



Small goods with

# Great Performance





Habor Precise Industries (Taiwan)



Habor Precise Machine (ZheJiang)

Extremely precise  
Environmental friendly  
Energy saving

- HABOR (Shanghai)
- HABOR (Zhejiang)
- HABOR Headquarter (Taiwan)

- 3 - 9 Oil Cooler Series
- 10 - 17 Water Cooler Series
- 18 - 19 Air Cooler Series / Heat Pipe Heat Exchanger Series
- 20 - 22 Ventilation Filter With Fan Series
- 23 Air Dryer Series
- 26 Electronic Controller

**PID V Series** PID Controlled : Control the coolant temperature with the precision of +/- 0.2°C by PID controlled proportional value.

**ON / OFF** ON/OFF Controlled : Control the coolant temperature within +/- 1°C

Application / Series	HBO	HK	HJ	HE	HW	HA	HPW/HPC	FU	HRD
	Oil Cooler				Water Cooler	Air Cooler	Heat Exchanger	Ventilation Filter With Fan	Air Dryer
High Speed Spindle	●	●			●				●
Linear Motor	●	●			●				
Ball Screw	●	●							
Hydraulic System	●				●				
Coolant		●	●						
CNC Cutting Machine	●	●	●		●	●	●	●	●
Laser Machine					●	●	●	●	●
CNC Lathe	●	●	●			●	●	●	●
Machining Center	●	●	●	●	●	●	●	●	●
EDM				●					
WireCut Machine					●	●	●	●	
PCB Drilling Machine	●				●	●	●	●	●
Injection Machine					●	●	●	●	
Semi Con Industrial Machine					●				●
Medical Equipment					●				
Printing Equipment					●				
Electronic or Electric Cabinets						●	●	●	
Tele-communication Equipment						●	●		
CNC Control Equipment						●	●	●	

# Oil Cooler Series



## HBO Series

Oil cooler for lubrication oil, hydraulic oil

## HK Series

Oil cooler for grinding liquid, cutting liquid

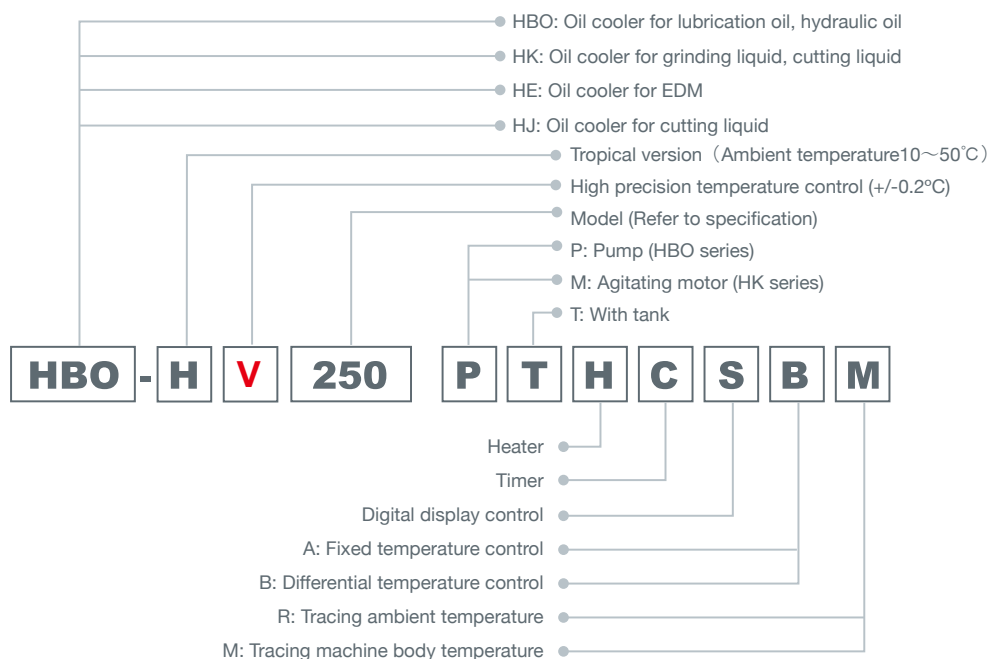
## HJ Series

Oil cooler for cutting liquid

## HE Series

Oil cooler for EDM

### ▲ EX. : HBO-250PTSBM

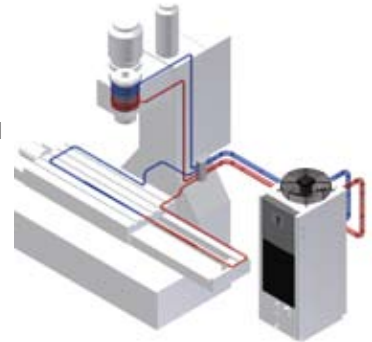


# HBO Series Oil Cooler for Hydraulic Oil, Lubrication Oil



## Feature

- Prevent temperature increasing of spindle, improve working precision of machine.
- Prevent deviation of spindle center line or heat deformation of machine.
- Extend the lifetime of the machine.
- Stabilize oil pressure, prevent oil vibration.
- Easy operation, low noise.



## Specification

Item / Model		HBO-50PS	HBO-250PS	HBO-400PS	HBO-600PS	HBO-750PS	HBO-900PS	HBO1000PS	HBO-2RPS	HBO-3RPS	HBO-4RPS	HBO-5RPS	
Cooling capacity	KCAL/H 50/60Hz	430/500	840/1000	1250/1500	1700/2100	2600/3000	3200/3800	3750/4500	5000/6000	7500/9000	10000/12000	12500/15000	
	W 50/60Hz	500/580	980/1170	1450/1750	1970/2450	2900/3500	3700/4400	4350/5250	5820/6980	8720/10470	11630/13960	14540/17450	
	BTU/H 50/60Hz	1720/2000	3360/4000	5000/6000	6700/8400	10000/12000	12800/15200	15000/18000	20000/24000	30000/36000	40000/48000	50000/60000	
Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)											
	B	Differential temperature control type (tracing ambient/machine body temperature, setting range -9.9~+9.9 °C)											
Use range	Ambient temperature °C	10~40°C (Standard)											
	Oil temperature °C	10~45°C											
Power source		3Ø 200~230V 50/60Hz											
Motor	Compressor	250	478	845	845	1185	1500	1700	2480	3350	4400	6100	
	Fan	200				180		350			500		
	Pump	200				400		750			2200		
Pump flow rate (L/min)	50Hz	3.7		6.7		16.6		25	33		57	64	
	60Hz	4.5		8		20		30	40		68	77	
Piping diameter	Inlet	PT 1/4"	PT 1/2"			PT 1"		PT 1"		PT 1-1/4"			
	Outlet	PT 1/4"	PT 1/2"			PT 1"		PT 1"		PT 1-1/4"			
Max. pressure loss (kgf/cm <sup>2</sup> )		3.0											
Oil viscosity		Hydraulic oil, lubrication oil 4-300 cSt											
Tank capacity (optional)		2.5L	7L	19L		20L		20L	35L	31L	90L		
Dimension WxDxH (mm)	Without tank	270x475x436		370x475x765	370x475x840	575x430x1045		480x580x1340		500x770x1295		554x690x1525	1085x740x1400
	With tank	270x475x436		370x475x950	370x475x1030	575x430x1200		550x580x1340		500x770x1295		554x690x1525	1085x780x1400
Weight (KG)	Without tank	33	51	61	66	96		147	176	181	291		
	With tank	34	54	71	77	118		150	179	208	325		
Noise level		Below 70 dB(A)							Below 80 dB(A)				

1. The above cooling capacity is based on the condition of ambient temperature 35 °C, outlet oil temperature 35°C with oil type of ISO VG32.

2. Please contact us for special request on specification.

3. Different voltage is available, please specify upon request.

4. Design and specification are subject to change without prior notice.

5. The oil tank is an optional component, please specify during enquiry.

# HK HJ HE

**Series** Oil cooler for grinding liquid, cutting liquid

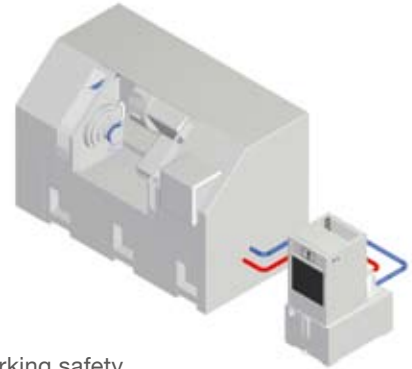
**Series** Oil cooler for cutting liquid

**Series** Oil cooler for E.D.M.



## Feature

- Prevent deterioration of liquid.
- Open coil type heat exchanger can prevent the obstruction problem of liquid circulating system.
- Advance the speed of process.
- Maintain the stability of dielectric fluid, advance the process quality.
- Avoid fire risk cause by temperature rise and accumulating of dielectric fluid, advance the working safety.
- Reduce the wastage of electrode.
- Prevent the spreading of foul odor air, reduce the air pollution.
- Easy operation and low noise.
- Made of anticorrosive material.



## Specification

Item / Model		HK-250S	HK-400S	HK-600S	HK-750S	HK-900S	HK-1000S	HK-2RS	HK-3RS	HK-4RS	HK-5RS
Cooling capacity	KCAL/H 50/60Hz	840/1000	1250/1500	1700/2100	2600/3000	3200/3800	3750/4500	5000/6000	7500/9000	10000/12000	12500/15000
	W 50/60Hz	980/1170	1450/1750	1970/2450	2900/3500	3700/4400	4350/5250	5800/7000	8700/10500	11600/14000	14500/17500
	BTU/H 50/60Hz	3360/4000	5000/6000	6700/8300	10000/12000	12800/15200	15000/18000	20000/24000	30000/36000	40000/48000	50000/60000
Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)									
	B	Differential temperature control type (tracing ambient/machine body temperature, setting range -9.9~+9.9°C)									
Use range	Ambient temperature °C	10~40°C (Standard)									
	Oil temperature °C	10~45°C									
Power source		3Ø 200~230V 50/60Hz									
Motor	Compressor	478	845	845	1185	1500	1170	2320	3690	4540	6210
	Fan	50	50	50	95	125	125	125	560	750	750
Mixing motor (Optional)		60W 4P						60W 4Px2			
Applicable liquid		Cutting oil, grinding oil, water-soluble liquid, water									
Applicable oil viscosity		0.5~200 cSt									
Dimension WxDxH (mm)		370x450x810	460x450x720		530x500x720	600x600x820	600x600x820	740x680x840	810x750x920		960x885x1760
Weight (KG)		332	60	64	75	100	100	150	178	332	332
Noise level		Below 70 dB(A)						Below 80 dB(A)			

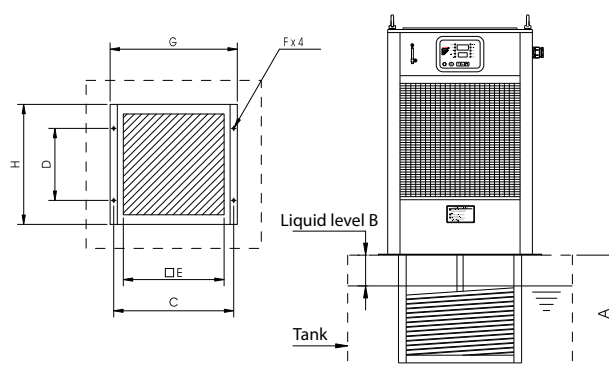
1. The above cooling capacity is based on the condition of ambient temperature 35°C, oil temperature 35°C with oil type of ISO VG2.

2. Please contact us for special request on specification.

3. Different voltage is available, please specify upon request.

4. Design and specification are subject to change without prior notice.

5. The mixing motor is an optional component, please specify during enquiry.



### Opening Dimension Of Oil Tank

Model	A	B	C	D	E	F	G	H
HK-250S	200	45	390	360	240	M8	420	440
HK-400S	350	100	430	250	340	M8	460	450
HK-600S	350	100	430	250	340	M8	460	450
HK-750S	350	100	500	300	420	M8	530	500
HK-1000S	420	100	570	400	470	M10	600	600
HK-2RS	420	100	710	480	620	M10	740	680
HK-3RS	420	100	780	550	670	M10	810	750
HK-4RS	420	100	905	760	750	M12	960	885
HK-5RS	420	100	905	760	750	M12	960	885

The dimension of the oil tank has to be deeper than A, longer than G and wider than H, and the height of the liquid level should be within the range of B.

- Please note, if the liquid level does not cover up the cooling coil, the cooling capacity of the cooler will be greatly reduced as well as the result of moisture created to mix with the liquid.
- Please note that the high temperature liquid should be mixed well with the low temperature liquid before flow into the cooling tank.

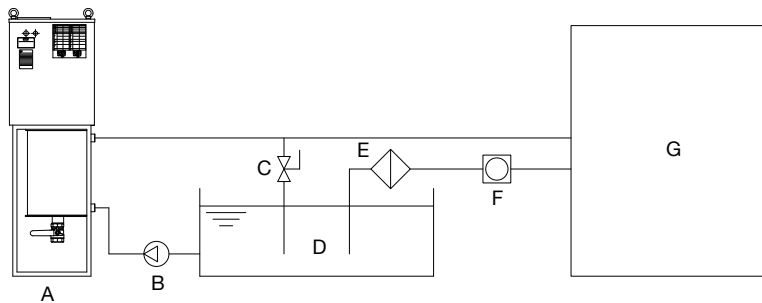
### Specification

Item / Model		HE-250S	HE-400S	HE-600S	HE-750S	HE-900S	HE-1000S	HE-2RS	HE-3RS
Cooling capacity	KCAL/H 50/60Hz	840/1000	1250/1500	1700/2100	2600/3000	3200/3800	3750/4500	5000/6000	7500/9000
	W 50/60Hz	980/1170	1450/1750	1970/2450	2900/3500	3700/4400	4350/5250	5820/6980	8720/10470
	BTU/H 50/60Hz	3360/4000	5000/6000	6700/8400	10000/12000	12800/15200	15000/18000	20000/24000	30000/36000
Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)							
	B	Differential temperature control type (tracing ambient/machine body temperature, setting range -9.9~+9.9 °C)							
Use range	Ambient temperature °C	10~40 °C (Standard)							
	Oil temperature °C	10~45 °C							
Power source		3Ø 200~230V 50/60Hz							
Motor	Compressor	478	845		1185	1500	1700	2480	3350
	Fan	50			180		350		
Piping diameter	Inlet	PT 1/2"			PT 1"				PT 1-1/4"
	Outlet	PT 1/2"			PT 1"				PT 1-1/4"
Dimension WxDxH (mm)		370x450x925	370x475x765	370x475x840	575x430x1045		480x580x1340	500x770x1295	554x690x1525
Weight (KG)		39	61		73		110	120	160
Noise level		Below 70 dB(A)						Below 80 dB(A)	

- The above cooling capacity is based on the condition of ambient temperature 35°C, oil temperature 35°C with oil type of ISO VG2.
- Please contact us for special request on specification.
- Different voltage is available, please specify upon request.
- Design and specification are subject to change without prior notice.
- The mixing motor is an optional component, please specify during enquiry.**

### Circulation Diagram

- A: Oil cooler
- B: Pump
- C: Bypass
- D: Oil tank
- E: Filter
- F: Magnetic separator
- G: Machine tool



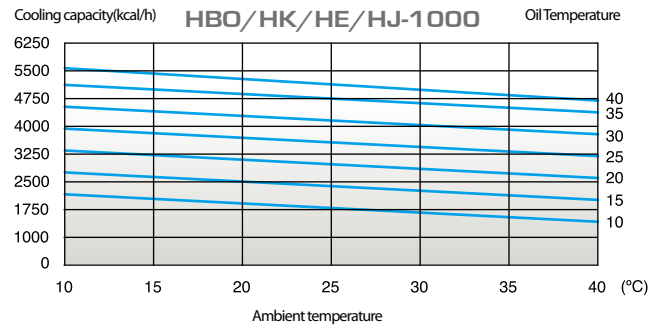
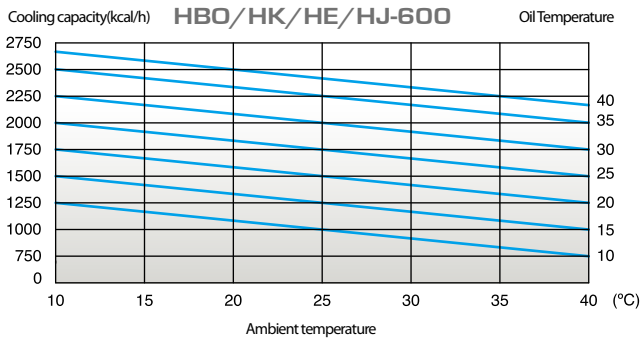
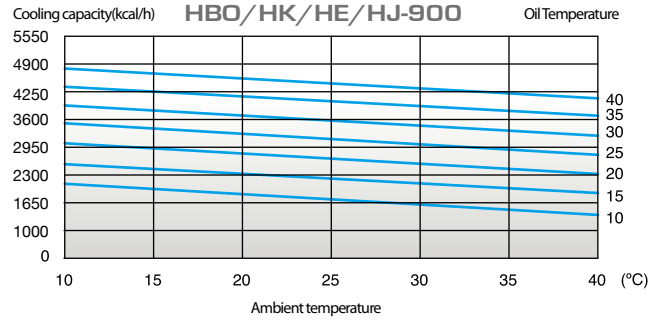
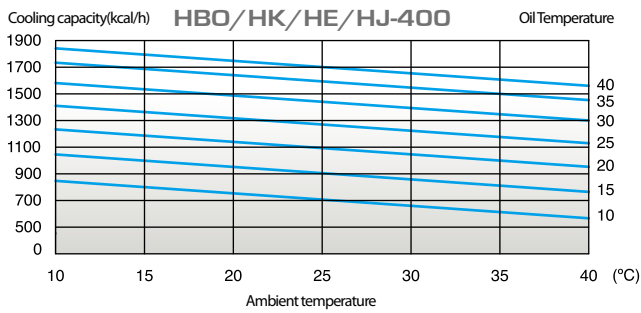
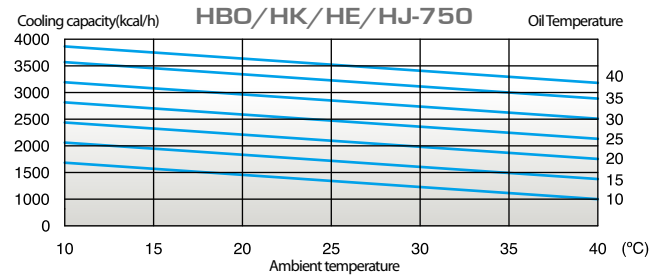
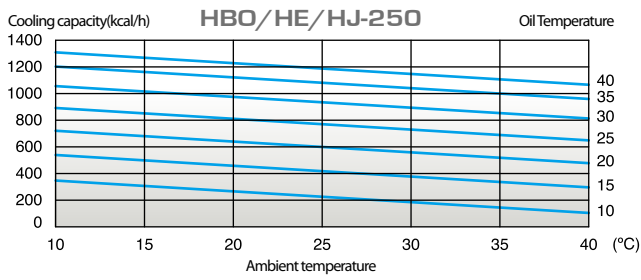
### Specification

Item / Model		HJ-250S	HJ-400S	HJ-600S	HJ-750S	HJ-900S	HJ-1000S	HJ-2RS	
Cooling capacity	KCAL/H 50/60Hz	840/1000	1400/1500	1700/2100	2600/3000	3200/3800	3750/4500	5000/6000	
	W 50/60Hz	980/1170	1630/1750	1980/2450	3030/3500	3700/4400	4360/5240	5820/6980	
	BTU/H 50/60Hz	3360/4000	5600/6000	6800/8400	10000/12000	12800/15200	15000/18000	20000/24000	
Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)							
	B	Differential temperature control type (tracing ambient/machine body temperature, setting range -9.9~+9.9°C)							
Use range	Ambient temperature °C	10~40°C (Standard)							
	Oil temperature °C	10~45°C							
Power source		3Ø 200~230V 50/60Hz							
Motor	Compressor	478	845		1185	1500	1700	2480	
	Fan	50			95	125	180	350	
Piping diameter	Inlet	PT 1"							
	Outlet	PT 1"							
Dimension WxDxH (mm)		368x445x1275	408x454x1420		434x970x1035		547x604x1500	620x1080x1260	
Weight (KG)		90	96		108	150		208	
Noise level		Below 70 dB(A)							Below 80 dB(A)

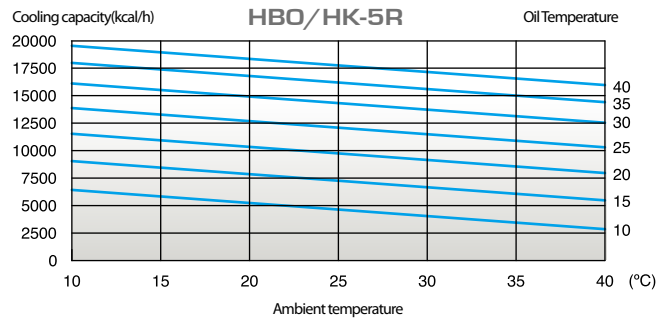
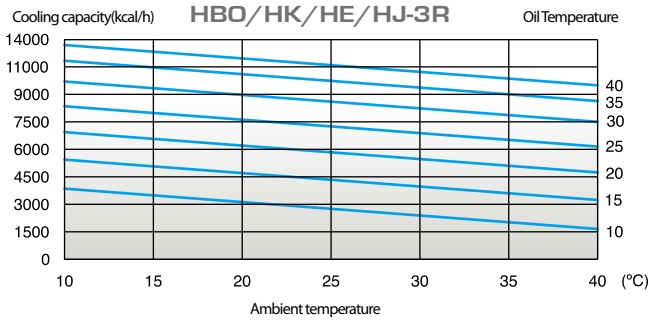
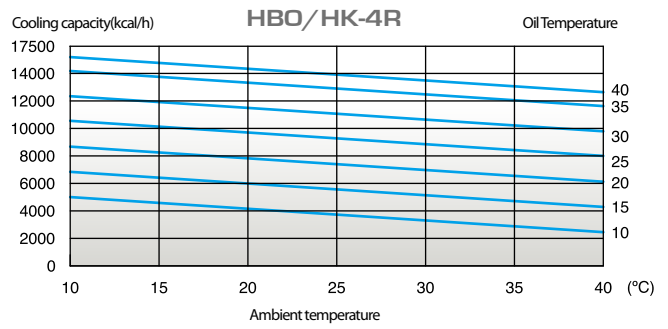
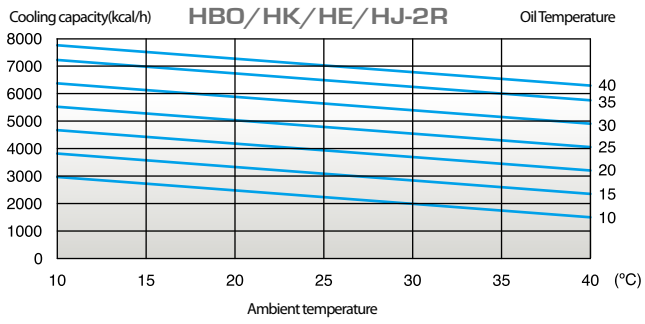
1. The exterior filter, pump/pump motor and the magnetic separator is not supplied with the cooler.
2. The above cooling capacity is based on the condition of ambient temperature 35°C, oil temperature 35°C with oil type of ISO VG2 .
3. Please contact us for special request on specification.
4. Design and specification are subject to change without prior notice.



PERFORMANCE CURVE OF OIL COOLER



PERFORMANCE CURVE OF OIL COOLER



▲ NOTE. The above data is based on the condition of 60Hz

# Water Cooler



**HWV Series**  
Water Cooler - Vertical Without Tank

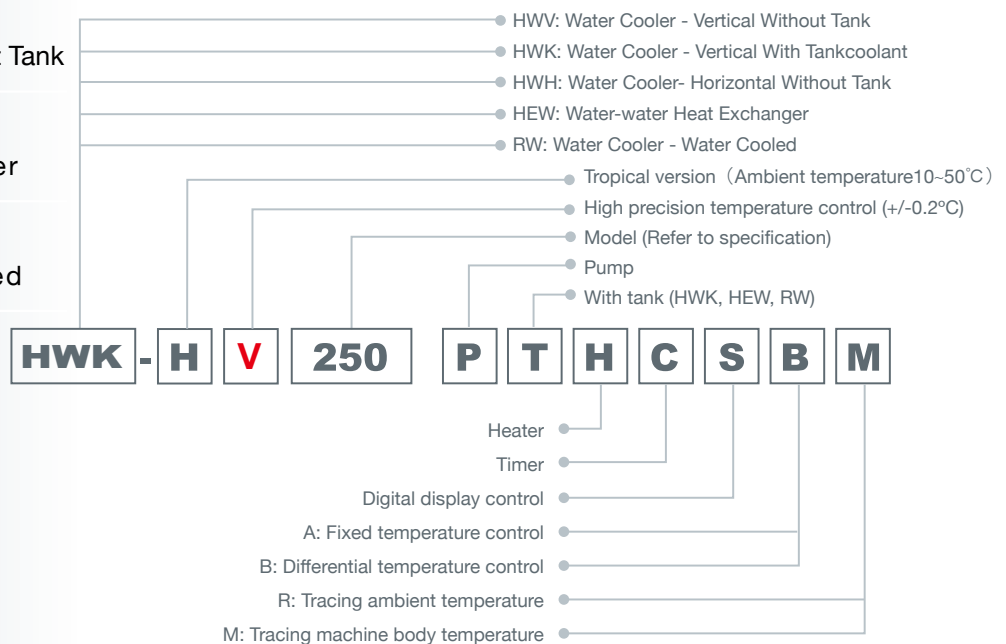
**HWK Series**  
Water Cooler - Vertical With Tank

**HWH Series**  
Water Cooler- Horizontal Without Tank

**HEW Series**  
Water-water Heat Exchanger

**RW Series**  
Water Cooler - Water Cooled

▲ EX. : HWK-250PTSBM

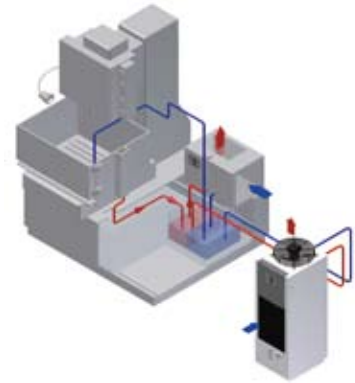


# HW Series Water Cooler



## Feature

- Precisely control temperature of industrial machines, improve production efficiency and reduce cost.
- Use stainless steel for water circuit
- Multi-safety devices are equipped to secure the safety of operator and machine.
- No need for cooling water tower (HWV, HWK, HWH).
- No heat exhaust (HEW, RW).



## Specification Water Cooler - Vertical With Tank

Item / Model		HWK-50PTS	HWK-250PTS	HWK-400PTS	HWK-600PTS	HWK-750PTS	HWK-900PTS	HWK-1000PTS	HWK-2RPTS	HWK-3RPTS	HWK-4RPTS	HWK-5RPTS
Cooling capacity	KCAL/H 50/60Hz	450/500	840/1000	1400/1500	1700/2100	2600/3000	3200/3800	3750/4500	5000/6000	7500/9000	10000/12000	12500/15000
	W 50/60Hz	525/580	980/1170	1630/1750	1980/2450	2900/3500	3700/4400	4350/5250	5820/6980	8720/10470	11630/13960	14540/17450
	BTU/H 50/60Hz	1800/2000	3360/4000	5600/6000	6800/8400	10000/12000	12800/15200	15000/18000	20000/24000	30000/36000	40000/48000	50000/60000
Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)										
	B	Differential temperature control type (tracing ambient/machine body temperature, setting range -9.9~+9.9 °C)										
Use range	Ambient temperature °C	10~40 °C (Standard)										
	Liquid temperature °C	10~30 °C										
Power source		3Ø 200~230V 50/60Hz										
Motor	Compressor	460			740	1136	1450	1700	2480	3350	4400	5500
	Fan	56	50	95		180			350		500	
	Pump	120	750						1510			
Pump flow rate (L/min)	50Hz	2	40						60	80		
	60Hz	3.5	50						80	130		
Max Lift from pump(M)	50Hz	30	28						36			
	60Hz	38	40						53			
Piping diameter	Inlet	PT 1/2"			PT 3/4"				PT 1"		PT 3/4"	
	Outlet	PT 1/2"			PT 3/4"				PT 1"		PT 3/4"	
Water tank capacity		7L	13L	35L				22L	40L	90L		
Dimension WxDxH (mm)		367x508x567		370x483x925		425x500x1100		430x640x1295		550x770x1295	553x677x1430	1085x780x1400
Weight (KG)		48	69	95		107		112	150	218	253	
Noise level		Below 70 dB(A)						Below 80 dB(A)				

The cooling capacity stated above is based on the condition of liquid temperature 22°C, Ambient temperature of 32°C and 60Hz.



### Specification

### Water Cooler - Vertical Without Tank

Item / Model		HWV-250PS	HWV-400PS	HWV-600PS	HWV-750PS	HWV-900PS	HWV-1000PS	HWV-2RPS	HWV-3RPS	HWV-4RPS	HWV-5RPS	
Cooling capacity	KCAL/H 50/60Hz	840/1000	1400/1500	1700/2100	2600/3000	3200/3800	3750/4500	5000/6000	7500/9000	10000/12000	12500/15000	
	W 50/60Hz	980/1170	1630/1750	1970/2450	2900/3500	3700/4400	4350/5250	5820/6980	8720/10470	11630/13960	14540/17450	
	BTU/H 50/60Hz	3360/4000	5600/6000	6700/8300	10000/12000	12800/15200	15000/18000	20000/24000	30000/36000	40000/48000	50000/60000	
Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)										
	B	Differential temperature control type (tracing ambient/machine body temperature, setting range -9.9~+9.9 °C)										
Use range	Ambient temperature °C	10~40°C (Standard)										
	Liquid temperature °C	10~30°C										
Power source		3Ø 200~230V 50/60Hz										
Motor	Compressor	478	845	845	1185	1500	1700	2480	3350	4400	5500	
	Fan	50	180					350		500		
	Pump	57		80	750				1080			
Pump flow rate (L/min)	50Hz	27		32	58				100			
	60Hz	31		38	75				150			
Max Lift from pump(M)	50Hz	3.1		3.8	28							
	60Hz	4.3		5.4	40							
Piping diameter	Inlet	PT 1/2"	PT 1"						PT 3/4"			
	Outlet	PT 1/2"	PT 1"						PT 3/4"			
Dimension WxDxH (mm)		360x472x687		575x430x1045			480x580x1340	500x732x1295	554x660x1535	1085x780x1400		
Weight (KG)		51	73	73	75	75	105	152	180	253		
Noise level		Below 70 dB(A)						Below 80 dB(A)				

The cooling capacity stated above is based on the condition of liquid temperature 22°C, Ambient temperature of 32°C and 60Hz.



## Specification

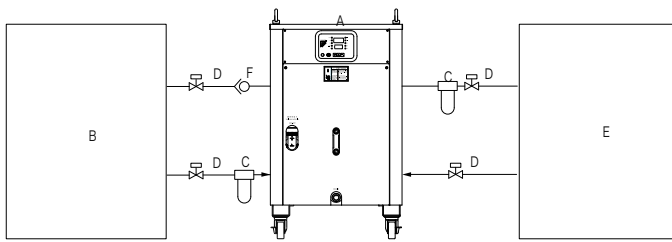
## Water Cooler- Horizontal Without Tank

Item / Model		HWH-250PS	HWH-400PS	HWH-600PS	HWH-750PS	HWH-900PS	HWH-1000PS
Cooling capacity	KCAL/H 50/60Hz	840/1000	1250/1500	1700/2100	2600/3000	3200/3800	3750/4500
	W 50/60Hz	980/1170	1450/1750	1970/2450	2900/3500	3700/4400	4350/5250
	BTU/H 50/60Hz	3300/4000	5000/6000	6700/8300	10000/12000	12800/15200	15000/18000
Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)					
	B	Differential temperature control type (tracing ambient/machine body temperature, setting range -9.9~+9.9°C)					
Use range	Ambient temperature °C	10~40°C (Standard)					
	Liquid temperature °C	10~30°C					
Power source		3Ø 200~230V 50/60Hz					
Compressor / Fan motor(W)		478/50	845/50		1185/95	1500/125	1700/125
Pump	W	57	80			135	
	Max. flow rate (L/min)	27/31	32/38			45/52	
	Max. liquid lift (M)	3.1/4.3	3.8/5.4			4.6/6.5	
Liquid inlet diameter		PT 3/4"					
Liquid outlet diameter		PT 3/4"					
Dimension WxDxH (mm)		540x400x340	630x420x420		630x480x520	710x540x570	710x540x570
Weight (KG)		44	65	65	74	83	83
Noise level		Below 70 dB(A)					

The cooling capacity stated above is based on the condition of liquid temperature 22°C, Ambient temperature of 32°C and 60Hz.

## Piping diagram

- A : HEW
- B : Cooling water source
- C : Filter
- D : Ball valve
- E : Machine tool
- F : Check valve



## Specification

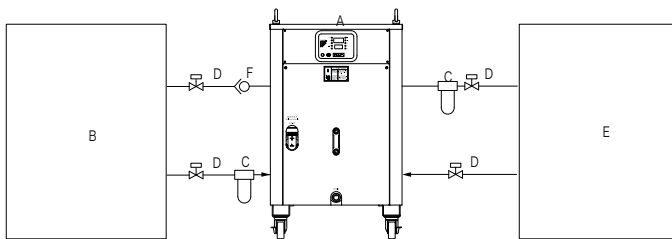
### Water-water Heat Exchanger

Item / Model		HEW-800PTS	HEW-2RPTS	HEW-3RPTS
Cooling capacity	KCAL/H 50/60Hz	3000	6000	9000
	W 50/60Hz	3500	7000	10500
	BTU/H 50/60Hz	12000	24000	36000
Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)		
	B	Differential temperature control type (tracing ambient/machine body temperature, setting range -9.9~+9.9 °C)		
Power source		3Ø 200~230V 50/60Hz		
Pump	W	750	750	2650
	Max. flow rate (L/min)	50	50	100
	Max. liquid lift (M)	40	40	50
Min. flow requirement of cooling water (L/min)		40		
Liquid inlet diameter(PT)		3/4"		
Liquid outlet diameter(PT)		3/4"		
cooling water inlet diameter(PT)		3/4"		
cooling water outlet diameter(PT)		3/4"		
Water tank capacity		45L		
Dimension WxDxH (mm)		490x500x795		
Weight (KG)		90	98	100
Noise level		Below 70 dB(A)	Below 80 dB(A)	

The above cooling capacity is based on the condition of liquid temperature 22°C and cooling water source of 10°C

## Piping diagram

- A : RW
- B : Cooling water source
- C : Filter
- D : Ball valve
- E : Machine tool
- F : Check valve



## Specification

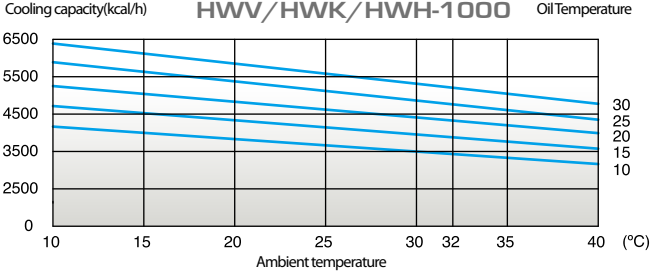
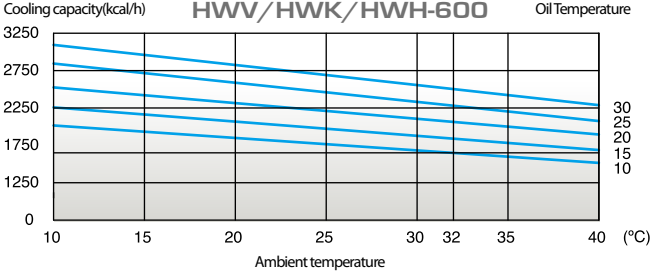
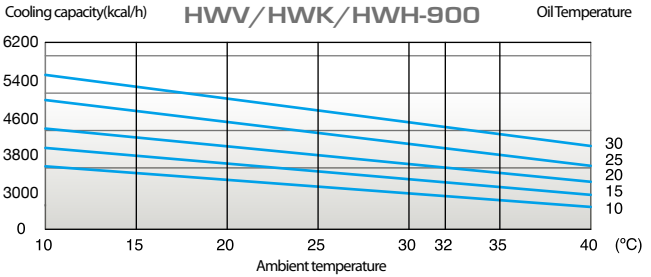
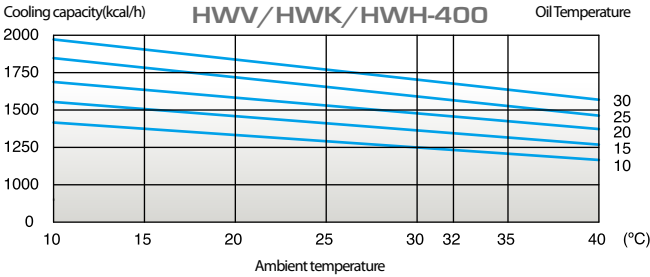
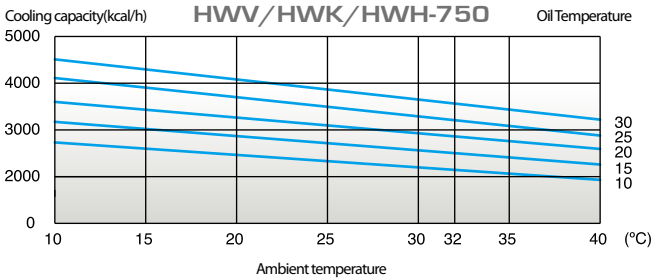
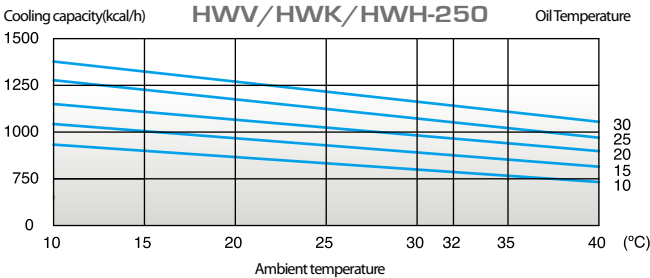
### Water Cooler - Water Cooled

Item / Model		RW-3RPTS	RW-4RPTS	RW-5RPTS	RW-7.5RPTS
Cooling capacity	KCAL/H 50/60Hz	7000/9000	10000/12000	12500/15000	18600/22500
	W 50/60Hz	8700/10500	11600/14000	14500/17500	21600/26100
	BTU/H 50/60Hz	30000/36000	40000/48000	50000/60000	74000/89000
Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)			
	B	Differential temperature control type (tracing ambient/machine body temperature, setting range -9.9~+9.9°C)			
Power source		3Ø 200~230V 50/60Hz			
Compressor Power (W)		3690	4540	6210	8300
Pump	W	845/1280	860/1510		
	Max. flow rate (L/min)	40/50	80/100		
	Max. liquid lift (M)	39/56	23/34		
Min. flow requirement of cooling water (L/min)		40		70	
Liquid inlet diameter(PT)		3/4"	1"		1-1/4"
Liquid outlet diameter(PT)		3/4"	1"		1-1/4"
cooling water inlet diameter(PT)		3/4"	1"		1-1/4"
cooling water outlet diameter(PT)		3/4"	1"		1-1/4"
Water tank capacity		65L	100L		170L
Dimension WxDxH (mm)		553x624x840	708x738x955		890x890x1255
Weight		154	217		406
Noise level		Below 80 dB(A)			

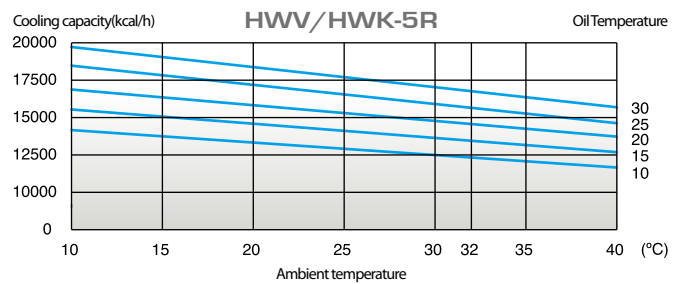
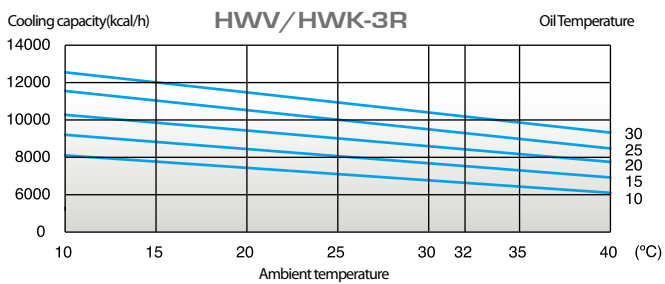
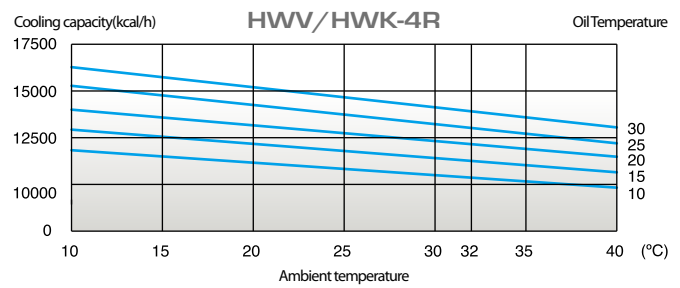
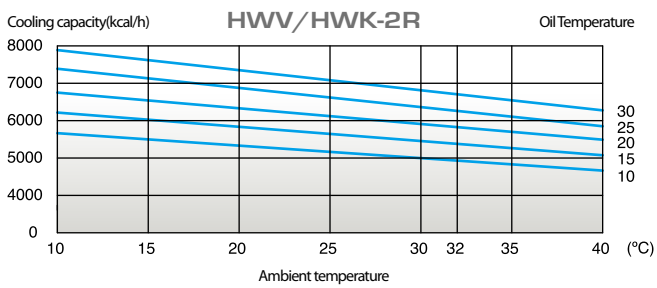
The above cooling capacity is based on the condition of liquid temperature 22°C and cooling water source of 10°C



PERFORMANCE CURVE OF WATER COOLER



## PERFORMANCE CURVE OF WATER COOLER



1. The above cooling capacity is based on the condition of 60 Hz, ambient temperature 32°C and liquid temperature 22°C.
2. The maximum pressure capacity of the evaporator is 5kg/cm<sup>2</sup>; please contact us for special request on high pressure pump.
3. Please contact us for special request on specification.
4. Design and specification are subject to change without prior notice.

# Air Cooler & Heat Pipe Heat Exchanger

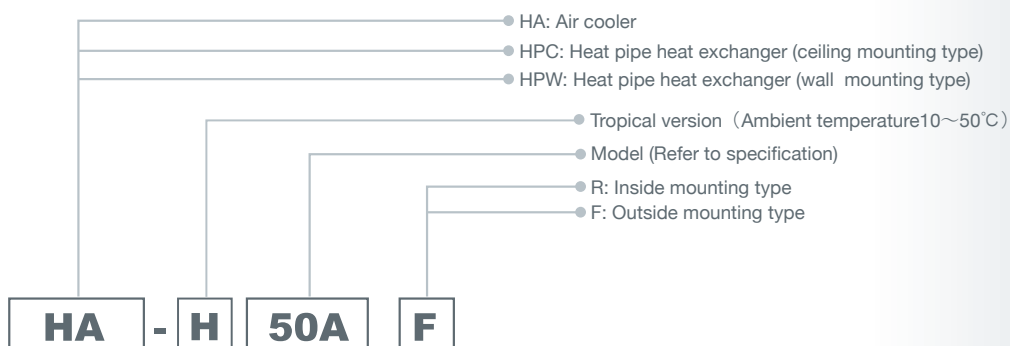


**HA** Series  
Air Cooler

**HPW / HPC** Series  
Heat Pipe Heat Exchanger

## Description of Type & Model

▲ EX. : HA-50AF



# HA Series Air Cooler

## Feature

- Two separated air circulation to prevent damage from intrusion of ambient air with scrap, dust, moisture or any corrosive elements.
- Saving the cost due to controller down time.
- Installed with compressor, functioned dehumidify and temperature control.
- Extend the lifetime of the control cabinet.



## Specification

Item / Model		HA-35A	HA-50A	HA-100A	HA-120A	HA-160A	HA-200A	HA-260A	HA-400A	HA-600A	HA-750A	HA-900A
Cooling capacity	KCAL/H 50/60Hz	170/215	250/300	300/375	415/500	550/625	650/750	825/1000	1250/1500	1650/2000	2500/3000	3400/3750
	W 50/60Hz	200/250	300/350	350/440	480/580	580/730	760/880	960/1170	1460/1750	1930/2340	2930/3500	4000/4400
	BTU/H 50/60Hz	680/850	1000/1200	1200/1500	1650/2000	2000/2500	2600/3000	3300/4000	5000/6000	6600/8000	10000/12000	13600/15000
Power source		1Ø 200~230V 50/60Hz						1Ø 200~230V or 3Ø 220V or 3Ø 380V 50/60Hz				
Max. ambient temperature	Standard	40°C										
	Tropical	50°C										
Dimension WxDxH (mm)	Standard	170x193x500	280x185x550	360x250x595		250x270x935		475x215x1085		550x262x1085		*
	Tropical	*	*	*	360x280x695	250x290x935		400x317x1285		400x295x1535	450x325x1535	485x380x1520
Weight (KG)	Standard	15	30	31		34		56		70		*
	Tropical	*		36		36		68		77	84	90
Noise level		Below 70 dB(A)										

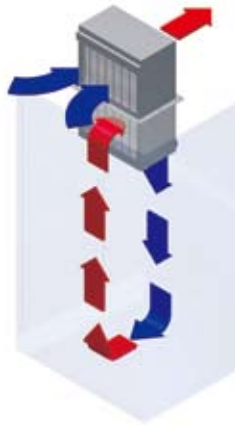
1. The above cooling capacity is based on the condition of ambient temperature 35°C and the cabinet's internal temperature 35°C.
2. Please contact us for special request on specification.
3. Design and specification are subject to change without prior notice.
4. We supply the same model with different dimensions; please contact us for your dimensional enquiries.
5. Please contact us for the panel cutting dimension.

# HPW / HPC

Series Heat Pipe Heat Exchanger

## Feature

- Using heat pipe with high heat conductivity to ensure excellent heat exchange.
- Enclosed design to assure isolation of internal and ambient air.
- Compact design with light weight for easy transportation and installation.
- Dew proof from over-cooling.
- Easy to maintain and inspect.



## Specification

Item / Model		HPC-15A		HPC-25A		HPC-35A		HPC-50A		HPC-70A		HPC-100A	
Heat dissipation W/°C		15		25		35		50		70		100	
Fan	Quantity	1x2		1x2		1x2		2x2		2x2		2x2	
	Voltage (ACV)	110	220	110	220	110	220	110	220	110	220	110	220
	Input (W)	35x2	35x2	35x2	35x2	35x2	35x2	35x4	35x4	35x4	35x4	35x4	35x4
	Rate current (A)/PC	0.43	0.29	0.43	0.29	0.43	0.29	0.43	0.29	0.43	0.29	0.43	0.29
Dimension WxDxH (mm)		260x165x382		305x175x382		305x200x412		414x200x412		441x200x472		565x525x492	

## Specification

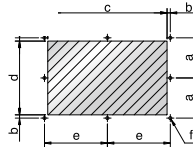
Item / Model		HPW-05A		HPW-10A		HPW-15A		HPW-25A		HPW-35A		HPW-50A		HPW-70A		HPW-100A	
Heat dissipation W/°C		5		10		15		25		35		50		70		100	
Fan	Quantity	1x2		1x2		1x2		1x2		1x2		2x2		2x2		2x2	
	Voltage (ACV)	110	220	110	220	110	220	110	220	110	220	110	220	110	220	110	220
	Input (W)	20x2	20x2	20x2	20x2	35x2	35x2	35x2	35x2	35x2	35x2	35x4	35x4	35x4	35x4	35x4	35x4
	Rate current (A)/PC	0.21	0.129	0.21	0.125	0.43	0.29	0.43	0.29	0.43	0.29	0.43	0.29	0.43	0.29	0.43	0.29
Dimension WxDxH (mm)		250x72x480		250x72x580		250x80x780		295x90x780		295x90x860		414x90x940		440x120x970		565x120x100	

Ceiling mounting type

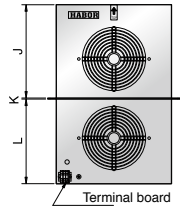
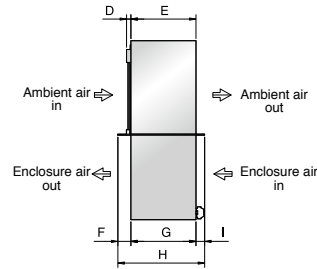
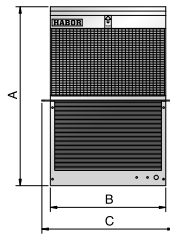
HPC-15/25/35A

▨ Ceiling mounting type (mm)

Model	a	b	c	d	e	f
HPC-15A	75	7.5	230	135	122.5	8-ø6.5
HPC-25A	80		275	145	145	
HPC-35A	92.5		275	170	145	



▨ : Panel cutting dimension



Ceiling mounting type (mm)

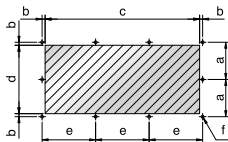
Model	A	B	C	D	E	F	G	H	I	J	K	L
HPC-15A	382	220	260	10	110	30	110	165	25	200	2	180
HPC-25A	382	268	305		125		125	175	20	200		180
HPC-35A	412	269	305		150		150	200	20	215		195

Ceiling mounting type

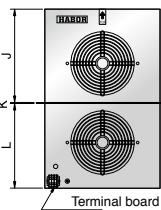
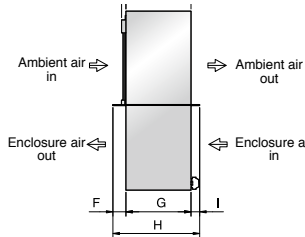
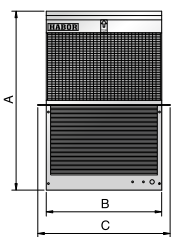
HPC-50/70A

▨ Ceiling mounting type (mm)

Model	a	b	c	d	e	f
HPC-50A	92.5	7.5	384	170	133	10-ø6.5
HPC-70A			411		142	



▨ : Panel cutting dimension

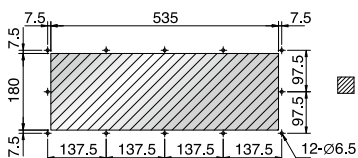


Ceiling mounting type (mm)

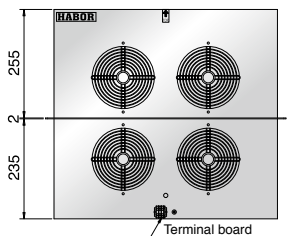
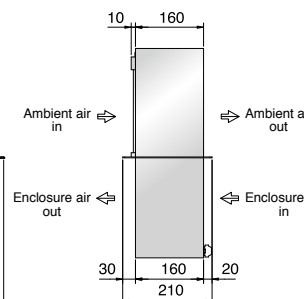
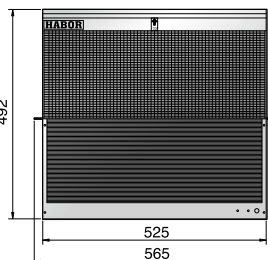
Model	A	B	C	D	E	F	G	H	I	J	K	L
HPC-50A	412	377	414	10	152	30	152	200	19	215	2	195
HPC-70A	472	400	441		152		152	200	19	245		225

Ceiling mounting type

HPC-100A

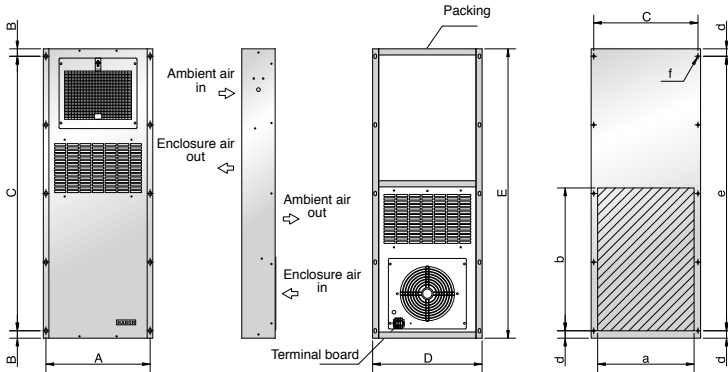


▨ : Panel cutting dimension



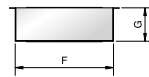
Wall mounting type **HPW-05/10/15/25/35A**

Outside mounting type **HPW-XXAF**

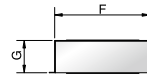


Ceiling mounting type (mm)

Model	A	B	C	D5	E	F	G
HPW-05A	236	20	110x4=440	250	480	215	72
HPW-10A	236		135x4=540		580		72
HPW-15A	236		185x4=740		780	80	
HPW-25A	281	295	185x4=740	295	780	265	90
HPW-35A	281		205x4=820		860		90



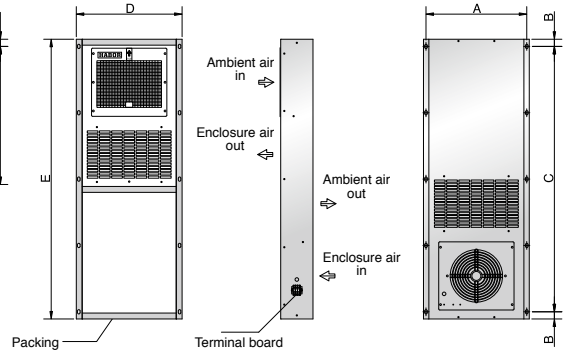
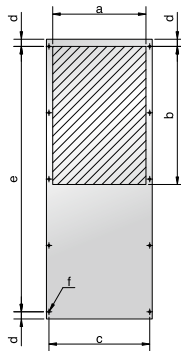
▨ : Panel cutting dimension



Inside mounting type **HPW-XXAR**

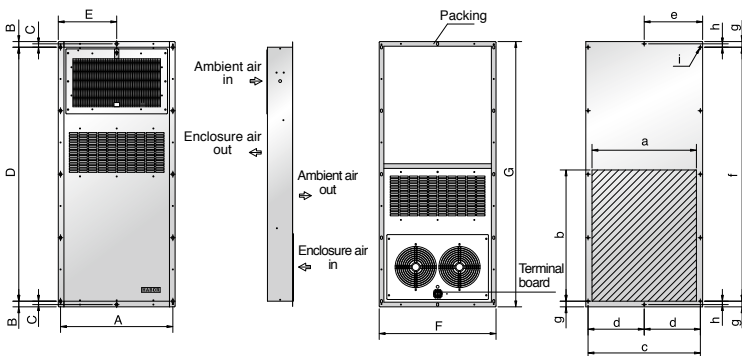
▨ Ceiling mounting type (mm)

Model	a	b	c	d	e	f
HPW-05A		235	236	20	110x4=440	10-ø5.5
HPW-10A	220	285			135x4=540	
HPW-15A		385			185x4=740	
HPW-25A	260	385	281	20	185x4=740	10-ø6.5
HPW-35A		435			205x4=820	



Wall mounting type **HPW-50/70/100A**

Outside mounting type **HPW-XXAF**



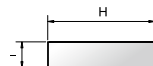
Ceiling mounting type (mm)

Model	A	B	C	D	E	F	G	H	I
HPW-50A	398	20	12	225x4=900	207	414	940	374	90
HPW-70A	424			232.5x4=930	220	440	970	396	120
HPW-100A	549			240x4=960	282.5	565	1000	522	120



▨ : Panel cutting dimension

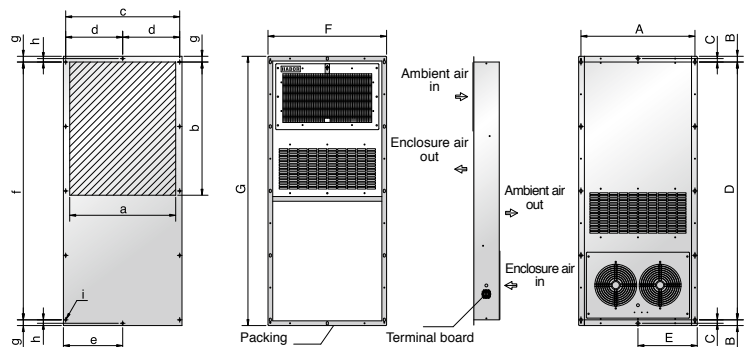
▨ : Panel cutting dimension



Inside mounting type **HPW-XXAR**

▨ Ceiling mounting type (mm)

Model	a	b	c	d	e	f	g	h	i
HPW-50A	370	465	398	199	207	225x4=900	20	12	12-ø6.5
HPW-70A	398	480	424	212	220	232.5x4=930			
HPW-100A	520	495	549	274.5	282.5	240x4=960			



# FU Series Ventilation Filter

## Feature

- ABS material is Non-flammable and UV-resistant.
- Material of filter is used the exported Nylon synthetic resin. Rate of dust resistance AFI 80% (AFI=JAPAN AIR FILTER INSTITUTE).
- 45° angle design of the ventilator exit is new and good-looking.
- Effectively decrease the temperature in the control cabinet.
- Water-resistance and rust resistance.
- Ensures the heat letting out of controller and electronic parts, lengthens the life of the parts.



Specification of the ventilation filter unit

Model	Dimension (mm)	Air flow (m³/min)	Air speed (m/sec)	Damage area (mm/Aq)	Weight (g)
<b>FU-9701A</b>	□105x6	8.00	1.5	2.5~20	69
<b>FU-9702A</b>	□120x6	12.00	1.5	2.5~20	80
<b>FU-9703A</b>	158x158x22	25.0	2.0	3.1~40	216
<b>FU-9704A</b>	208x208x25	50.0	2.0	3.1~40	330

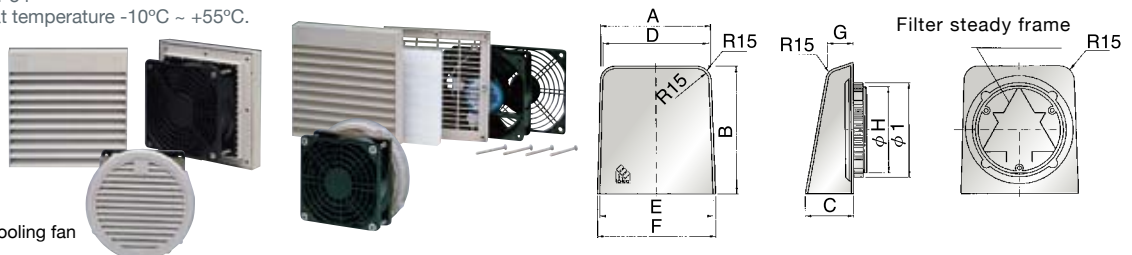
1. Material: ABS resin 94V-0, UL fire resistance. ,
2. Protection class: IP44, dust resistance rate 80% . ,
3. Use area: indoor at temperature -10°C ~ +55°C.

Specification of the ventilator filter unit

Model	Dimension (mm)	Air flow (m³/min)	Air speed (m/sec)	Damage area (mm/Aq)	Weight (g)
<b>FU-9701B</b>	□105x6	8.00	1.5	2.5~20	69
<b>FU-9702B</b>	□105x6	12.00	1.5	2.5~20	80
<b>FU-9703B</b>	158x158x22	25.0	2.0	3.1~40	216
<b>FU-9704B</b>	208x208x25	50.0	2.0	3.1~40	330



1. AES is weather resistance resin and it is used for outdoors, promote protection and prevent defaults caused by bad weather.
2. Protection class: IP54
3. Use area: indoor at temperature -10°C ~ +55°C.



Specification of the cooling fan

Model	Rated voltage (VAC)	Airflow (m³/min)	Air speed (m/sec)	Damage area (mm/Aq)	Weight (g)	Specification of fans part										
						Dimension WxDxH (mm)	Rated voltage (VAC)	Rated current (A)	Locked current (A)	Input power (W)	Air pressure (mm/H <sub>2</sub> O)	Rotary speed (rpm)	Noise (dB)	Weight (g)	Bearing	
<b>FU-9701C</b>	110	0.68	1.5	2.5~20	346	80x80x25	120	0.140	0.150	14	5.50	3000	35	260	Sleeve bearing	
	220						0.070	0.090								
<b>FU-9702C</b>	110	0.87	1.5	2.5~20	380	92x92x25	120	0.140	0.150		6.50	2900	36	280		
	220						0.070	0.080								
<b>FU-9703C</b>	110	3.00	2.0	3.1~40	778	120x120x38	120	0.190	0.200		9.00	3100	47	530		Ball bearing
	220						0.090	0.100								
<b>FU-9704C</b>	110	5.80	2.0	3.1~40	1265	172x150x151	120	0.440	0.580		14.50	3100	55	900		
	220						0.230	0.310								

1. Protection class: IP44, dust resistance rate 80%.
2. Use area: indoor temperature -10°C ~ +55°C.
3. The fan use aluminum alloy frame and 94V-0 construction plastic impeller.
4. For order, please mention the power voltage code: 1=AC 110V 2=AC 220V, EX. : FU-9702C-1



# HRD Series Dehumidifier

## Feature

- Supply the clean and dry air due to it's sufficient ability in dehumidifying capacity.
- Adopt the precise filter with the capacity of removal of oil fog and equipped with the capacity of removal of oil fog and equipped with the differential pressure gauge to monitor the filter.
- Adopt the precise micro-adjustment pressure regulator to regulate the pressure within the desired pressure range.
- Adopt the precise water filter to remove the moisture.
- Easy to install and to maintain.



## Specification High Inlet Temperature

Item/Model		HRD-3H	HRD-5H	HRD-10H	HRD-20H	HRD-30H	HRD-50H
Air processing condition							
Air processing capacity	m <sup>3</sup> /min.A.P.	0.3	0.6	1.2	2.4	4.2	7.0
Inlet air pressure	MPa	0.7					
Inlet air temperature	°C	55					
Outlet air temperature	°C	Under atmospheric pressure - 17, Under pressure 2-15					
Ambient temperature	°C	32					
Medium		Compressed air of air compressor					
Maximum inlet air temperature	°C	80					
Range of ambient temperature	°C	2~40					
Maximum air pressure	MPa	0.98 (10kg/cm <sup>2</sup> )					
Dimension WxDxH	W	mm	490	750	820	820	900
	D	mm	250	300	320	400	550
	H	mm	480	600	720	940	990
In/Outlet pipe diameter	B	R1/2		R1		R1-1/2	R2
Power source		1Ø, 220V 60Hz					
Compressor horse power	HP	1/6	1/4	1/3	2/3	1	1-1/2
Protection device		Over current relay, over heat protector, high pressure switch					

## Specification Standard Inlet Temperature

Item/Model		HRD-5S	HRD-10S	HRD-20S	HRD-30S	HRD-50S	HRD-75S	HRD-100S
Air processing condition								
Air processing capacity	m <sup>3</sup> /min.A.P.	0.6	1.2	2.4	4.2	7.0	10	14
Inlet air pressure	MPa	0.7						
Inlet air temperature	°C	35						
Outlet air temperature	°C	Under atmospheric pressure - 17, Under pressure 2-15						
Ambient temperature	°C	32						
Medium		Compressed air of air compressor						
Maximum inlet air temperature	°C	50						
Range of ambient temperature	°C	2~40						
Maximum air pressure	MPa	0.98 (10kg/cm <sup>2</sup> )						
Dimension WxDxH	W	mm	490	750	820	820	900	
	D	mm	250	300	320	400	550	
	H	mm	480	600	720	940	990	
In/Outlet pipe diameter	B	R1/2		R1		R1-1/2	R2	
Power source		1Ø, 220V 60Hz						
Compressor horse power	HP	1/6	1/4	1/3	2/3	1	1-1/2	
Protection device		Over current relay, over heat protector, high pressure switch						

# Temperature Sensor

Diagram 1

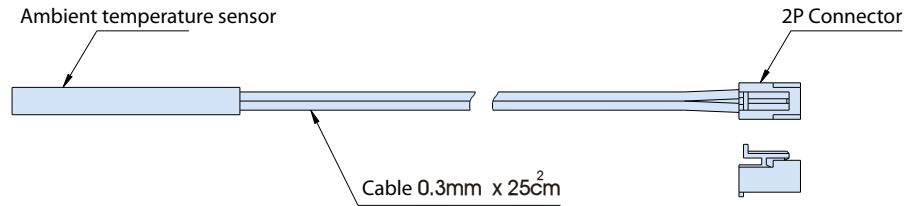


Diagram 2

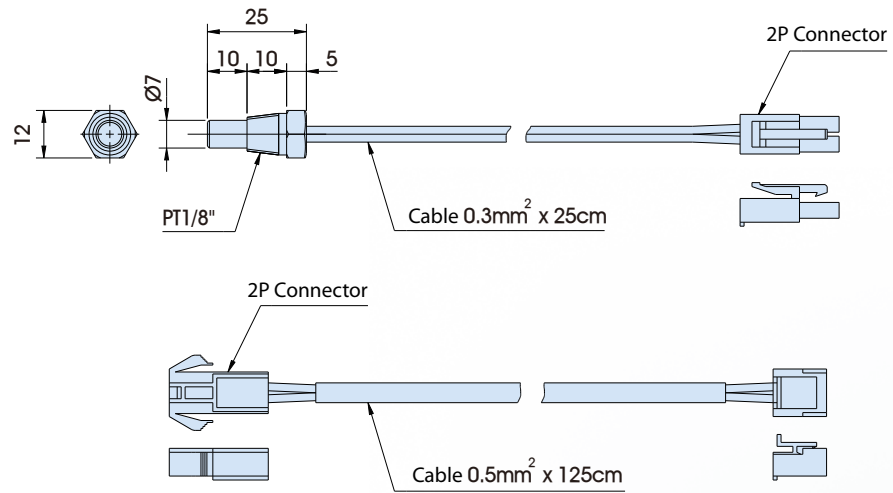
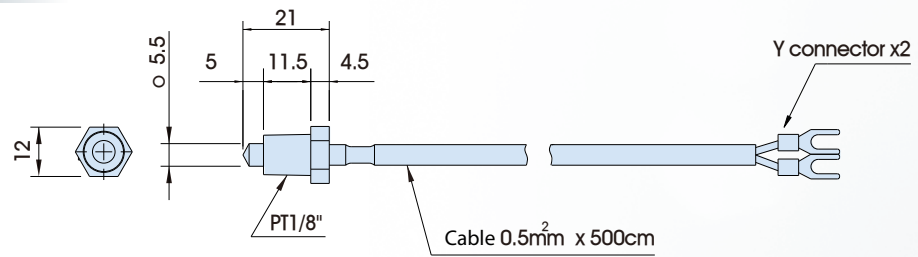


Diagram 3



## Temperature Sensor

Sensor Type	Specifications	Dimension Diagram	Application Model
Room temperature sensor	RA	Diagram 1	Diff. temp. control tracing ambient temp.
Machine Body Temperature Sensor	RM	Diagram 3	Diff. temp. control tracing machine body temp
Oil temperature sensor	RO	Diagram 2	Oil cooler series
Water temperature sensor	RW	Diagram 2	Water cooler series



**Electronics Temperature Controller**

- Display of liquid temperature, ambient temperature and setting value.
- Micro digital circuit design makes high precise control.
- Output of alarm message.
- Function of compressor protection.
- Customized control is available upon request.
- Optional RS485 communication port.

**PID Controller Panel**

- Parameter display
- Parameter value display
- Standby button
- Parameter changing button
- Push button of setting value (Up)
- Push button of setting value (Down)



**ON/OFF Controller Panel**



- Indicator of refrigeration system fault
- Indicator of pump motor fault
- Indicator of compressor fault
- Liquid / base temperature
- Indicator of liquid temperature
- Indicator of base temperature
- Indicator of pump running
- Indicator of compressor running
- Indicator of heating (Optional)
- Setting value
- Change button for liquid / base temperature
- Push button of setting value (Up)
- Push button of setting value (Down)
- Indicator of liquid circulation system fault
- Indicator of reverse power



a&g automation and gears GmbH  
Am Sandbühl 2  
D-88693 Deggenhausertal  
Phone : +49 (0) 75 55 / 92 78 80  
Fax : +49 (0) 75 55 / 92 78 80 1

Mail : [info@aundg.com](mailto:info@aundg.com)  
[www.aundg.com](http://www.aundg.com)

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