circulating fluid might evaporates and reduces depending on the set temperature and heating medium type.

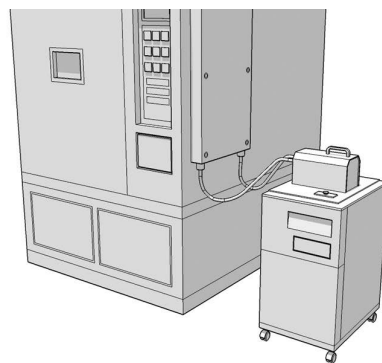
(*5)Please refer the pump units on p182.

Features

- The air-cooled integrated chiller, not requires the primary cooling water and plumbing.
- The unit type pumps can be selected according to purpose.

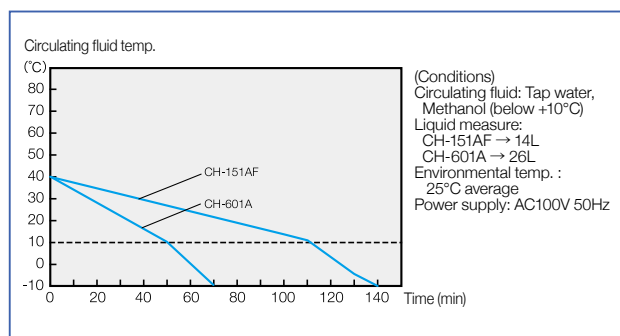
Main Applications

- Temperature control for the machine in the facility equipped with 100V power supply.

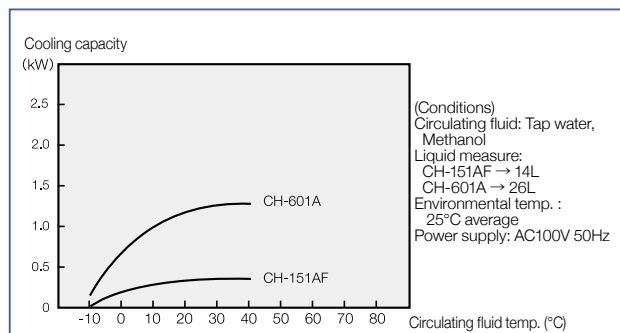


Ideal for simple circulation to heat sink etc.

Cooling curve



Cooling capacity curve



Cooling pump CH-151BF/601B

Air-cooled type CH series having excellent in portability for 100 V power supply. Built-in heater makes precise temperature control. Various output and external sensor are available.

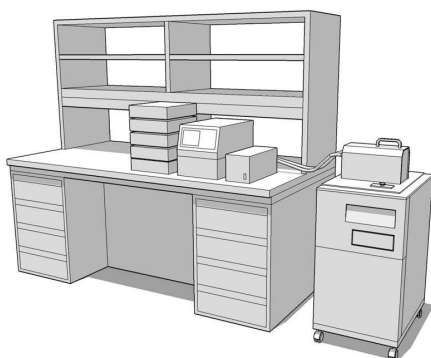
Pump unit (Sold separately) --> P.182 External dimensions --> P.183

Features

- The air-cooled integrated chiller, not requires the primary cooling water and plumbing.
- The unit type pumps can be selected according to purpose.

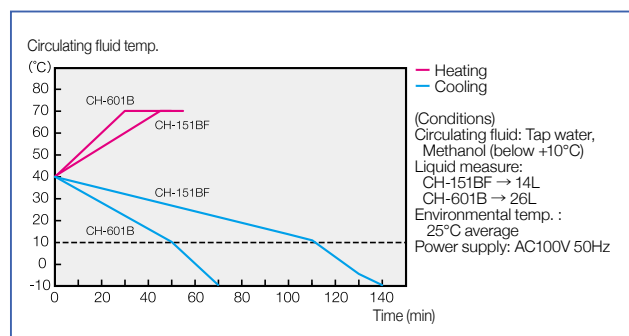
Main Applications

- Temperature control for the machine in the facility equipped with 100V power supply.

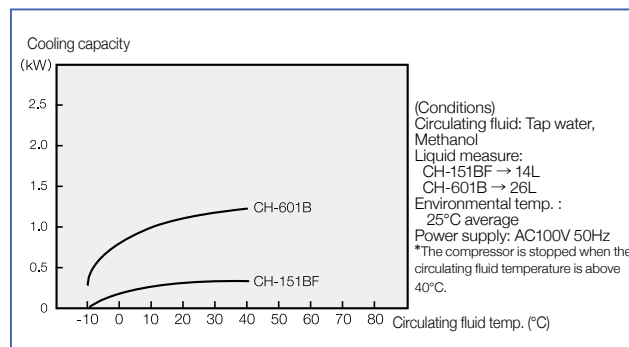


Since this unit is for AC 100 V, even if there is no AC 200V facility, can be used as the authentic chiller unit.

Heating/Cooling curve



Cooling capacity curve



CH-151BF

The pump unit is sold separately.

Various output and external sensor can be used.

Temperature setting can be the range of -10 °C to +80 °C.

The constant temperature circulation can be with stable and high accuracy as the compressor is operated continuously and the temperature is controlled by the heater. Can be used with 100V power supply. Remote temperature setting and external sensor (option) can be used. Various safety devices equipped are output actuation signals.

Model	CH-151BF	CH-601B
Temperature range (*1)	-10°C to +80°C	
Ambient temperature range	+5°C to +35°C	
Control accuracy (*2)	±0.5°C, Heater PID control	
Compressor output, Refrigerant	150W, R134a	600W, R404A
Cooling capacity (at 50Hz) (*3)	approx. 0.29kW	approx. 1.0kW
Heater output	0.6kW	1.8kW
Temperature setting display	Digital system (setting/display switching system)	
Safety device/function	Short/Over current breaker, Alarm and warning for compressor, High and Low temperature, Alarm and warning for pump motor, Abnormal temperature sensor diagnosing circuits, Alarm for replenishing liquid, Low-water cut off, Phase-reversal relay	
Other Functions	Temperature check monitor, Remote temperature setting, Safety signal for safety device, External temperature sensor connection (*4)	
Water bath capacity (water level 80%) (*4)	approx. 14L	approx. 26L
Applicable pump unit (*5)	P-11	P-11, P-310
Dimensions (Pump unit not included)	407×485×676Hmm	407×565×766Hmm
Weight (Pump unit not included)	approx. 46kg	approx. 75kg
Power Supply (Pump unit not included)	AC100V·50/60Hz, Single-phase	
Operation current (Pump unit not included)	15A	40A
Operation current (Pump unit not included)	10A	27A
Standard Accessory	Power code, Drain hose x 1, Connector for signal x 1	

(*1)When setting below +7°C, please be sure to use antifreeze (Please ask us what type of). The compressor is stopped when the circulating fluid temperature is above 40°C.

(*2)Performance may not be maintained due to heating medium, environmental temperature, heat load, circulation pipe distance etc.

(*3)Capacity when using tap water and the circulating fluid temperature at 10 °C. The capacity varies with the pump unit mounted. The capacity decreases when the ambient temperature above +30°C.

(*4)External temperature sensor (φ4×250mm) is available as an option.

(*5)Due to not the sealed structure, the circulating fluid might evaporates and reduces depending on the set temperature and heating medium type.

(*6)Please refer the pump units on p.182.

Cooling pump CH-402B/602B/802B

Air-cooled type CH series having excellent in portability for 200 V power supply. Built-in heater makes precise temperature control. Cooling in high temperature range, Wide temperature range, Various output and external sensor are available.

CH-402B/602B



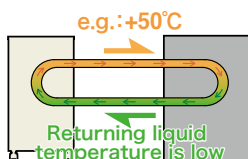
CH-802B



The pump unit is sold separately.

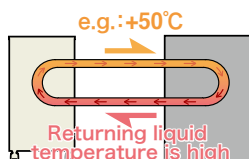
Cooling in high temperature range.

【Heating control】



For temperature control in high temperature range, general chiller is only heating control.

【Cooling control】



Cooling in high temperature range is required in this temperature control.

Model	CH-402B	CH-602B	CH-802B
Temperature range (*1)	-10°C to +80°C		
Ambient temperature range	+5°C to +35°C		
Control accuracy (*2)	±0.5°C, Heater PID control		
Compressor output, Refrigerant	400W, R404A	600W, R404A	750W, R404A
Cooling capacity (at 50Hz) (*3)	approx. 0.7kW	approx. 1.0kW	approx. 1.3kW
Heater output	1.8kW	2.25kW	3kW
Temperature setting display	Digital system (setting/display switching system)		
Safety device/function	Short/Over current breaker, Alarm and warning for compressor, High and Low temperature, Alarm and warning for pump motor, Temperature sensor abnormality diagnosis circuit, Alarm for replenishing liquid, Low-water cut off, Phase-reversal relay		
Other Functions	Temperature check monitor, Remote temperature setting, Temperature monitor signal output, Safety device actuation signal output, External temperature sensor connection (*4)		
Water bath capacity (*5)	approx. 26L (water level 80%)		
Applicable pump unit (*6)	P-320, P-420, P-52		
Dimensions (Pump unit not included)	407×565×766Hmm		407×565×996Hmm
Weight (Pump unit not included)	approx. 66kg	approx. 68kg	approx. 75kg
Power Supply (Pump unit not included)	AC200V·50/60Hz, Three-phase		
	10A	15A	20A
Operation current (Pump unit not included)	8A	10A	15A
Standard Accessory	Power code, Drain hose x 1, Connector for signal x 1		

(*1)When setting below +7°C, please be sure to use antifreeze (Please ask us what type of). (*2)Performance may not be maintained due to heating medium, environmental temperature, heat load, circulation pipe distance etc. (*3) Capacity when using tap water and the circulating fluid temperature at 10 °C. The capacity varies with the pump unit mounted. The capacity decreases when the ambient temperature above +30°C. (*4) External temperature sensor (φ4×250mm) is available as an option. (*5) Due to not the sealed structure, the circulation liquid might evaporates and reduces depending on the set temperature and heating medium type. (*6)Please refer the pump units on p182.

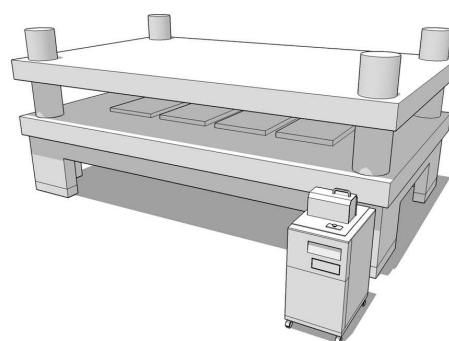
Pump unit (Sold separately) --> P.182 External dimensions --> P.183

Features

- The air-cooled integrated chiller, not requires the primary cooling water and plumbing.
- The unit type pumps can be selected according to purpose. •Cooling in high temperature range.

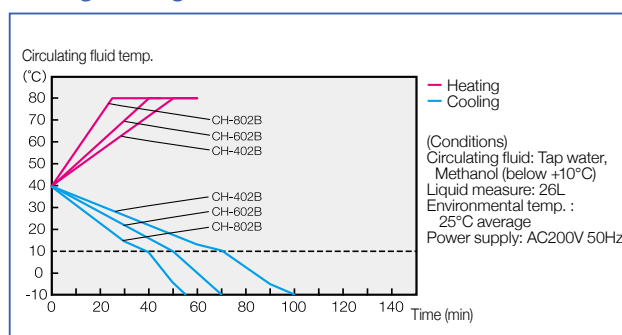
Main Applications

- Precise temperature control for a press die machining.

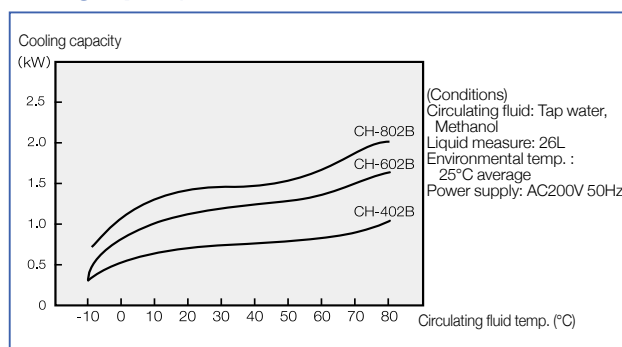


Precise temperature control for the upper and lower stages of press die machining. Circulate two with one unit is available as an option, enables to control the temperature of the upper and lower stages of the press working mold (within the capability).

Heating/Cooling curve



Cooling capacity curve



Cooling pump CH-802BF

Water-cooled type CH series having excellent in portability for 200 V power supply. Built-in heater makes precise temperature control. Cooling in high temperature range, Wide temperature range, Various output and external sensor are available.

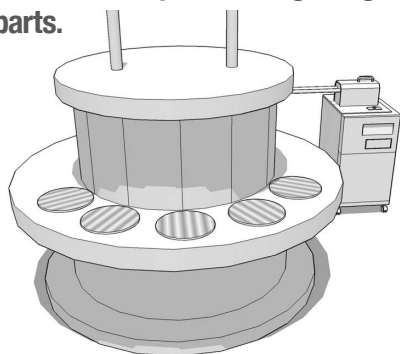
Pump unit (Sold separately) --> P.182 External dimensions --> P.183

Features

- The water-cooled integrated type is ideal for cleanroom.
- The unit type pumps can be selected according to purpose.
- Cooling in high temperature range. Various output and external sensor are available.

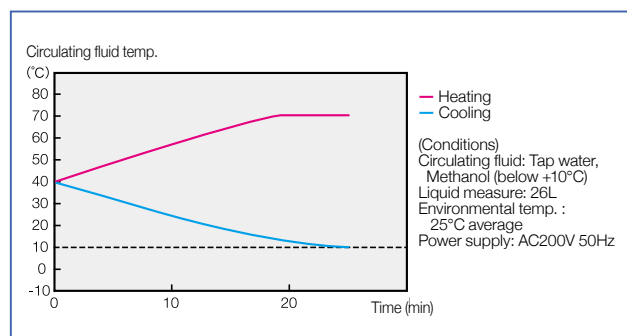
Main Applications

- Temperature control for processing stage of semiconductor parts.

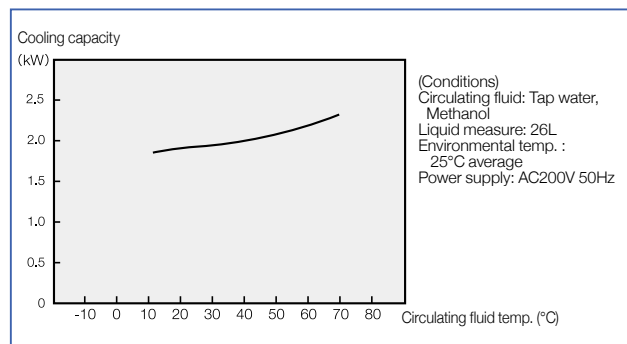


This product with the highest capability among CH series, ideal for applications requiring high cooling capacity and rapid temperature stability.

Heating/Cooling curve



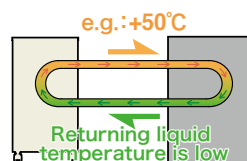
Cooling capacity curve



The pump unit is sold separately.

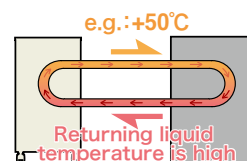
Cooling in high temperature range.

【Heating control】



For temperature control in high temperature range, general chiller is only heating control.

【Cooling control】



Cooling in high temperature range is required in this temperature control.

Model	CH-802BF
Temperature range (*1)	+10°C to +70°C
Ambient temperature range	+5°C to +35°C
Control accuracy (*2)	±0.5°C, Heater PID control
Compressor output, Refrigerant	750W, R407C
Cooling capacity (at 50Hz) (*3)	approx. 1.9kW
Heater output	3kW
Temperature setting display	Digital system (setting/display switching system)
Safety device/function	Short/Over current breaker, Compressor pressure abnormal, Compressor overcurrent, Compressor overload, Pump overcurrent, Temperature sensor abnormality diagnosis circuit, Alarm for replenishing liquid, Low-water cut off, Phase-reversal relay
Other Functions	Temperature check monitor, Remote temperature setting, Safety device actuation signal output, External temperature sensor connection (*4)
Water bath capacity (*5)	approx. 26L (water level 80%)
Applicable pump unit (*6)	P-320, P-420, P-520
Required primary cooling water	7.5L/min at +25°C, 18L/min at +34°C
Connecting pipe diameter of Primary cooling water	Rc1/2
Dimensions (Pump unit not included)	407x590x771Hmm
Weight (Pump unit not included)	approx. 90kg
Power Supply (Pump unit not included)	AC200V·50/60Hz·15A, Three-phase
Operation current (Pump unit not included)	12A
Standard Accessory	Power code, Drain hose x 1, Connector for signal x 1

(*1)When setting below +7°C or less, please be sure to use antifreeze (Please ask us what type of). (*2)Performance may not be maintained due to heating medium, environmental temperature, heat load, circulation pipe distance etc. (*3)Capacity when using tap water and the circulating fluid temperature at 10°C. The capacity varies with the pump unit mounted. The capacity decies when the primary cooling water below its required value. (*4)External temperature sensor (φ4x250mm) is available as an option. (*5)Due to not the sealed structure, the circulating fluid might evaporates and reduces depending on the set temperature and heating medium type. (*6)Please refer the pump units on p182.

P-11/21/310 for Compact CH series (AC100V)

Original vertical leakless pump.

Compact CH series (AC100V) --> P:178 - 179

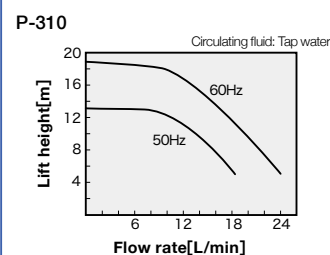
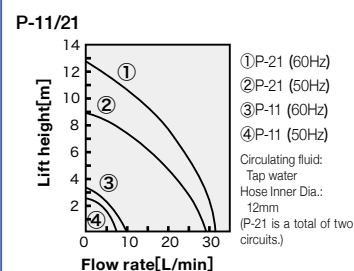


Model	P-11	P-21	P-310
Applicable units	CH-151AF/601A CH-151BF/601B	CH-601A	CH-601A CH-601B
Max. lift height [m] (50/60Hz)	3/4	9/13	12.5/17
Max. flow rate [L/min] (50/60Hz)	8/9	29/32 (*)	19/23
Nozzle diameter	13mm	13mm (changeable to 9mm by an optional part)	—
Connection diameter	Rc3/8	—	Rc3/8
Circulatory circuit	1	2	1
Motor output	40W	150W	250W
Safety device/function	Thermal protector		
Materials of wetted parts	Stainless, Brass (*2)	Stainless, Brass, Vinyl chloride resin	Stainless
Weight	approx. 7kg	approx. 8kg	approx. 13kg
Power Supply (from the main unit)	AC100V·50/60Hz·1A	AC100V·50/60Hz·3A	AC100V·50/60Hz·3.9/4.1A
Standard Accessory	Fixing screws, Hose fixtures	Fixing screws	

(*1)Max. flow rate of P-21 is a total of two circuits. (*2)P-11can be made of stainless overall.

•P-21should be used with the circulating fluid temperature below 30°C. •Please refer the dimensions on p18. •Above data for P-11 and P-21 were recorded when tap water at 7°C/no load, and P-310 was recorded when tap water at 20°C/no load. •P-11 and P-21 cannot be used with the circulating fluid with higher specific gravity and kinetic viscosity than water. P-310 should be used with tap water or solution antifreeze (Show Brine Blue) and water mixed and cannot be used with silicon oil.

Pumping capacity curve



Optional Accessories (Common in Pump units)

Top board for CH-151AF/151BF CHT-151

Top board for each unit (excluding CH-151AF/151BF) CHT-402

Changing nozzle diameter for P-21 (Outer dia. 9mm x 1)

Antifreeze Show Brine Blue (20kg, 1 can)

•For detail about antifreeze medium, see p198.

P-320/420/520 for Compact CH series (AC200V).

Available the model used with not only tap water also antifreeze and Galden®.

Compact CH series (AC200V)
--> P:180 - 181



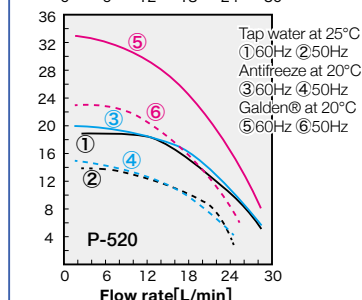
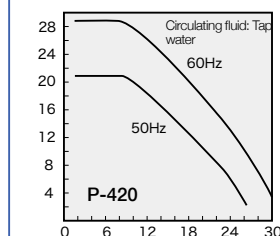
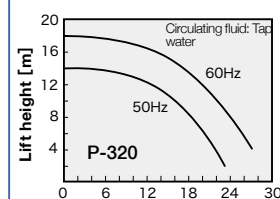
Model	P-320	P-420	P-520
Applicable units	CH-402B/602B/802B/802BF		
Max. lift height [m] (50/60Hz)	14/18	20/28	Tap water : 13/19 Antifreeze : 14/20 Galden® : 23/33
Max. flow rate [L/min] (50/60Hz)	23/27	25/29	Tap water : 23/27 Antifreeze : 23/27 Galden® : 24/28
Nozzle diameter/ Circulatory circuit	Nozzle diameter: Rc3/8, Circulatory circuit: 1		
Motor output	300W		
Safety device/function	Thermal protector		
Materials of wetted parts	Stainless		
Weight	approx. 10kg	approx. 12.5kg	approx. 13.5kg
Power Supply (from the main unit)	Three-phase, AC200V·50/60Hz·1.4A	Three-phase, AC200V·50/60Hz·1.7/1.6A	Three-phase, AC200V·50/60Hz·1.8/1.6A
Standard Accessory	Fixing screws		

•Please refer the dimensions on p18. •Above data for P-320 and P-420 were recorded when tap water at 20°C/no load, and P-520 were tap water/antifreeze/Galden® at 20°C/no load. •P-320 should be used with circulating fluid with below specific gravity 1.06 and kinetic viscosity 8.5mm²/s. •P-420 cannot be used with circulatory liquid with higher specific gravity and kinetic viscosity than water.

•Antifreeze should be with "Show Brine Blue (we designate)", and Galden® should be used with below kinetic viscosity 4cSt.

For optional parts refer to the above.

Pumping capacity curve

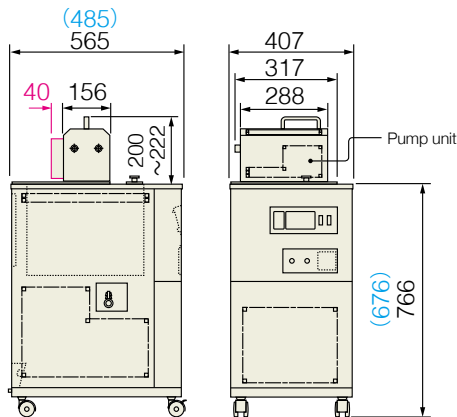


External dimensions for Simple/Compact CH series

Compact CH series --> P.178 - 181 Simple series --> P.186 - 187

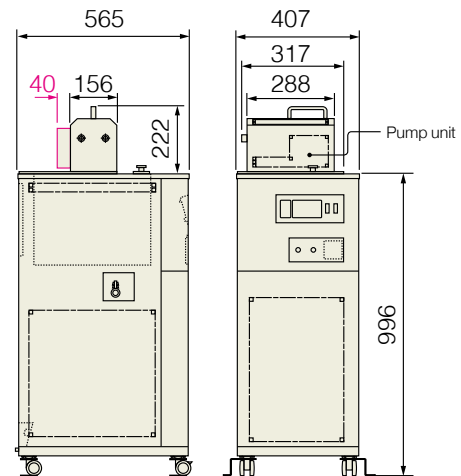
CH-151AF/601A/151BF/601B/402B/602B

Black CH-601A/601B/402B/602B
(Blue)CH-151AF/151B
The height (200-220) and width (40) differs with the mounted pump.



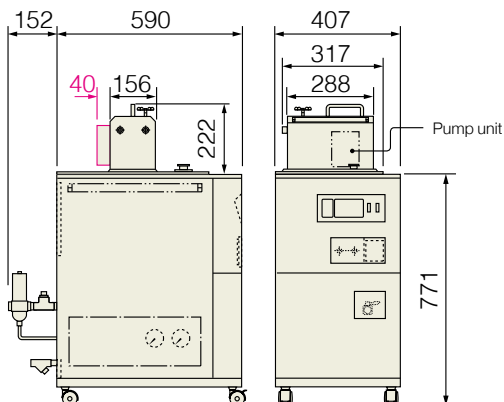
CH-802B

The width (40) differs with the mounted pump.

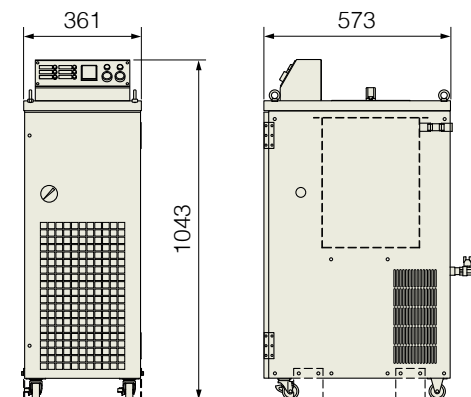


CH-802BF

The width (40) differs with the mounted pump.

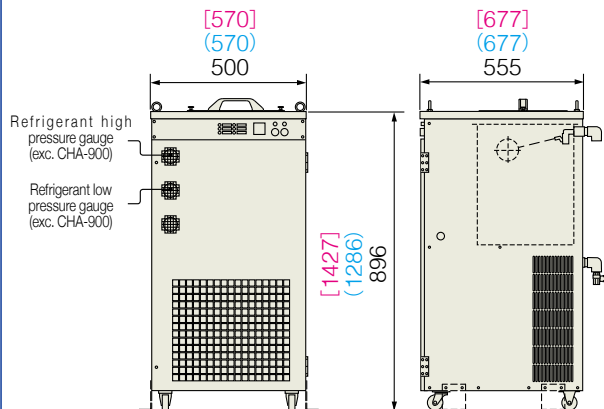


CHA-500



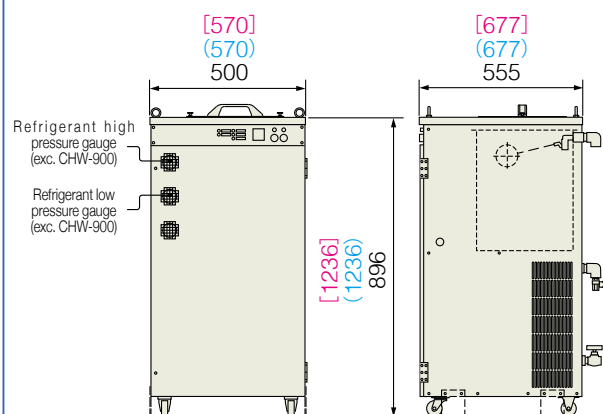
CHA-900/1500/2200

Black CHA-900 (Blue)CHA-1500 [Red]CHA-2200



CHW-900/1500/2200

Black CHW-900 (Blue)CHW-1500 [Red]CHW-2200



"Simple series" created from various supply records and requests.

Features and Advantages ~ Various Pump Capacity ~

Diverse optional accessories

All options except the standard specifications are available. Diverse pump unit specifications depending on Flow rate, Pump head and Materials (see the right page) are available to respond user's various needs. Also, Upgrade for Pure water, Precise temp control etc. are available. Simple series enables to reduce wasteful spending by adding the minimum necessary upgrade.

Space saving

Achieved to save the installation space by 65% compared with a conventional one. Contributes to the installation space saving and flexibility in the factory layout while remaining the cooling capacity.

Capacity expansion

The compressor output can be expanded more than 6kW or 7.5 kW listed in this catalog as per request such as 11kW, 15kW, 13kW or so. Please ask us in that case.

We will take care of your problems and requirements

Diverse Options help your problems and respond requirements.

- Want to save on a water rate for the Chiller unit.
- Want to secure a stable temperature cooling water.
- Want to operate several Chiller units.
- Want to prevent Red water from the Chiller unit.
- Want to use circulating fluid in the cleanroom.
- Want to need a Chiller with High-powered pump unit.

■ Safety operation thanks to the warning indicator



The warning indicator equipped with all models will be activated individually in case of emergency that enables deal with it promptly.

The detail of Diverse options

The lineup of "Simple series Chiller unit" are Four types of air-cooled and Three types of water-cooled. The series consists of basic functions with the minimal functions and capabilities to extend those as per customer's request as an option. The functions and the usage can be customized as one likes to prevent waste spending by adding the minimum necessary upgrade. This is the concept for "Simple series". The pumping capacity variations for the standard 7 models are as shown on the right depending on the options.

Optional Accessories	
Enhancement for the precision of temperature control	Hot gas bypass control ($\pm 1.0^{\circ}\text{C}$)
	Pulse width modulation expansion valve ($\pm 0.5^{\circ}\text{C}$)
Enhancement for the pumping capacity	High flow / High pump head / Stainless steel, Bronze Casting
Safety devices / functions added	No-fuse breaker
	Short circuit breaker
Materials of wetted part changed	Cooling coil (Stainless steel) • For Pure water
	Piping for Antifreeze
	Ball tap
CUSTOM-MADE	Remote control box
	Fan speed controller (Noise reduction by revolving speed control for cooling fan)
	Heater loaded
Safety measure	Fixing brackets

Delivery, Installing and Piping work

TAITEC VOICE



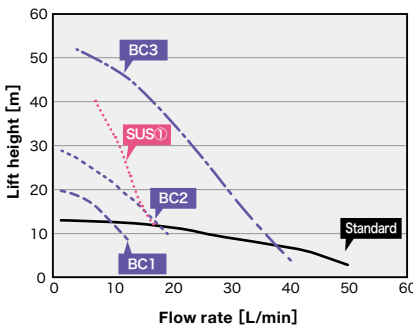
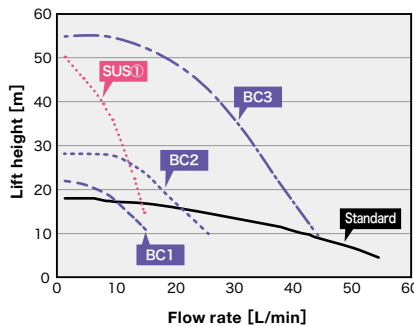


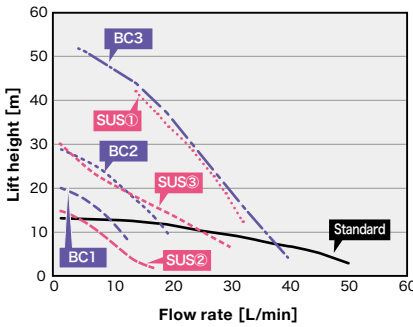
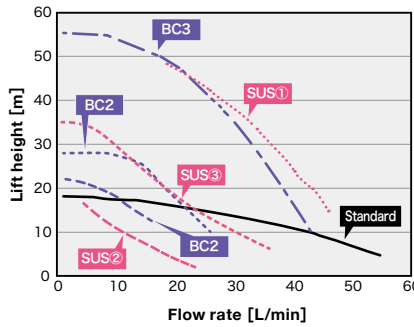


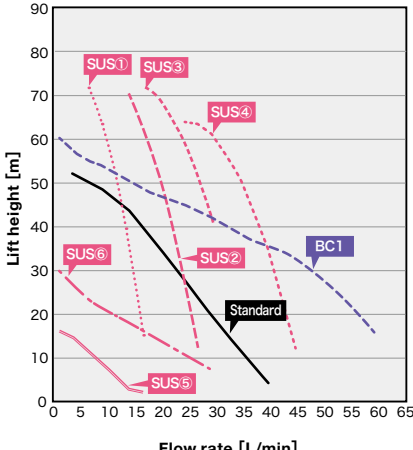
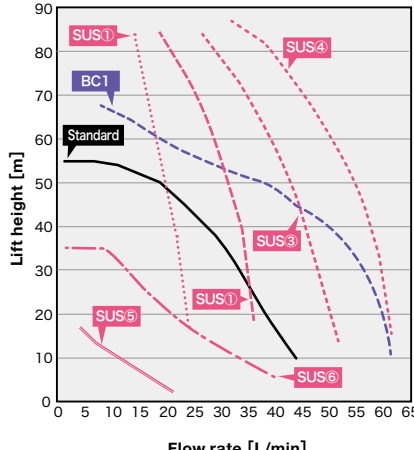


Please note the following matter.



The fee for Delivery, Installing, Piping work and Wiring work are quoted separately.

Model Selection by Pump Characteristic Curves

"Standard" showed below is the standard pump characteristic mounted in the chiller unit. Each of "BC1-3" "SUS①-⑥" is the optional pump characteristic.

Air-cooled type	Water-cooled type	Pump Characteristic Curves	
CHA-500	—	at 50Hz	at 60Hz
--> P.186 	NOW PLANNING 		
CHA-900	CHW-900	at 50Hz	at 60Hz
--> P.186 	--> P.187 		
CHA-1500	CHW-1500	at 50Hz	at 60Hz
--> P.186 	--> P.187 		
CHA-2200	CHW-2200	Pump variations of CHA-1500/2200 and CHW-1500/2200 are common.	
--> P.186 	--> P.187 		

Cooling pump CHA-500~2200/CHW-900~2200

Simple chiller series can respond to various needs from the consumers by selecting various options. Proud of various kinds of pump abilities in available, which can meet a high flow rate and a high pump head. Pure water, etc. are available as an option.

External dimensions --> P.183



Features

- The air-cooled integrated chiller, not requires the primary cooling water and plumbing.
- The water-cooled integrated type is ideal for cleanroom.
- Available various optional pump units by select.
- The enhancement for the precision of temperature control, pure water, etc. are available as an option.

Optional Accessories

(See also "★ mark" in the specification table below)

① For the precision of temperature control	Hot gas bypass control (±1.0°C) Pulse width modulation expansion valve (±0.5°C)
② Enhancement for the pumping capacity	High flow / High pump head / Stainless steel, Bronze Casting
③ Safety devices / functions added	No-fuse breaker Short circuit breaker
④ Materials of wetted part changed	Cooling coil (Stainless steel) • For Pure water Piping for Antifreeze Ball tap
⑤ CUSTOM-MADE	Remote control box Fan speed controller (Noise reduction by revolving speed control for cooling fan) Heater loaded
Safety measure	Fixing brackets

Standard specifications: Air-cooled type

(Specifications can be modified as an option)

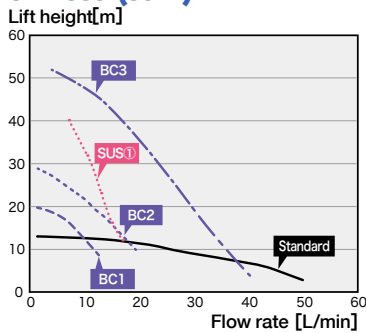
Model	CHA-500	CHA-900	CHA-1500	CHA-2200
Temperature range	+7°C to +25°C			
Ambient temperature range	+5°C to +35°C			
Control accuracy (*1)★	±2.0°C Compressor On-Off control			
Compressor output, Refrigerant	0.5kW, R407C	0.9kW, R407C	1.5kW, R407C	2.2kW, R407C
Cooling capacity [kW] (50/60Hz) (*2)	Circulation temperature at 10°C	1.0/1.1	1.7/2.1	4.0/4.3
	Circulation temperature at 20°C	1.2/1.3	2.7/2.9	4.5/4.7
Pumping capacity★ (50/60Hz) (*3)	Max. discharge pressure [MPa]	0.13/0.18	0.14/0.19	0.52
	Flow rate [L/min]	16/35	15/27	22/31
	Motor output [kW]	0.15/0.22	0.1/0.15	0.4
Water bath capacity (at 80% water level)	24L	26L	56L	
Safety device/function★	Alarm and warning for water shortage, Compressor pressure abnormal, Compressor overload, Pump overcurrent, Water temperature abnormal, Warning indicator lamp			
Connecting pipe diameter (Circulating fluid in/out)	Rp 1/2	Rc 1/2	Rc 1	
Dimensions	361×573×1043Hmm	500×555×896Hmm	570×677×1286Hmm	570×677×1427Hmm
Weight	approx. 80kg	approx. 110kg	approx. 178kg	approx. 190kg
Power Supply (three phase AC200V, 50/60Hz)	10A	15A	20A	30A
Operation current[A] (50/60Hz)	3.3/3.4	4.7/5.3	8.2/8.6	10.5/10.9

(*1) There may be a case where temperature performance cannot be maintained due to environmental temperature, heat load, circulation pipe distance etc. (*2) Capacity when the ambient temperature below +25°C. (*3) Capacity when using tap water. Flow rate when the discharge pressure of CHA-500/900 is at 0.125MPa and of CHA-1500/2200 at 0.3MPa. •Power cable is not included. •Pure water is available as an option. •The cooling capacity may not be maintained if the unit is placed with direct sunlight and hindrance of exhausting. •Please ask us when mixing chemicals for water treatment to circulating fluid. •The fee for Delivery, Installing are quoted separately.

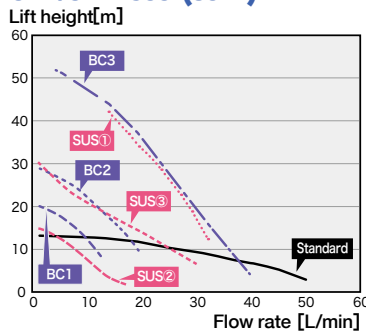
★ Can upgrade the abilities and add some functions by selecting option. ① To improve accuracy of temperature adjustment (changes to Hot gas bypass control or Pulse width modulation expansion valve). ② To improve capacity of pump unit (changes to Large flow rate / High head; Several types). ③ To add safety devices (No-fuse breaker and Earth leakage breaker). ④ To change materials such as of the valve for pure water, of the cooling coil, of the circulating fluid piping for the antifreeze and of the ball tap. ⑤ Addition functions (Special order/Option : Remote control box, To reduce noise by fan speed controller). ⑥ Other (Device fixing brackets).

Pump Characteristic Curves and Cooling Capacity

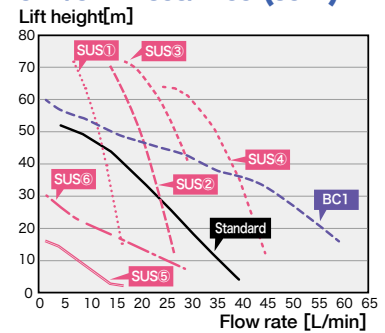
CHA-500 (50Hz)



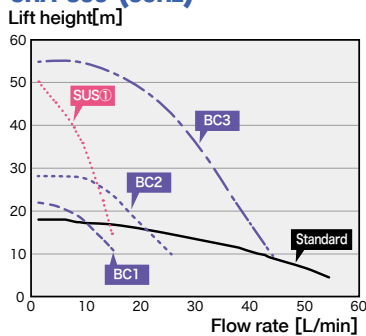
CHA/CHW-900 (50Hz)



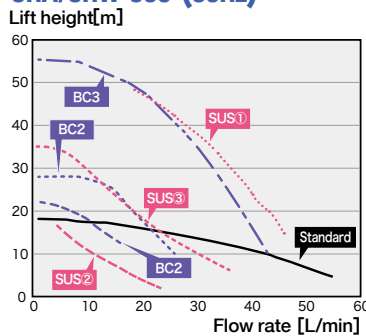
CHA/CHW-1500/2200 (50Hz)



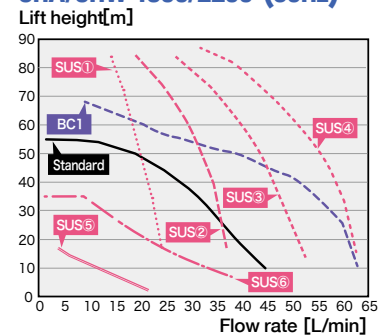
CHA-500 (60Hz)



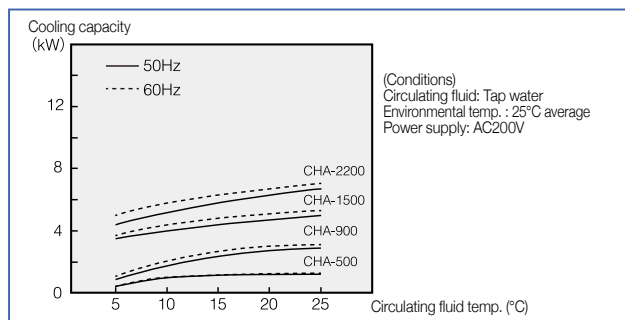
CHA/CHW-900 (60Hz)



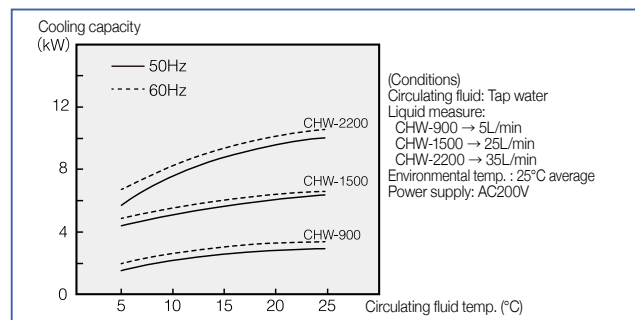
CHA/CHW-1500/2200 (60Hz)



Cooling capacity curve (Air-cooled type)



Cooling capacity curve (Water-cooled type)



Standard specifications: Water-cooled type (Specifications can be modified as an option)

Model	CHW-900	CHW-1500	CHW-2200
Temperature range/Ambient temperature range	Temperature range: +7°C to +25°C, Ambient temperature range: +5°C to +35°C		
Control accuracy (*1)★	±2.0°C Compressor On-Off control		
Compressor output, Refrigerant	0.9kW, R407C	1.5kW, R407C	2.2kW, R407C
Cooling capacity [kW] (50/60Hz) (*2)	Circulation temperature at 10°C	2.4/2.8	4.8/5.3
	Circulation temperature at 20°C	2.8/3.3	5.8/6.1
Pumping capacity★ (50/60Hz) (*3)	Max. discharge pressure [MPa]	0.14/0.19	0.52
	Flow rate [L/min]	15/27	22/31
	Motor output [kW]	0.1/0.15	0.4
Water bath capacity (at 80% water level)	26L	56L	
Safety device/function★	Alarm and warning for water shortage, Compressor pressure abnormal, Compressor overload, Pump overcurrent, Water temperature abnormal, Warning indicator lamp		
Required primary cooling water rate [L/min] (*4) (cooling water temperature: +25/+30°C)	5/10	25/50	35/60
Connecting pipe diameter (circulating fluid in/out, primary cooling water in/out)	Rc1/2, Rc1/2 (with valve)	Rc1, Rc1/2 (with valve)	Rc1, Rc3/4 (with valve)
Dimensions	500×555×896Hmm	570×677×1236Hmm	570×677×1236Hmm
Weight	89kg	approx. 170kg	approx. 172kg
Power Supply (three phase AC200V, 50/60Hz)	15A	20A	30A
Operation current [A] (50/60Hz)	4.4/4.7	7.8/8.0	9.5/10.7

(*1)There may be a case where temperature performance cannot be maintained due to environmental temperature, heat load, circulation pipe distance etc. (*2)Capacity when the cooling water temperature below +25°C. (*3)Capacity when using tap water. Flow rate when the discharge pressure of CHW-900 is at 0.12MPa and of CHW-1500/2200 at 0.3MPa. (*4)Capacity varies with the water temperature. Please note it may cause defect if the flow rate does not increase at high temperature, so please confirm if the required flow rate being secured in advance.

•Power cable is not included. •Pure water is available as an option. •Please ask us when mixing chemicals for water treatment to circulating fluid. •The fee for Delivery, Installing are quoted separately.

★Can upgrade the abilities and add some functions by selecting option. ① To improve accuracy of temperature adjustment (changes to Hot gas bypass control or Pulse width modulation expansion valve). ② To improve capacity of pump unit (changes to Large flow rate / High head; Several types). ③ To add safety devices (No-fuse breaker and Earth leakage breaker). ④ To change materials such as of the valve for pure water, of the cooling coil, of the circulating fluid piping for the antifreezes and of the ball tap. ⑤ Addition functions (Special order/Option : Remote control box, To reduce noise by fan speed controller). ⑥ Other (Device fixing brackets).

Selection guide

Constant temperature incubator shaker
CO-MonitorCO₂ incubator shaker

Shaker

Mixer
Rotator
StirrerBead beater
Ultrasonic homogenizerAluminum block bath
Minimize bathWater bath
Shaking water bath
Immersion coolerHybridization oven
Constant temperature chamberCentrifugal concentrator
Cold trap

Freeze dryer

Electrophoresis and blotting apparatus

Constant temperature circulating water system [Chiller]

Appendix

"Large CH series" responds user's various needs.

Features and Advantages

Built-in Inverter realizes Energy saving, Low noise operation and Compact size.

"Water-cooled integrated type" & "Air-cooled separate type" are renewed!

Achieved to save energy by 65% compared with a conventional one thanks to Built-in Inverter!

Stable cold water can be supplied at the preset temp $\pm 0.1^{\circ}\text{C}$ is possible when no load stably.

The lineup for Separate type and Outdoor type.

The style for installation of Chiller unit and the type of compressor can be variously selected depending on the installation environment. Air-cooled integrated type, Separate type and Outdoor type are available.

Capacity expansion available.

The compressor output can be expanded more than 6kW or 7.5 kW listed in this catalog as per request such as 11kW, 15kW, 13kW or so. Please ask us in that case.

Various customization are available as per request.

Diverse customization are available in Large CH/CHV series based on that of standard model as per your request. Please ask us a customization with your request specifications.

- ➔ The wetted parts can be made of stainless steel overall = Pure water can be used.
- ➔ Built-in filter for the circulating fluid = Prevents clogging of pump and others.
- ➔ Large Inverter Chiller CHV series with High precision temperature control system = Enables Control accuracy $\pm 0.05^{\circ}\text{C}$.
- ➔ A large capacity circulation pump amounted = The limited of installation space is relieved.
- ➔ Remote control box = Operates the unit by remote control.

Example of Customization

Actual examples of customization for large capacity Chiller below.

Precise temperature control Chiller for low temperature range

•Large cooling capacity in the minus temperature range was required!

This Chiller unit is ideal for a circulating fluid required be controlled for the temp in the minus temperature range. The built-in heater brings back quickly to the ordinary temperature fluid from low temperature for the maintenance.

Based on Modified CH-3750WFH --> P.194

- Cooling capacity (circulating temperature at -10°C , 50Hz) : approx. 0.4kW
- Temp. range : -20°C to $+20^{\circ}\text{C}$
- Control accuracy : $\pm 0.5^{\circ}\text{C}$
- Note : Water-cooled integrated type



Large capacity air-cooled Chiller unit

•Cooled separate type with Large cooling capacity was required.

Built-in Inverter compressor realizes Energy saving compared with a conventional one. The service temperature can be from $+5^{\circ}\text{C}$ (antifreeze with required to use).

Based on Modified CHV-4500AS --> P.192

- Cooling capacity (circulating temperature at $+20^{\circ}\text{C}$, 50Hz) : approx. 23kW
- Temp. range : $+5^{\circ}\text{C}$ to $+25^{\circ}\text{C}$
- Control accuracy : $\pm 0.5^{\circ}\text{C}$
- Note : Air-cooled separate type



Extra-large capacity air-cooled Chiller unit

•The circulating water was unable to be drawn from Cooling tower, but Larger cooling capacity was required in some way!

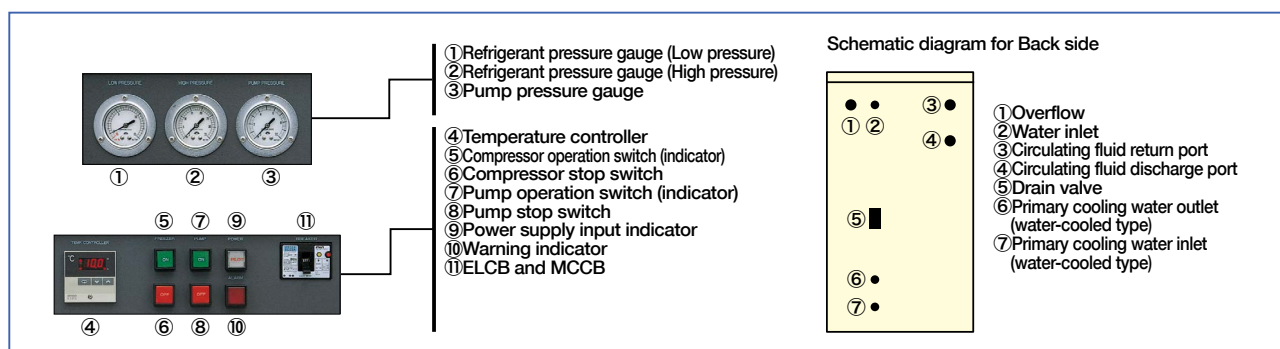
Generally, Chiller unit with large cooling capacity are mostly water-cooled type. This Extra-large cooling capacity air-cooled Chiller unit is ideal for the place where a cooling tower cannot be installed.

Based on Modified CH-15000ASO --> P.193

- Temp. range : $+10^{\circ}\text{C}$ to $+25^{\circ}\text{C}$
- Control accuracy : $\pm 3^{\circ}\text{C}$
- Note : Air-cooled integrated type, Outdoor use

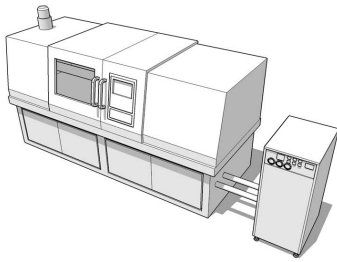


Complete indicators and Simple controls. The piping positioned on the backside.

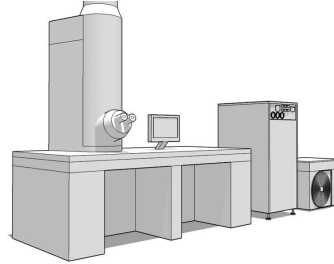


Main application of large chiller CH/large inverter chillerCHV series

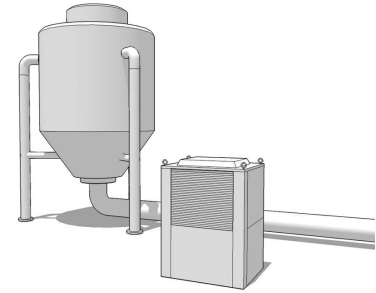
The temperature control for
Injection molding machine



Transmission electron microscope



Installed outdoors raw material tank



Hot Water Circulator/The high temperature circulator

Specialized for the heating control

Hot Water Circulator

- Hot water circulation to Molding machine, Semiconductor manufacturing equipment, etc.

Circulation the hot water up to +80°C with high accuracy $\pm 0.1^\circ\text{C}$.

HC-06 --> P.168

- Temperature range : +40°C to +80°C
- Control accuracy : $\pm 0.1^\circ\text{C}$
- Heater : 6.0kW
- Note : Available in Cooling function by Primary cooling water.



The high temperature circulator

designed being used with Fluorine-based heating medium

- The heating control in high temperature range for Semiconductor manufacturing equipment.

Designed being used with Fluorine-based heating medium (Galden® HT270) for the heating control in high temperature range (+70°C - +200°C).

TEX-25A --> P.169

- Temperature range : +70°C to +200°C
- Control accuracy : $\pm 2.0^\circ\text{C}$
- Heater : 2.5kW



Ultra low temperature circulator/Chiller unit for low temperature range

Specialized for the heating control in low temperature range

Ultra low temperature circulator designed being used with Fluorine-based heating medium

- Temperature control for Etching equipment.

This model is an Ultra-low temperature circulator for the cooling Etching equipment, Optical fiber production, etc. Designed being used with Fluorine-based heating medium (Galden® HT110).

SC-60 --> P.194

- Temperature range : -60°C to +40°C
- Control accuracy : $\pm 0.5^\circ\text{C}$
- Cooling capacity (circulation temperature at -40°C) : 1.0kW



Chiller unit for low temperature range (CUSTOM-MADE)

- Temperature control for Etching equipment.

This Chiller unit is ideal for a circulating fluid required be controlled for the temp in minus temp range.

Based on Modified CH-3750WFH --> P.194

- Temperature range : -20°C to +5°C
- Control accuracy : $\pm 3^\circ\text{C}$
- Cooling capacity (circulation temperature at -10°C) : approx. 0.35kW
- Note : Water-cooled integrated type



Delivery, Installing and Piping work

The fee for Delivery, Installing, Piping work and Wiring work are quoted separately.

TAITEC VOICE

Please note the following matter.



Cooling pump CHV-750W~3750W

**The equipped inverter enable to save energy and realize high accuracy.
Water-cooled integrated standard model. Can be customized upon request.**



CHV-750W
※The appearance is
subject to change.

**The equipped inverter enable to save energy and realize
low operation noise and small consumption current.**

Saves energy up to Max. 62% OFF (※Compared with our conventional products)
of operating current and Realizes the high accuracy ± 0.1 [°C].

Customizable to upon request as special order.

Can be customized based on the following specifications upon request,
please feel free to ask us. Cooling capacities other than the notation (see
below) and precision temperature control ± 0.05 °C are available as an option.

The water-cooled integrated type is ideal for cleanroom.

No exhaust heat from the compressor, no influence on the room. Primary
cooling water and its piping construction (a separate fee) are required.

Equipped with Warning indicator lamp.

Failure diagnosis can be performed speedily to shorten a time required for recovery.

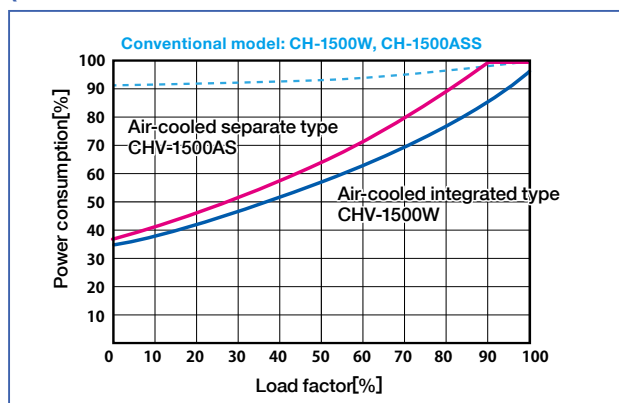
Features

- The water-cooled integrated type is ideal for cleanroom.
- The equipped inverter enable to save energy and realize low operation noise and small consumption current.
- Customizable to upon request as special order.

Main Applications

- The temperature control for Semiconductor manufacturing equipment, roller part of printing machine, etc.

**Power consumption curve
(Compared with our conventional products)**



Model		CHV-750W	CHV-1500W	CHV-2200W	CHV-3750W
Temperature range		+10°C to +25°C			
Control accuracy (*1)		±0.1 °C			
Cooling capacity [kW] (*2) (Circulation temperature at 10°C)		3.0	6.0	9.0	14.0
Compressor output, Refrigerant		0.75kW, R407C	1.1kW, R407C	1.9kW, R407C	3.75kW, R407C
Pumping capacity (50/60kHz) (*3)	Max. discharge pressure[MPa]	0.52			0.59
	Flow rate[L/min]	22/31			42/55
	Motor output[kW]	0.4			0.75
Safety device/function		Short/Over current breaker, Warning and Cut off for low water, Pump overcurrent, Water temperature abnormal, Refrigerant high pressure, Compressor unit abnormal			
Water bath capacity (at 80% water level)		26L	56L		110L
Required primary cooling water rate [L/min] (cooling water temperature: +20/+30°C) (*4)		9/22	16/36	23/50	40/86
Connecting pipe diameter (circulating fluid in/out, primary cooling water in/out)		Rc1/2, Rc1/2 (with valve)	Rc1, Rc3/4 (with valve)		Rc1-1/4, Rc1 (with valve)
Dimensions (Not include plumbing and protuberance)		450×573×1220Hmm	570×680×1420Hmm		720×900×1420Hmm
Weight		130kg	200kg	210kg	280kg
Power Supply (three phase AC200V, 50/60Hz) (*5)		10A		15A	30A
Operation current		6A	8A	10A	20A

(*1)Performance may not be maintained due to environmental temperature, heat load, circulation pipe distance etc. When the thermal load becomes below approx. 30% of the cooling capacity, the control accuracy changes to ± 2.0 to 3.0 °C due to the compressor On-Off control. (*2)Capacity when the ambient temperature at below +30°C. (*3)Capacity when using tap water. Flow rate when the discharge pressure at 0.3MPa. (*4)The required cooling water flow increases and decreases by the temperature. Please note that if the flow rate does not increase when the temperature is high it may cause trouble. (*5)The sensitivity current in ELCB should be set larger than 30 mA. •Since the water-cooled type requires primary cooling water for cooling, please make sure the specified flow rate being secured. •Pure water is available as an option. •Please ask us when mixing chemicals for water treatment to circulating fluid. •The fee for Delivery, Installing are quoted separately.

Cooling pump CH-6000W~18000W

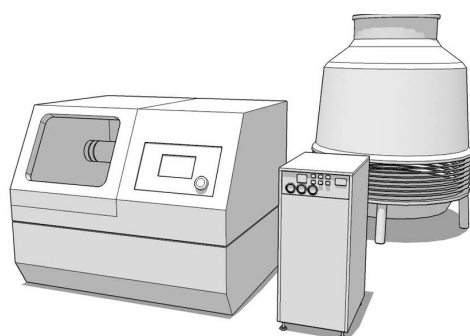
The water-cooled integrated type, ideal for cleanroom. Can be customized based on the following specifications upon request such as compressor output up to 18 kW, etc. from wide option range.

Features

- The water-cooled integrated type is ideal for cleanroom.
- Customizable to upon request as special order.
- The compressor output above 18 kW is available on custom-made.

Main Applications

- The temperature control for Semiconductor manufacturing equipment.

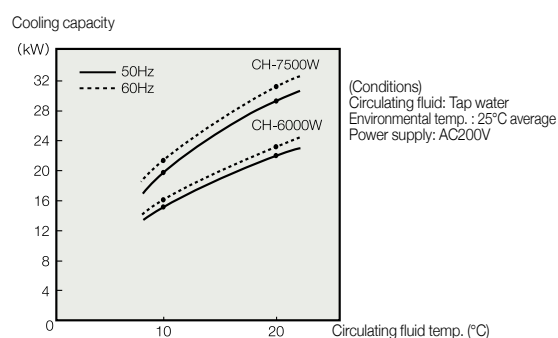


When the water temperature of the cooling tower is not stable during the summer/hot season, by using it as the primary cooling water of water-cooled chiller, a stable temperature cooling water can be obtained. (The cooling tower is actually installed outdoors).



CH-15000W
※The appearance is subject to change.

Pump Characteristic Curves (Reference)



Model		CH-6000W	CH-7500W	CH-9000W	CH-11000W	CH-15000W	CH-18000W
Temperature range		+5°C to +25°C					
Control accuracy (*1)		±2.0 to 3.0°C, Compressor On-Off control					
Cooling capacity [kW] (50/60kHz, Circulation temperature at +20°C) (*2)		22.8/24.4	27.4/29.2	31.9/34.1	40.4/43.1	46.4/49.0	57.4/60.3
Compressor output, Refrigerant		6.0kW, R407C	7.5kW, R407C	9.0kW, R407C	11.2kW, R407C	7.5kWx2, R407C	9.0kWx2, R407C
Pumping capacity (50/60kHz) (*3)	Max. discharge pressure [MPa]	0.32/0.45	0.33/0.47		Ask us		
	Flow rate [L/min]	40/110	83/140		Ask us		
	Motor output [kW]	0.77/1.2	1.02/1.69		Ask us		
Safety device/function		Short/Over current breaker, Overload protector, High and Low temperature, Refrigerant high and low pressure, Overheat protector for Compressor, Phase-reversal relay, Overheat protector for Compressor, Low water cut off, Warning indicator lamp					
Water bath capacity (at 80% water level)		280L	315L		Ask us		
Required primary cooling water rate [L/min] (cooling water temperature: +25°C/+34°C) (*4)		50/64	57/74	75/112	Ask us		
Connecting pipe diameter (circulating fluid in/out, primary cooling water in/out)		Rc1¼, Rc1¼			Ask us		
Dimensions		756×1020×1581Hmm	1107×823×1882Hmm		Ask us		
Weight		Ask us					
Power Supply / Operation current		AC200V・50/60Hz/three phase *Ask us for more information.					

(*1)Performance may not be maintained due to environmental temperature, heat load, circulation pipe distance etc.

(*2)Capacity when the ambient temperature at below +30°C.

(*3)Capacity when using tap water. Flow rate when the discharge pressure at 0.1MPa.

(*4)The required cooling water flow increases and decreases by the temperature. Please note that if the flow rate does not increase when the temperature is high it may cause trouble.

•Since the water-cooled type requires primary cooling water for cooling, please make sure the specified flow rate being secured. •Pure water is available as an option.

•Please ask us when mixing chemicals for water treatment to circulating fluid. •The fee for Delivery, Installing are quoted separately.

Cooling pump CHV-750AS~6000AS

The air-cooled separate type, ideal for cleanroom. The equipped inverter enable to save energy and realize high accuracy. Can be customized based on the following specifications upon request.



CHV-750AS (Indoor unit) CHV-750AS (Outdoor unit)

※Plumbing the indoor/chiller unit and the outdoor unit required.

The equipped inverter enable to save energy and realize low operation noise and small consumption current.

Saves energy up to Max. 60% OFF (※Compared with our conventional products) of operating current and Realizes the high accuracy ± 0.1 [°C].

Customizable to upon request as special order.

Can be customized based on the following specifications upon request, please feel free to ask us. Cooling capacities other than the notation (see below) and precision temperature control ± 0.05 °C are available as an option.

Equipped with Warning indicator lamp.

Failure diagnosis can be performed speedy to shorten a time required for recovery.

The wetted parts are made of stainless.

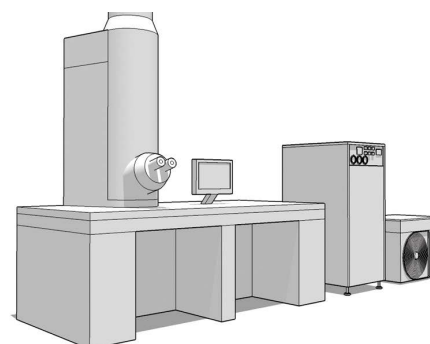
Restrains the generation of green copper rust to reduce defect.

Features

- The air-cooled separate type, no noise or vibration in the room.
- The equipped inverter enable to save energy and realize high accuracy.
- Plumbing the indoor unit and the outdoor unit required.

Main Applications

- The temperature control for Transmission electron microscope.



The separate type is ideal for temperature control for precision equipment as no exhaust heat in the room.

(*The chiller unit and the outdoor unit not placed side by side as shown in the figure, in fact, they installed separately.)

Model		CHV-750AS	CHV-1500AS	CHV-2200AS	CHV-3750AS	CHV-4500AS	CHV-6000AS
Temperature range		+10°C to +25°C					
Control accuracy (*1)		±0.1°C					
Cooling capacity [kW] (Circulation temperature at 10°C) (*2)		3	5	8	18	25	28
Compressor output, Refrigerant		0.75kW, R407C	1.1kW, R407C	2.2kW, R407C	3.75kW, R410A	4.5kW, R410A	6.0kW, R410A
Pumping capacity (50/60kHz) (*3)	Max. discharge pressure [MPa]	0.52			0.59		
	Flow rate [L/min]	22/31			42/55		
	Motor output [kW]	0.4			0.75		
Safety device/function		Short/Over current breaker, Warning and Cut off for low water, Pump overcurrent, Water temperature abnormal, Warning indicator lamp					
Water bath capacity (at 80% water level)		26L	56L		110L	230L	
Connecting pipe diameter (Circulating fluid in/out)		Rc1/2	Rc1		Rc1-1/4		
Dimensions	Indoor unit [W×D×Hmm]	450×555×896	570×677×1236		570×677×1241	687×922×1657	
	Outdoor unit [W×D×Hmm]	780×290×640	900×320×795		900×320×1540	990×750×1800	1202×442×1563
Weight	Indoor unit	70kg	110kg	115kg	125kg	160kg	
	Outdoor unit	40kg	56kg	70kg	116kg	220kg	190kg
Power Supply (three phase AC200V, 50/60Hz) (*4)		15A	20A	30A	50A	60A	
Operation current		7A	11A	16A	30A	42A	45A

(*1)Performance may not be maintained due to environmental temperature, heat load, circulation pipe distance, etc. When the thermal load becomes below approx. 30% of the cooling capacity, the control accuracy changes to ± 2.0 °C due to the compressor On-Off control.

(*2)Capacity when the ambient temperature at below +30°C.

(*3)Capacity when using tap water. Flow rate when the discharge pressure at 0.3MPa.

(*4)The sensitivity current in ELCB should be set larger than 30mA.

•The cooling capacity may not be maintained if the unit is placed with direct sunlight and hindrance of exhausting. •There is a limit to distance between indoor unit and out door unit, so please contact us for more information. •Pure water is available as an option. •Please ask us when mixing chemicals for water treatment to circulating fluid. •The fee for Delivery, Installing, Piping work and Wiring work are quoted separately.

Cooling pump CH-1500ASO~7500ASO

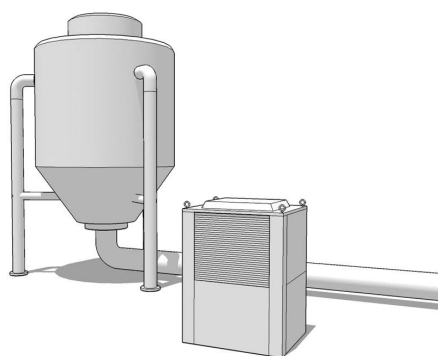
The air-cooled integrated type for outdoor, more than compressor output 7.5 kW is available as an option. Ideal for the case it cannot placed indoor.

Features

- The all-weather unit for outdoor.
- Customizable to upon request.
- Can be operated by the remote control panel indoor.

Main Applications

- Temperature control for installed outdoors raw material tank, etc.



CH-7500ASO

Can be customized upon request.

This model can be most widely customized among Large CH series. Customized based on the following specifications upon request such as Temperature range, Temperature control accuracy, Pump capacity, etc., also more than compressor output 7.5 kW is available as an option. Please feel free to ask us.

Ideal for the case it cannot placed indoor, can be used for temperature control for installed outdoors equipment.

Model		CH-1500ASO	CH-2200ASO	CH-3750ASO	CH-5500ASO	CH-7500ASO
Temperature range		+5°C to +25°C				
Control accuracy (*1)		±2.0 to 3.0°C, Compressor On-Off control				
Cooling capacity [kW] (50/60kHz) (*2)	Circulation temp:+10	3.7/4.1	5.2/6.4	9.7/10.3	14.9/15.3	19.5/22.0
	Circulation temp:+20	4.0/4.7	5.8/7.3	11.2/12.6	17.5/18.5	22.0/23.2
Compressor output, Refrigerant		1.5kW, R407C	2.2kW, R407C	3.75kW, R407C	5.5kW, R407C	7.5kW, R407C
Pumping capacity (50/60kHz) (*3)	Max.discharge pressure [MPa]	0.22		0.25		
	Flow rate [L/min]	60		180		
	Motor output [kW]	0.4		0.75		
Safety device/function		Short/Over current breaker, Overload protector, High and Low temperature, Refrigerant high and low pressure, Overheat protector for Compressor, Low water cut off, Phase-reversal relay, Overheat protector for Compressor (CH-1500ASO/2200ASO), Warning indicator lamp				
Water bath capacity (at 80% water level)		40L	61L	66L	91L	103L
Connecting pipe diameter (Circulating fluid in/out)		Rp1			Rp1¼	
Dimensions		530×900×1310Hmm	530×1090×1310Hmm	880×1260×1310Hmm	1046×1150×1905Hmm	1200×1410×1852Hmm
Weight		215kg	240kg	290kg	495kg	590kg
Power Supply (three phase AC200V, 50/60Hz)		30A		50A	75A	
Operation current (50/60Hz)		8/9A	10/12A	20/22A	26/29A	37/42A
Standard Accessory		Remote control panel				

(*1)Performance may not be maintained due to environmental temperature, heat load, circulation pipe distance, etc.

(*2)Capacity when the ambient temperature at below +30°C.

(*3)Capacity when using tap water. Flow rate when the discharge pressure at 0.1MPa.

- The cooling capacity may not be maintained if the unit is placed with direct sunlight and hindrance of exhausting.
- Pure water is available as an option.
- Please ask us when mixing chemicals for water treatment to circulating fluid.
- The fee for Delivery, Installing, Piping work and Wiring work are quoted separately.

Super cool SC-60

Ultra low temperature circulator, designed being used with Fluorine-based heating medium for the wide temperature range (Lowest temp. -60°C).

Features

- Can be stable cooling even in ultra low temperature range (Lowest temp. -60°C).
- The sealed tank. The pump is free from risk of liquid leakage.

Main Applications

- Temperature control for Etching equipment.
- Temperature control for Optical fiber production.



USER'S VOICE

SC-60 works behind the scenes to support the Optical fiber production.

Model		SC-60
Temperature range (*1)		-60°C to +40°C
Control accuracy (*2)		±0.5°C, Hearer PID Controller
Cooling capacity (*3)		1.0kW (Circulating temperature: -40°C)
Compressor output, Refrigerant		1.5kW, R23
Pumping capacity	Flow rate[L/min]	11 (at 0.15MPa)
	Motor output[kW]	0.40 ※Operated by inverter drive at 60Hz.
Heater output		2.4kW
Safety device/function		Leakage breaker, Liquid low-level, Refrigerant pressure, Refrigerant overload, Pump overload, Circulating fluid high temperature, Control circuit protection (overcurrent), Phase-reversal relay
Warning Functions (*4)		Low liquid level (Replenishment), Circulating fluid pressure rise, Heater overheat
INPUT/OUTPUT Functions		Safety device actuation signal output, Circulating fluid temp. output, Circulating fluid temp. external setting input, Device operation signal output, Remote operation signal input, Replenishment signal output
Heating medium (Circulating fluid)		GALDEN HT110
Circulating fluid tank capacity		approx. 15L (Circulating tank + Reserve tank)
Required primary cooling water rate (*5)		cooling water temperature +20°C: 15L/min, cooling water temperature +30°C: 30L/min
Connecting pipe diameter		Circulating fluid in/out: Rc1/2 (with valve) Primary cooling water in/out: Rc1/2 (Equipped with the strainer at the input and water control valve at the output.) Tank/Drain: Rc1/2 (with valve)
Dimensions / Weight		640×820×1305Hmm, approx. 250kg
Power Supply		Three phase AC200V, 50/60Hz, 30A
Operation current		approx. 20A

(*1)The minimum temperature (-60°C) when no-load performance. (*2)Capacity when circulating flow 6L/min or more. (*3)Capacity varies with the circulating flow rate. (*4)Even if the warning function is activated, the operation continues. (*5)Please note it may cause defect and reduction in the cooling capacity.

•The specifications described when using Galdden® HT110 (specified circulating fluid). •Ambient temperature: +5°C- +35°C (no condensation). •The fee for Delivery, Installing are quoted separately.

Chiller unit for low temperature range (Custom-made model)

The custom-made, performs cold water circulation between -20°C and +5°C.

Features

- The temperature range of standard is -20°C to +5°C.
- The temperature above the upper limit temp. (+5°C as described) can be customized.
- Heater output, pumping capacity, wetted member etc can be changed.

Main Applications

- The cooling for Processing machinery, etc.



CHV-3750WF
Custom-made model
※Please contact us for more information.