09

# Recirculating Coolers (chillers)

- General Recirculating Coolers
- Low Temp. Recirculating Coolers
- Advanced Low Temp. Recirculating Coolers
- High Temp. Recirculating Coolers
- Compact Recirculating Cooler

## General Applications

### Recirculating Cooler (HX)

Warming reagents, Routine laboratory applications, Coliform determinations, Sample thawing, Bacteriological examinations, Microbiological assays, Cell cultivation.

### Recirculating Cooler (HL/HS/HH)

Temperature control, Incubations, Material testing, Increasing solubility rates, Corrosion tests, Cell cultivation, Histological studies.

### Recirculating Cooler (RC)

Viscosity measurements, Fecal coliform testing, Plasma thawing, Histological studies.

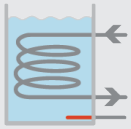
| Product Name | | General Recirculating Coolers | | Low Temp. Recirculating Coolers | |
|---|---|---|---|---|---|
| Model | | HX | HX-H | HL | HL-H |
| Description | | - | | - | |
| Temp. control (℃/℉) | | 3 to 40 / 37.4 to 104 | | -20 to 40 / -4 to 104 | |
| Temp. stability at 15℃ (±℃/℉) | | 1 / 1.8 | | 1 / 1.8 | |
| Cooling capacity at 20℃ (Kw) | | 1.9, 2.4 | 1.9, 2.4, 3.6, 4.7, 7.1 | 0.6, 0.7, 1.45, 1.8 | 1.45, 1.8, 2.5, 3.3, 6.5, 7.1 |
| Heating capacity at 20℃ (Kw) | | - | - | - | - |
| Pump (50Hz) | Max. flow rate (L / min) | 40 | 28 | 50 | 40, 70 |
| | Max. pressure (bar) | 1.58 | 4.3 | 1 | 3.3, 6 |
| Dimension | Max. filling capacity (L) | 35, 45 | | 7.5, 13.5, 25, 39 | |
| | for tubing dia. (mm / inch) | 20 | | 20 | |
| Control | Display & Control interface | LCD, Buttons | | VFD, Touch buttons, Knob | |
| | Computer interface | - | | - | |
| | JeioTech Network | - | | - | |
| Safety | Over temp. limit | - | | - | |
| | Low fluid level alarm | O | | O | |
| | External sensor | - | | - | |

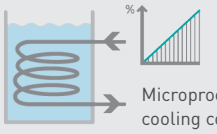
# Technical Benefits

**Wide model selection covers all of your application needs**

- Excellent heating and cooling control from -10 to 80℃.
- Cooling capacity of up to 7.7kW
- Circulating pumps up to 70 L/min and 6 bar.
- Energy-effective by-pass model and cost-effective general model.

**Stand alone cooling performance**




### HH models

- Broad cooling and heating task from -20℃ to 80℃.
- Quick heat up time with the intergrated heater.
- Superb temperature stability of ±0.1℃ by microprocessor PID control.

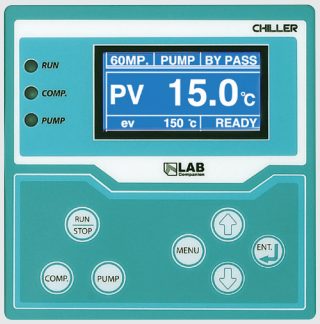
### HS models

- Smart cooling performance from with high temperature stability.
- No heater equipped, high temperature stability of ±0.2℃ is guaranteed with only using a refrigerating system.

- Cooling capacity of refrigerator is adjustable from 1% to 100% by high-tech microprocessor PID control. (patent pending)

| Advanced Low Temp. Recirculating Coolers | | High Temp. Recirculating Coolers | | Compact Recirculating Cooler |
|---|---|---|---|---|
| HS | HS-H | HH | HH-H | RC |
| • Precise temperature stability without heater. | | • Broad temp. range.<br>• Quick heat up time and precise temp. stability with intergrated heater. | | • Compact size. |
| -20 to 40 / -4 to 104 | | -20 to 80 / - 4 to 176 | | -10 to 30 / 14 to 86 |
| 0.2 / 0.36 | | 0.1 / 0.2 | | 1 / 1.8 |
| 1.45, 1.8, 2.5, 3.3, 6.5, 7.1 | 6.5, 7.1 | 1.45, 1.8, 2.5, 3.3 | 6.5, 7.1 | 0.58 |
| - | - | 2, 4 | 8.4 | - |
| 40 | 70 | 40 | 70 | 26 |
| 3.3 | 6 | 3.3 | 6 | 0.7 |
| 13.5, 25, 39 | | 13.5, 25, 39 | | 5 |
| 20 | | 20 | | 9.5 |
| VFD, Touch buttons, Knob | | VFD, Touch buttons, Knob | | LCD, Buttons |
| RS-232 port, Alarm output port | | RS-232 port, Alarm output port | | - |
| O | | O | | - |
| - | | O | | - |
| O | | O | | O |
| O (optional) | | O (optional) | | - |

# Providing a constant temperature control and high cooling efficiency.




LCD display

Pressure gauge


Level indicator

## Performance

- Temperature range from 3℃to 40℃.
- High cooling capacity up to 7.1kW at 20℃.
- Powerful circulating pumps up to 40L/min., 4.3 bar.
- Refrigerating system is designed to reduce energy consumption and maximize refrigerating efficiency.
- Pump pressure can be controlled using a by-pass function. (for H type)

## Convenience

- Clear and easy-to-use LCD display. (resolution 0.1℃)
- Bright LED water level indicator can be seen from a distance.
- Built in pressure gauge for checking pump pressure at a glance.
- High/low pressure gauges for condition diagnosis of refrigerating system at a glance. (for H type)
- Wide filling inlet for easy and safe pouring of solution into the unit.
- Suitable model is selectable between magnetic pump, centrifugal pump.
- Double service valve prevents refrigerant leakage for easy maintenance.
- Removable gridded vent for easy maintenance of condenser.
- Built-in casters for easy transport and installation.

## Safety

- Self-diagnostic function identifying errors.
- Complete safety protection system with warning alarms.
  - Low fluid level and dry-running protection; when triggered shows an error symbol on the display and an audible buzzer sound.
  - Over-temperature protection; If the equipment operates at over maximum temperature due to external environment, user can simply identify the error with a visual signal or an audible buzzer sound.
  - Over-current circuit breaker.
- Eco-friendly R-404A refrigerant use for environmental protection.
- Splash-proof keypad.

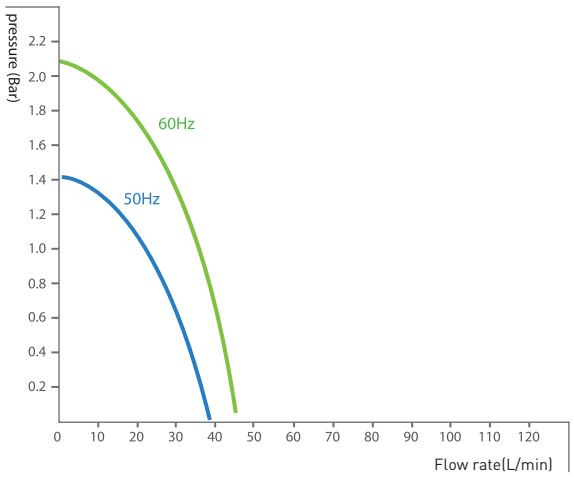
Testing in accordance with **DIN EN 12876**

**Standard accessories**
**see page 128-129**

- 3/4" male to 3/4" male adapters (2ea)
- Ball valves (2ea)

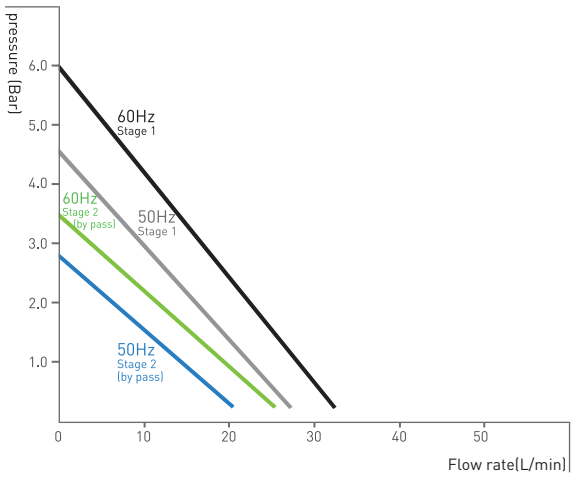
## Pumping capacities (bath fluid: water)

### Magnetic pump




• HX-20, 25

### Centrifugal pump




• HX-20H, 25H, 35H, 45H, 55H

| Model | | HX-20 | HX-25 | HX-20H | HX-25H | HX-35H | HX-45H[2] | HX-55H[2] |
|---|---|---|---|---|---|---|---|---|
| Temperature[1] (bath fluid : water) | Working temperature range (℃ / ℉) | +3 to 40 / +37.4 to 104 | | | | | | |
| | Temperature stability at 15℃ (±℃ / ℉) | 1 / 1.8 | | | | | | |
| Cooling capacity (bath fluid : water) | at 20℃ (kW) | 1.9 | 2.4 | 1.9 | 2.4 | 3.6 | 4.7 | 7.1 |
| | at 10℃ (kW) | 1.4 | 1.7 | 1.4 | 1.7 | 3.1 | 3.6 | 5.1 |
| | at 5℃ (kW) | 1 | 1.4 | 1 | 1.4 | 2.4 | 2.9 | 4.2 |
| Pump | Max. flow rate (L / min, gal / min) | 40 / 10.6 | | 28 / 7.39 | | | | |
| | Max. pressure (bar / psi) | 1.43 / 20.74 | | 4.3 / 62.37 | | | | |
| Dimension | Max. filling capacity (L / cu ft) | 35 / 1.24 | | | | 45 / 1.59 | | |
| | For tubing dia. (mm / inch) | 20 / 3/4 | | | | | | |
| | Filling inlet (Ø, mm / inch) | 50 / 1.9 | | | | | | |
| | Overall (W×L×H, mm / inch) | 620×785×990 / 24.4×30.9×39 | | | | 745×800×1095 / 29.3×31.5×43.1 | | |
| | Net weight (kg / lbs) | 93 / 205 | 101 / 223 | 97 / 214 | 105 / 231 | 120 / 265 | 130 / 287 | 140 / 309 |
| Electrical requirements (230V, 60Hz) | | 8.5A | 9A | 9.3A | 9.8A | 15A | 19A | |
| **Cat. No.** | | **AAH64011K** | **AAH64021K** | **AAH64111K** | **AAH64121K** | **AAH64131K** | **AAH64141K** | - |
| Electrical requirements (230V, 50Hz) | | 7A | 7.6A | 7.9A | 8.8A | 14A | | |
| **Cat. No.** | | **AAH64012K** | **AAH64022K** | **AAH64112K** | **AAH64122K** | **AAH64132K** | - | - |
| Electrical requirements (120V, 60Hz) | | 17A | 22A | | | | | |
| **Cat. No.** | | **AAH64013U** | **AAH64023U** | - | - | - | - | - |
| Electrical requirements (380V, 60Hz) | | | | | | | 10A | 11.5A |
| **Cat. No.** | | - | - | - | - | - | **AAH64149K** | **AAH64159K** |
| Electrical requirements (380V, 50Hz) | | | | | | | 7A | 8.5A |
| **Cat. No.** | | - | - | - | - | - | **AAH64148K** | **AAH64158K** |

1) Technical data according to DIN 12876
2) HX-45H, 55H is recorded by 380V, 60Hz.
※ Above specification value is recorded by 50Hz.
※ Product performance may be affected by ambient temperatures.
※ FDA establishment registered company. FDA listed products.

# Powerful recirculating coolers.

Provide a wide range of cooling capacities with temperature reliability.

## Performance

- Temperature range from -20℃to 40℃.
- High cooling capacity up to 7.1kW at 20℃.
- Powerful circulating pumps up to70L/min., 6 bar.
- Refrigerating system is designed to reduce energy consumption and maximize refrigerating efficiency.

## Convenience

- Designed to simplify operation with a touch screen type display.
  - Easy-to-read VFD display with interactive touch keys.
  - Setting and resolution indication 0.1℃/℉.
  - Quick keypad lock prevents accidental parameter changes.
  - Signal indicator for operation status.
- Bright LED water level indicator can be seen from a distance.
- Built in pressure gauge for checking pump pressure at a glance.
- High/low pressure gauges for condition diagnosis of refrigerating system at a glance. (for H type)
- Wide filling inlet for easy and safe pouring of solution into the unit.
- Double service valve prevents refrigerant leakage for easy maintenance.
- Removable gridded vent for easy maintenance of condenser.
- Built-in casters for easy transport and installation.

## Safety

- Self-diagnostic function identifying errors.
- Complete safety protection system with warning alarms.
  - Low fluid level and dry-running protection; when triggered shows an error symbol on the display and an audible buzzer sound.
  - Over-temperature protection; If the equipment operates at over maximum temperature due to external environment, user can simply identify the error with a visual signal or an audible buzzer sound.
  - Over-current circuit breaker.
- Eco-friendly R-404A / R-507 refrigerant use for environmental protection.
- Splash-proof keypad.

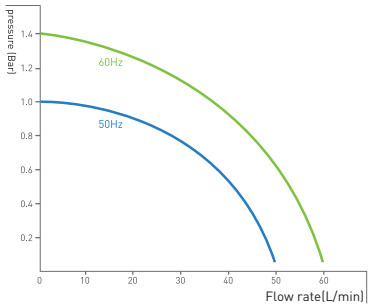
Testing in accordance with **DIN EN 12876**

**Standard accessories**
**see page 128-129**

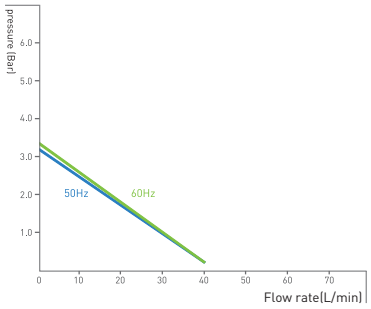
- 3/4" male to 3/4" male adapters (2ea)
- Ball valves (2ea)

## **Pumping capacities** (Bath fluid : ethylene glycol mix 1:1 water)

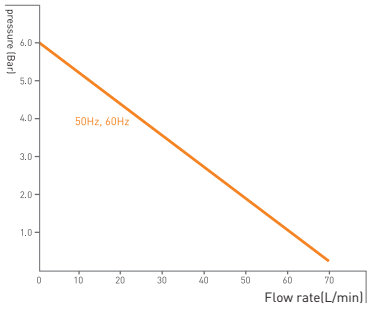
### Submersible pump




• HL-05, 10, 15, 2




• HL-15H, 20H, 25H, 35H



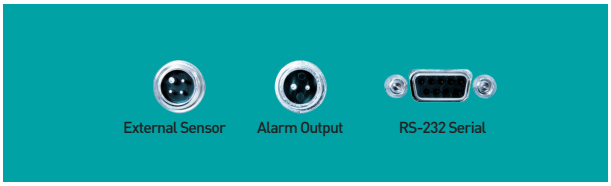

• HL-45H, 55H

| Model | | HL-05 | HL-10 | HL-15 | HL-20 | HL-15H | HL-20H | HL-25H | HL-35H | HL-45H [2] | HL-55H [2] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Temperature [1] (bath fluid : ethylene glycol mix 1:1 water) | Working temp. range (℃ / ℉) | -20 to 40 / -4 to 104 | | | | | | | | | |
| | Temp. stability at 15℃, (±℃ / ℉) | 1 / 1.8 | | | | | | | | | |
| Cooling capacity (bath fluid : ethylene glycol mix 1:1 water) | at 20℃ (kw) | 0.6 | 0.7 | 1.45 | 1.8 | 1.45 | 1.8 | 2.5 | 3.3 | 6.5 | 7.1 |
| | at 10℃ (kw) | 0.5 | 0.6 | 1.15 | 1.5 | 1.15 | 1.5 | 1.8 | 2.3 | 4.5 | 6 |
| | at 0℃ (kw) | 0.35 | 0.42 | 0.86 | 1.15 | 0.86 | 1.15 | 1.1 | 1.7 | 3 | 4.1 |
| | at -10℃ (kw) | 0.18 | 0.32 | 0.62 | 0.85 | 0.62 | 0.85 | 0.65 | 1 | 2.1 | 2.5 |
| | at -20℃ (kw) | 0.04 | 0.14 | 0.3 | 0.40 | 0.3 | 0.4 | 0.4 | 0.55 | 1.2 | 1.5 |
| Pump | Max. flow rate (L / min, gal / min) | 50 / 13.2 | | | | 40 / 10.57 | | | | 70 / 18.49 | |
| | Max. pressure (bar / psi) | 1 / 14.5 | | | | 3.3 / 47.9 | | | | 6 / 87 | |
| Dimension | Max,. filling Capacity (L, cu ft) | 7.5 / 0.26 | | 13.5 / 0.47 | | | | 25 / 0.88 | | 39 /1.37 | |
| | For tubing dia. (mm / inch) | 20 / 3/4 | | | | | | | | | |
| | Filling inlet (Ø, mm / inch) | 120 / 4.7 | | | | | | | | | |
| | Overall (WxLxH, mm / inch) | 405×620×710 / 15.9×24.4×28 | | 515×715× 835 / 20.3×28.1×32.9 | | | | 550×900×1140 / 21.7×35.4×44.9 | | 605×1045×1300 / 23.8×41.4×51.2 | |
| | Net weight (kg / lbs) | 62.85 / 138.6 | 64.85 / 143 | 86.5 / 190.7 | 87.35 / 192.9 | 91.8 / 202.4 | 92.65 / 204.3 | 141.3 / 310.9 | 146.3 / 321.9 | 171 ±10 / 377 ±22 | 176 ±10 / 388 ±22 |
| Electric requirement (230V, 60Hz) | | 5A | 5.5A | 6.5A | 7.5A | 6.5A | 7.5A | 9.5A | 13.5A | | |
| **Cat. No.** | | **AAH65001K** | **AAH65011K** | **AAH65021K** | **AAH65031K** | **AAH65121K** | **AAH65131K** | **AAH65141K** | **AAH65151K** | - | - |
| Electric requirement (230V, 50Hz) | | 4.5A | 5A | 6A | 7A | 6A | 7A | 7.5A | 12.5A | | |
| **Cat. No.** | | **AAH65002K** | **AAH65012K** | **AAH65022K** | **AAH65032K** | **AAH65122K** | **AAH65132K** | **AAH65142K** | **AAH65152K** | - | - |
| Electric requirement (120V, 60Hz) | | 10A | 11A | 13A | 15A | | | | | | |
| **Cat. No.** | | **AAH65003U** | **AAH65013U** | **AAH65023U** | **AAH65033U** | - | - | - | - | - | - |
| Electric requirement (380V, 60Hz) | | | | | | | | | | 5.5A | 7A |
| **Cat. No.** | | - | - | - | - | - | - | - | - | **AAH65169K** | **AAH65179K** |
| Electric requirement (380V, 50Hz) | | | | | | | | | | 5A | 6A |
| **Cat. No.** | | - | - | - | - | - | - | - | - | **AAH65168K** | **AAH65178K** |

1) Technical data according to DIN 12876.
2) HL-45H, 55H is recorded by 380V, 60Hz.
※ Above specification value is recorded by 50Hz.
※ Product performance may be affected by ambient temperatures.
※ CE except for HL-45H/55H.
※ FDA establishment registered company. FDA listed products.

Adjustable, precise PID temperature controller beneficial for various cooling tasks in the science, research, and industrial laboratories.

**REMOTE CONTROL**
with your **MOBILE DEVICE**
**see page 8-9**


Testing in accordance with **DIN EN 12876**

**Standard accessories**
- 3/4" male to 3/4" male adapters (2ea)
- Ball valves (2ea)

**Optional accessories**
- Gateway

**see page 128-129**

## Performance

- Temperature range from -20℃to 40℃.
- High cooling capacity up to 7.1kW at 20℃.
- Powerful circulating pumps up to70L/min., 6 bar.
- Precise temperature stability ± 0.2℃(at 15℃) without heater.
  - Innovative and exclusive controller can adjust the cooling capacity from 1% to 100%.
- Refrigerating system is designed to reduce energy consumption and maximize refrigerating efficiency.

## Convenience

- Designed to simplify operation with a touch screen type display.
  - Setting and resolution indication 0.1℃/℉.
  - Quick keypad lock prevents accidental parameter changes.
- Bright LED water level indicator can be seen from a distance.
- Optional external sensor can be connected for more actual temperature control.
- Built in pressure gauge for checking pump pressure at a glance.
- High/low pressure gauges for condition diagnosis of refrigerating system at a glance. (for H type)
- Wide filling inlet for easy and safe pouring of solution into the unit.
- Double service valve prevents refrigerant leakage for easy maintenance.
- Removable gridded vent for easy maintenance of condenser.
- Built-in casters for easy transport and installation.
- RS-232 interface for external control and data collection.

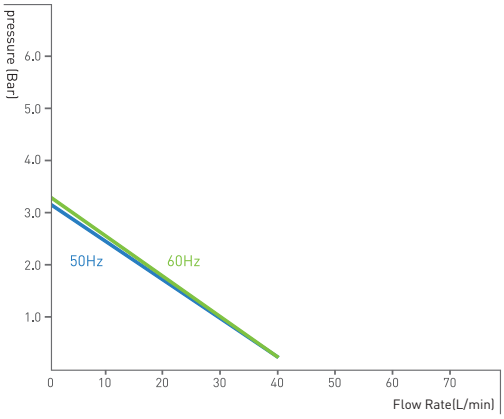
## Safety

- Self-diagnostic function identifying errors.
- Complete safety protection system with warning alarms.
  - Low fluid level and dry-running protection; when triggered shows an error symbol on the display and an audible buzzer sound.
  - Over-temperature protection; If the equipment operates at over maximum temperature due to external environment, user can simply identify the error with a visual signal or an audible buzzer sound.
  - Over-current circuit breaker.
- Eco-friendly R-404A / R-507 refrigerant use for environmental protection.
- Splash-proof keypad.

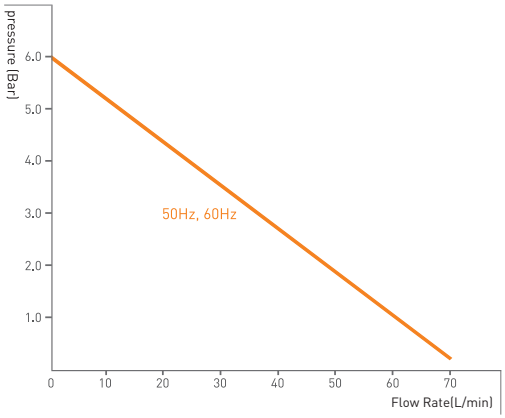
Green CFC-Free | Computer Interface | Full Start Level Indicater

## **Pumping capacities** (bath fluid: water)

### Submersible pump




• HS -15, 20, 25, 35, 45, 55




• HS - 45H, 55H

| Model | | HS-15 | HS-20 | HS-25 | HS-35 | HS-45 | HS-55 | HS-45H[2] | HS-55H[2] |
|---|---|---|---|---|---|---|---|---|---|
| Temperature[1] (bath fluid : ethylene glycol mix 1:1 water) | Working temperature range (℃ / ℉) | -20 to 40 / -4 to 104 | | | | | | | |
| | Temperature stability at 15℃, (±℃ / ℉) | 0.2 / 0.36 | | | | | | | |
| Cooling capacity (bath fluid : ethylene glycol mix 1:1 water) | at 20℃ (kw) | 1.45 | 1.8 | 2.5 | 3.3 | 6.5 | 7.1 | 6.5 | 7.1 |
| | at 10℃ (kw) | 1.15 | 1.5 | 1.8 | 2.3 | 4.5 | 6 | 4.5 | 6 |
| | at 0℃ (kw) | 0.86 | 1.15 | 1.1 | 1.7 | 3 | 4.1 | 3 | 4.1 |
| | at -10℃ (kw) | 0.62 | 0.85 | 0.65 | 1 | 2.1 | 2.5 | 2.1 | 2.5 |
| | at -20℃ (kw) | 0.3 | 0.4 | 0.4 | 0.55 | 1.2 | 1.5 | 1.2 | 1.5 |
| Pump | Max. flow rate (L / min, gal / min) | 40 / 10.57 | | | | | | 70 / 18.49 | |
| | Max. pressure (bar / psi) | 3.3 / 47.86 | | | | | | 6 / 87 | |
| Dimension | Max. filling Capacity (L, cu ft) | 13.5 / 0.47 | | 25 / 0.88 | | 39 /1.37 | | | |
| | For tubing dia. (mm / inch) | 20 / 3/4 | | | | | | | |
| | Filling inlet (Ø, mm / inch) | 120 / 4.7 | | | | | | | |
| | Overall (WxLxH, mm / inch) | 515×715× 835 / 20.3×28.1×32.9 | | 550×900×1140 / 21.7×35.4×44.9 | | 605×1045×1300 / 23.8×41.4×51.2 | | | |
| | Net weight (kg / lbs) | 91.8 / 202.4 | 92.65 / 204.3 | 141.3 / 310.9 | 146.3 / 321.9 | 168 ±10 / 370 ±22 | 173±10 / 381 ±22 | 171 ±10 / 377 ±22 | 176 ±10 / 388 ±22 |
| Electric Requirement (230V, 60Hz) | | 6.5 A | 7.5 A | 9.5 A | 13.5 A | | | | |
| **Cat. No.** | | **AAH66011K** | **AAH66021K** | **AAH66031K** | **AAH66041K** | - | - | - | - |
| Electric Requirement (230V, 50Hz) | | 6 A | 7 A | 7.5 A | 12.5 A | | | | |
| **Cat. No.** | | **AAH66012K** | **AAH66022K** | **AAH66032K** | **AAH66042K** | - | - | - | - |
| Electric Requirement (380V, 60Hz) | | | | | | 5.5 A | 7 A | 5.5 A | 7 A |
| **Cat. No.** | | - | - | - | - | **AAH66259K** | **AAH66469K** | **AAH66359K** | **AAH66569K** |
| Electric Requirement (380V, 50Hz) | | | | | | 5 A | 6 A | 5 A | 6 A |
| **Cat. No.** | | - | - | - | - | **AAH66258K** | **AAH66468K** | **AAH66358K** | **AAH66568K** |

1) Technical data according to DIN 12876.
2) HS-45H, 55H is recorded by 380V, 60Hz.
※ Above specification value is recorded by 50Hz.
※ Product performance may be affected by ambient temperatures.
※ FDA establishment registered company. FDA listed products.

Broad temperature ranging up to 80℃ for various applications. Also integrated heaters greatly provides high temperature stability.

PV SV JeioTech Network **REMOTE CONTROL** with your **MOBILE DEVICE**

**see page 8-9**





Testing in accordance with **DIN EN 12876**

**Standard accessories**
- 3/4" male to 3/4" male adapters (2ea)
- Ball valves (2ea)

**Optional accessories**
- Gateway

**see page 128-129**

## Performance

- Wide temperature range from -20℃to 80℃.
- High cooling capacity up to 7.1kW at 20℃.
- Powerful circulating pumps up to to70L/min., 6 bar.
- Precise temperature stability ± 0.1℃(at 15℃) with integrated heaters.
- Refrigerating system is designed to reduce energy consumption and maximize refrigerating efficiency.

## Convenience

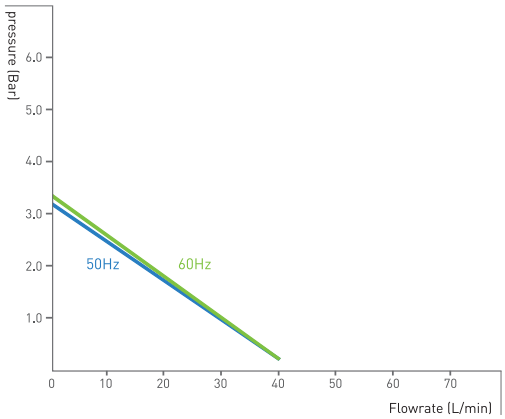
- Designed to simplify operation with a touch screen type display.
  - Setting and resolution indication 0.1℃/℉.
  - Quick keypad lock prevents accidental parameter changes.
- Bright LED water level indicator can be seen from a distance.
- Optional external sensor can be connected for more actual temperature control.
- Built in pressure gauge for checking pump pressure at a glance.
- High/low pressure gauges for condition diagnosis of refrigerating system at a glance. (for H type)
- Wide filling inlet for easy and safe pouring of solution into the unit.
- Double service valve prevents refrigerant leakage for easy maintenance.
- Removable gridded vent for easy maintenance of condenser.
- Built-in casters for easy transport and installation.
- RS-232 interface for external control and data collection.

## Safety

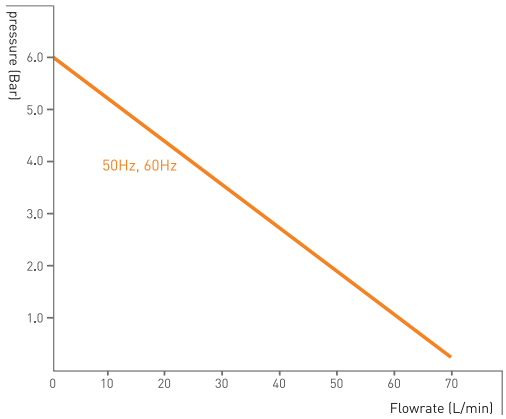
- Self-diagnostic function identifying errors.
- Complete safety protection system with warning alarms.
  - Low fluid level and dry-running protection; when triggered shows an error symbol on the display and an audible buzzer sound.
  - Over-temperature protection; If the equipment operates at over maximum temperature due to external environment, user can simply identify the error with a visual signal or an audible buzzer sound.
  - Over-current circuit breaker.
- Eco-friendly R-404A / R-507 refrigerant use for environmental protection.
- Splash-proof keypad.

## Pumping capacities (bath fluid : ethylene glycol mix 1:1 water)

### Submersible pump




• HH - 15, 20, 25, 35




• HH - 45H, 55H

| Model | | HH-15 | HH-20 | HH-25 | HH-35 | HH-45H[2] | HH-55H[2] |
|---|---|---|---|---|---|---|---|
| Temperature[1] (bath fluid : ethylene glycol mix 1:1 water) | Working temperature range (℃ / ℉) | -20 to 80 / - 4 to 176 | | | | | |
| | Temperature stability at 15℃ (±℃ / ℉) | 0.1 / 0.2 | | | | | |
| Cooling capacity (bath Fluid : ethylene glycol mix 1:1 water) | at 80℃ (kw) | 2 | 2.5 | 3.5 | 4 | 6 | 7.5 |
| | at 40℃ (kw) | 0.9 | 1 | 2.4 | 2.5 | 4.5 | 5 |
| | at 20℃ (kw) | 1.45 | 1.8 | 2.5 | 3.3 | 6.5 | 7.1 |
| | at 0℃ (kw) | 0.86 | 1.15 | 1.1 | 1.7 | 3 | 4.1 |
| | at -20℃ (kw) | 0.3 | 0.4 | 0.4 | 0.55 | 1.2 | 1.5 |
| Heating capacity (kw) | | 2 | | 4 | | 8.4 | |
| Pump | Max. flow rate (L / min, gal / min) | 40 / 10.6 | | | | 70 / 18.5 | |
| | Max. pressure (bar / psi) | 3.3 / 47.9 | | | | 6 / 87.02 | |
| Dimension | Max. filling capacity (L, cu ft) | 13.5 / 0.47 | | 25 / 0.88 | | 39 / 1.37 | |
| | For tubing dia. (mm / inch) | 20 / 3/4 | | | | | |
| | Filling inlet (Ø, mm / inch) | 120 / 4.7 | | | | | |
| | Overall (WxDxH, mm / inch) | 515×715× 835 / 20.3×28.1×32.9 | | 550×900×1140 / 21.7×35.4×44.9 | | 605×1045×1300 / 23.8×41.4×51.2 | |
| | Net weight (kg / lbs) | 92 / 202.8 | 93 / 205 | 142 / 313 | 147 / 324 | 171±10 / 377±22 | 176±10 / 388±22 |
| Electric requirement (230V, 60Hz) | | 15A | 16A | 27A | 31A | | |
| **Cat. No.** | | **AAH67011K** | **AAH67021K** | **AAH67031K** | **AAH67041K** | - | - |
| Electric requirement (230V, 50Hz) | | 14.5A | 15.5A | 25A | 30A | | |
| **Cat. No.** | | **AAH67012K** | **AAH67022K** | **AAH67032K** | **AAH67042K** | - | - |
| Electric requirement (380V, 60Hz) | | | | | | 18.3 | 19.8 |
| **Cat. No.** | | - | - | - | - | **AAH67159K** | **AAH67169K** |
| Electric requirement (380V, 50Hz) | | | | | | 17.8 | 19.3 |
| **Cat. No.** | | - | - | - | - | **AAH67158K** | **AAH67168K** |

1) Technical data according to DIN 12876.
2) HH-45H, 55H is recorded by 380V, 60Hz.
※ Above specification value is recorded by 50Hz.
※ Product performance may be affected by ambient temperatures.
※ Under the condition of no-load operation, cooling capacity should be lower than heating capacity.
※ FDA establishment registered company. FDA listed products.

This compact designed model is ideal for cooling small laboratory equipment in daily use.


## Performance

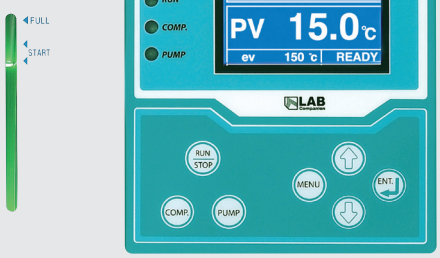
- Temperature range from -10℃to 30℃.
- Refrigerating system is designed to reduce energy consumption and maximize refrigerating efficiency.

## Convenience

- Clear and easy-to-use LCD display. (resolution 0.1℃)
- Bright LED water level indicator can be seen from a distance.
- Wide filling inlet for easy and safe pouring of solution into the unit.
- Double service valve prevents refrigerant leakage for easy maintenance.
- Removable gridded vent for easy maintenance of condenser.
- Compact design for space saving. The unit is suitable for stable temperature cooling compact devices such as rotary evaporators in laboratory.
- Variety of accessories are available to meet application demands.

## Safety

- Self-diagnostic function identifying errors.
- Complete safety protection system with warning alarms.
  - Low fluid level and dry-running protection; when triggered shows an error symbol on the display and an audible buzzer sound.
  - Over-temperature protection; If the equipment operates at over maximum temperature due to external environment, user can simply identify the error with a visual signal or an audible buzzer sound.
  - Over-current circuit breaker.
- Eco-friendly R-507 refrigerant use for environmental protection.
- Splash-proof keypad.




Level indicator LCD display

Testing in accordance with **DIN EN 12876**

**Optional accessories**
**see page 128-129**

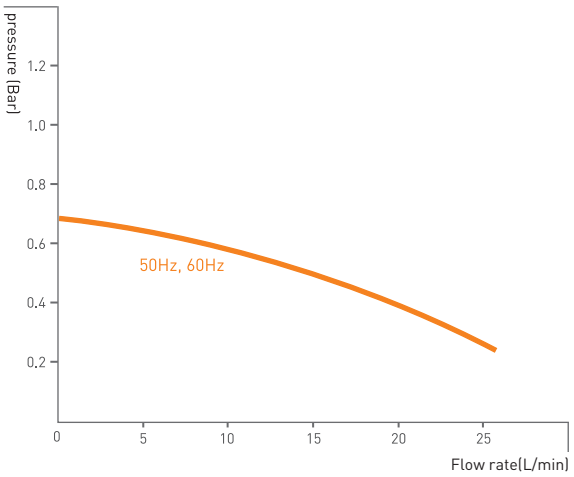
- Adapters
- Tubing, Insulations
- Tube clamps
- Bath fluid

Green CFC-Free

Full Start Level Indicater

## **Pumping capacities** (bath fluid: ethanol)

### Magnetic pump





• RC-05

| Model | | RC-05 |
|---|---|---|
| Temperature[1] | Working temperature range (℃ / ℉) | -10 to 30 / 14 to 86 |
| | Temperature stability at 15℃ (±℃ / ℉) (bath fluid : water) | 1 / 1.8 |
| Cooling capacity (bath fluid : ethanol) | at 20℃ (kW) | 0.58 |
| | at 10℃ (kW) | 0.45 |
| | at 0℃ (kW) | 0.35 |
| | at -10℃ (kW) | 0.27 |
| | at -20℃ (kW) | 0.11 |
| Pump | Max. flow rate (L / min, gal / min) | 26 / 6.87 |
| | Max. pressure (bar / psi) | 0.7 / 10.15 |
| Dimension | Max. filling capacity (L / cu ft) | 5 / 0.18 |
| | For tubing dia. (mm / inch) | 9.5 / 3/8 |
| | Filling inlet (Ø, mm / inch) | 120 / 4.7 |
| | Overall (WxLxH, mm / inch) | 300×550×530 / 11.8×21.7×20.9 |
| | Net weight (kg / lbs) | 45 / 99.2 |
| Electrical requirements (230V, 60Hz) | | 4A |
| **Cat. No.** | | **ACH651011K** |
| Electrical requirements (230V, 50Hz) | | 4A |
| **Cat. No.** | | **ACH651012K** |

1) Technical data according to DIN 12876.
※ Above specification value is recorded by 60Hz.
※ Product performance may be affected by ambient temperatures.

## Gateway

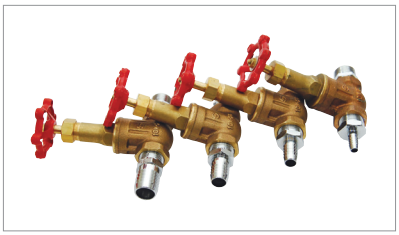
| Cat. No. | Description | Suitable for |
|---|---|---|
| AAAQ1011 | Gateway (2.4GHz, 100~240V, 50/60Hz) | HS, HH models |

Gateway

Establish Jeio Tech Network by Gateway. No computer use is required at all.

## Barbed fittings

| Cat. No. | Description |
|---|---|
| HXE1066 | 3/4" male to barbed fitting for tubing 1" inner dia. |
| HXE1067 | 3/4" male to barbed fitting for tubing 3/4" inner dia. |
| HXE1068 | 3/4" male to barbed fitting for tubing 5/8" inner dia. |
| HXE1069 | 3/4" male to barbed fitting for tubing 1/2" inner dia. |
| HXE1070 | 3/4" male to barbed fitting for tubing 3/8" inner dia. |
| AAA64501 | 1" barbed fittings set with ball valve |
| AAA64502 | 3/4" barbed fittings set with ball valve |
| AAA64503 | 5/8" barbed fittings set with ball valve |
| AAA64504 | 1/2" barbed fittings set with ball valve |
| AAA64505 | 3/8" barbed fittings set with ball valve |
| AAA64506 | 1" barbed fittings set with gate valve |
| AAA64507 | 3/4" barbed fittings set with gate valve |
| AAA64508 | 5/8" barbed fittings set with gate valve |
| AAA64509 | 1/2" barbed fittings set with gate valve |
| AAA64510 | 3/8" barbed fittings set with gate valve |



Barbed fittings

Geared for quick connecting of various size type tubes using pipe fittings, tube fittings, and hose fittings without tools.

## Connectors / Adapters

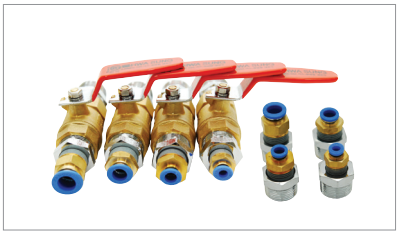
| Cat. No. | Description |
|---|---|
| HXE1105 | 3/4" male to 3/4" female |
| HXE1106 | 3/4" male to 5/8" female |
| HXE1107 | 3/4" male to 1/2" female |
| HXE1108 | 3/4" male to 3/8" female |
| HXE1109 | 3/4" male to 3/4" male |
| HXE1110 | 3/4" male to 5/8" male |
| HXE1111 | 3/4" male to 1/2" male |
| HXE1112 | 3/4" male to 3/8" male |

Connectors / Adapters

Connect tubing or other devices.

## One touch adapters set

| Cat. No. | Description | |
|---|---|---|
| HXE1075 | 12mm one touch adapter | ID. 9mm, OD. 12mm |
| HXE1076 | 10mm one touch adapter | ID. 6.5mm, OD. 10mm |
| HXE1077 | 8mm one touch adapter | ID. 5.5mm, OD. 8mm |
| HXE1078 | 6mm one touch adapter | ID. 4mm, OD. 6mm |
| AAA64531 | 12mm adapters set with ball valve | |
| AAA64532 | 10mm adapters set with ball valve | |
| AAA64533 | 8mm adapters set with ball valve | |
| AAA64534 | 6mm adapters set with ball valve | |

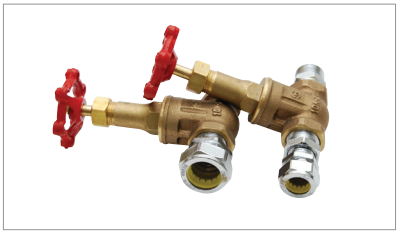


One touch adapters set

Convenient to connect and exchange tubing.

## Flexible fittings

| Cat. No. | Description |
|---|---|
| HXE1071 | 3/4" male to 3/4" flexible fitting |
| HXE1072 | 3/4" male to 1/2" female with 1/2" male to 1/2" flexible fitting |
| AAA64521 | 3/4" flexible fittings set with ball valve |
| AAA64522 | 1/2" flexible fittings set with ball valve |
| AAA64523 | 3/4" flexible fittings set with gate valve |
| AAA64524 | 1/2" flexible fittings set with gate valve |

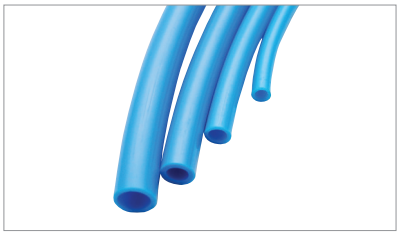


Flexible fittings

Stainless steel tubing designed for superior flexibility and with good chemical resistance.

## Tubings

| Cat. No. | Description | |
|---|---|---|
| HXE1079 | 1m 12mm urethane tubing | ID. 9mm, OD. 12mm |
| HXE1080 | 1m 10mm urethane tubing | ID. 6.5mm, OD. 10mm |
| HXE1081 | 1m 8mm urethane tubing | ID. 5.5mm, OD. 8mm |
| HXE1082 | 1m 6mm urethane tubing | ID. 4mm, OD. 6mm |
| HXE1083 | 1m 1" PVC tubing with thread | ID. 25mm, OD. 31mm |
| HXE1084 | 1m 3/4" PVC tubing with thread | ID. 19mm, OD. 24mm |
| HXE1085 | 1m 5/8" PVC tubing with thread | ID. 16mm, OD. 20.5mm |
| HXE1086 | 1m 1/2" PVC tubing with thread | ID. 12mm, OD. 16.0mm |
| HXE1087 | 1m 3/8" PVC tubing with thread | ID. 10mm, OD. 14mm |
| HXE1088 | 1m 1" PVC tubing with wire | ID. 25mm, OD. 33mm |
| HXE1089 | 1m 3/4" PVC tubing with wire | ID. 19mm, OD. 26mm |
| HXE1090 | 1m 5/8" PVC tubing with wire | ID. 15mm, OD. 22mm |
| HXE1091 | 1m 1/2" PVC tubing with wire | ID. 12mm, OD. 18mm |
| HXE1092 | 1m 3/8" PVC tubing with wire | ID. 9mm, OD. 15mm |



Tubings

Excellent heat resistance and corrosion resistance urethane tubing.

## Tubing insulations

| Cat. No. | Description |
|---|---|
| HXE1093 | EPDM insulation, 16mm inner dia. (9T) |
| HXE1094 | EPDM insulation, 19mm inner dia. (9T) |
| HXE1095 | EPDM insulation, 25mm inner dia. (9T) |
| HXE1096 | EPDM insulation, 28mm inner dia. (9T) |
| HXE1097 | EPDM insulation, 35mm inner dia. (9T) |

Tubing insulations

EPDM insulation is used to reduce heat loss and condensation from cold water plumbing, chilled water, and refrigeration lines.

## Flexible tubing

| Cat. No. | Description |
|---|---|
| HXE1073 | 3/4" flexible tubing (SUS 304, m) |
| HXE1074 | 1/2" flexible tubing (SUS 304, m) |

## Tube clamps

| Cat. No. | Description |
|---|---|
| HXE1098 | 1" clamp |
| HXE1099 | 3/4" clamp |
| HXE1100 | 5/8" clamp |
| HXE1101 | 1/2" clamp |
| HXE1102 | 3/8" clamp |

Tube clamps

Corrosion resistant stainless steel clamps

## Distributing fittings

| Cat. No. | Description |
|---|---|
| AAA64541 | 3-way distributing barbed fittings set (1/4") |
| AAA64542 | 3-way distributing barbed fittings set (3/8") |

Distributing fittings

Distributing fittings connect even with small tubes with barb fittings.

## External sensor (for HS, HH)

| Cat. No. | Description |
|---|---|
| CFA1946 | 3m cable for Pt 100 sensor |