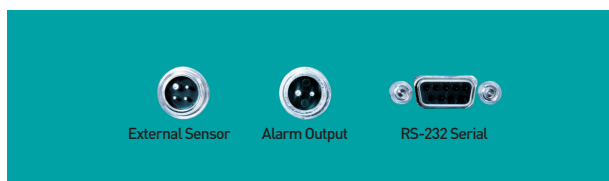# Recirculating Coolers (High Temp.)

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

Digital controller

Temp. limit & RS-232 serial & etc

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.

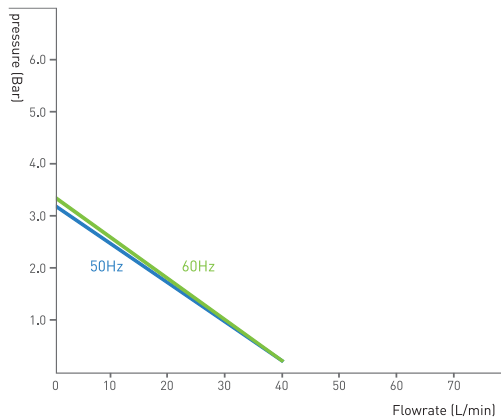Testing in accordance with **DIN EN 12876**

Standard accessories
see page **120-121**
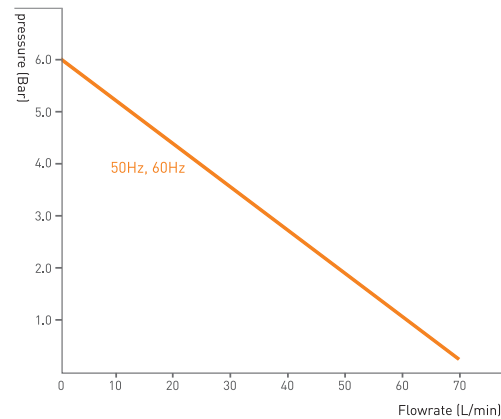- 3/4″ male to 3/4″ male adapters (2ea)
- Ball valves (2ea)

Lab Companion

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.

Accessories & Options

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

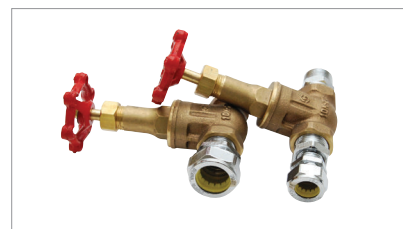| Cat. No.	Description	
HXE1075	12mm one touch adapter	ID. 9mm, OD. 12mm
HXE1076	10mm one touch adapter	ID. 6.5mm, OD. 10mm
HXE1077	8mm one touch adapter	ID. 5.5mm, OD. 8mm
HXE1078	6mm one touch adapter	ID. 4mm, OD. 6mm
AAA64531	12mm adapters set with ball valve	
AAA64532	10mm adapters set with ball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

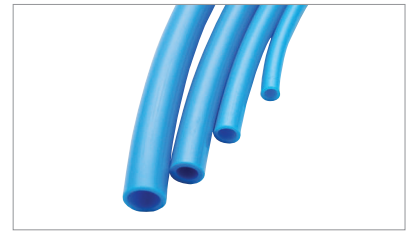| Cat. No.	Description
HXE1071	3/4" male to 3/4" flexible fitting
HXE1072	3/4" male to 1/2" female with 1/2" male to 1/2" flexible fitting
AAA64521	3/4" flexible fittings set with ball valve
AAA64522	1/2" flexible fittings set with ball valve
AAA64523	3/4" flexible fittings set with gate valve
AAA64524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

Flexible fittings

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

Lab Companion

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

Bath fluid

Cat. No.	Description
HXE1113	Distilled water (20L)
HXE1114	Ethylene glycol (4L)
HXE1115	Ethylene glycol (20L)

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