



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

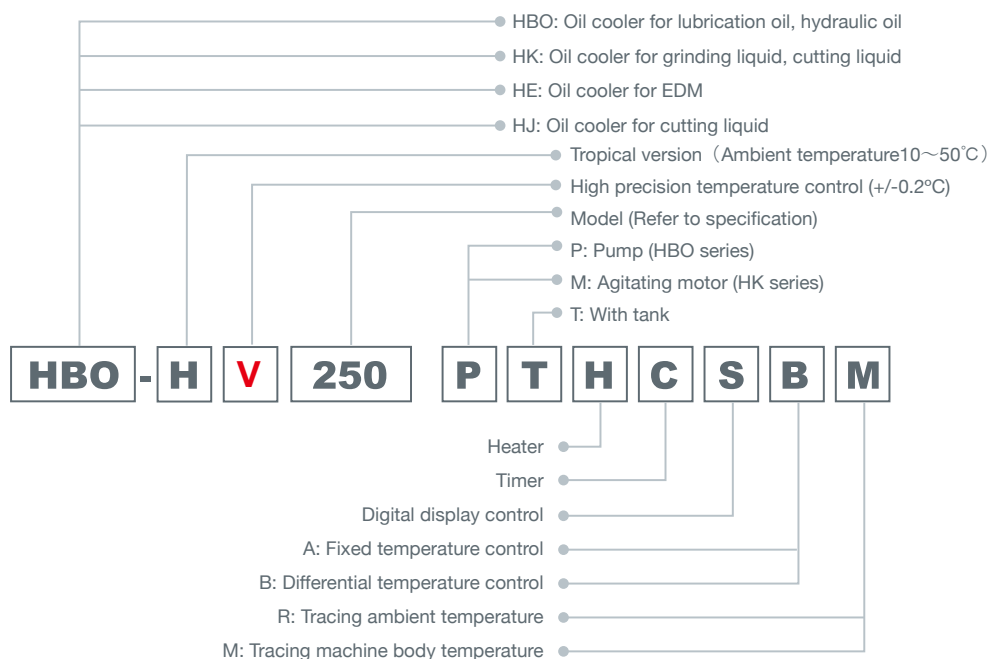
HJ Series

Oil cooler for cutting liquid

HE Series

Oil cooler for EDM

▲ EX. : HBO-250PTSBM



HK HJ HE

Series Oil cooler for grinding liquid, cutting liquid

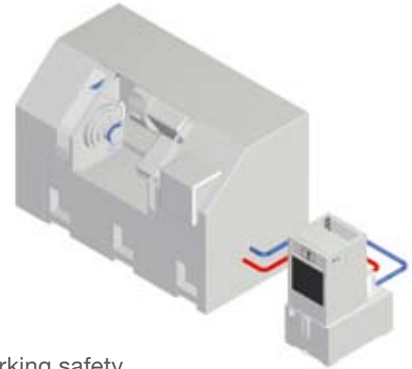
Series Oil cooler for cutting liquid

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)			

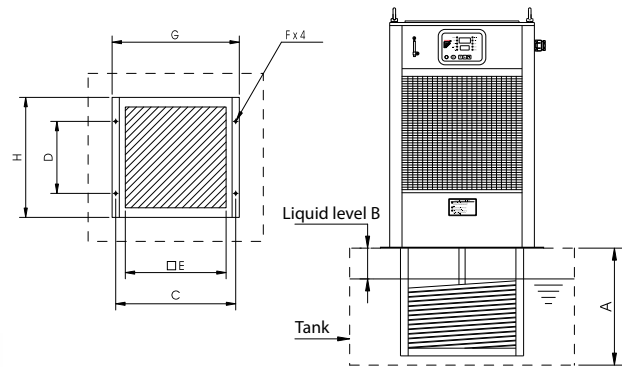
1. The above cooling capacity is based on the condition of ambient temperature 35°C, oil temperature 35°C with oil type of ISO VG2.

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.
 1. 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.
 2. Please note that the high temperature liquid should be mixed well with the low temperature liquid before flow into the cooling tank.

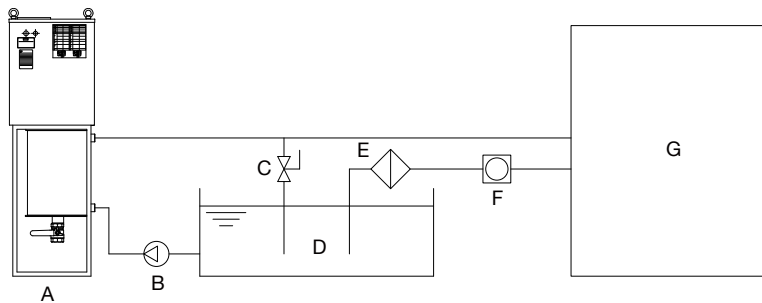
Specification

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)	

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Circulation Diagram

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

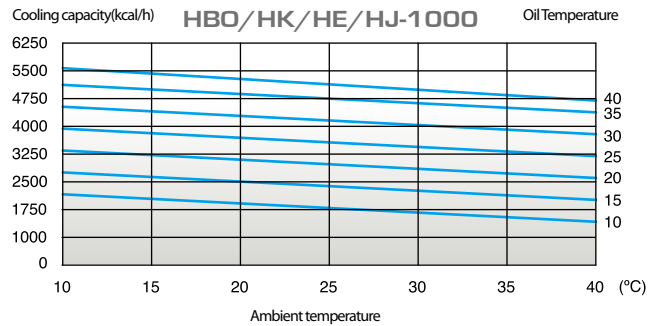
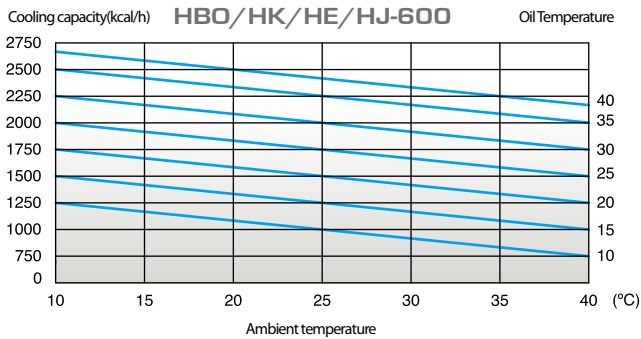
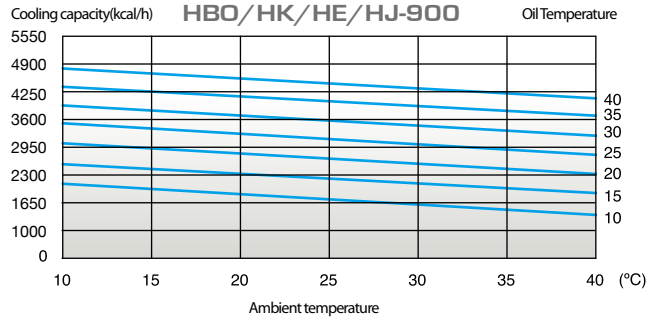
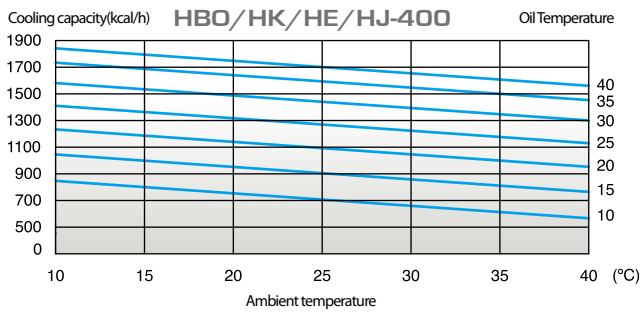
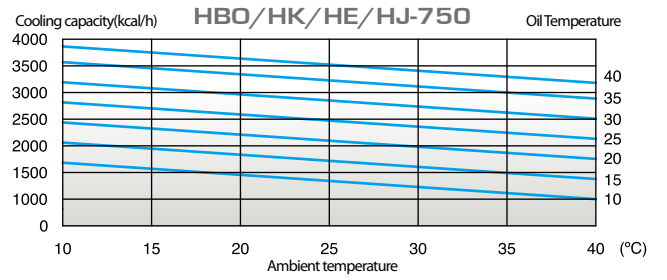
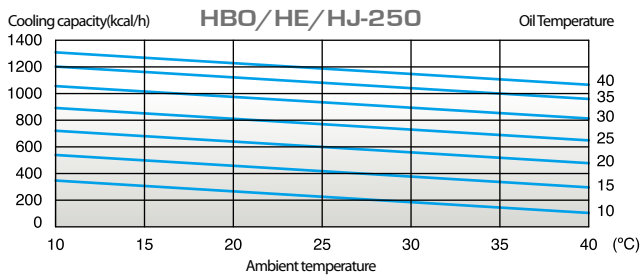


Specification

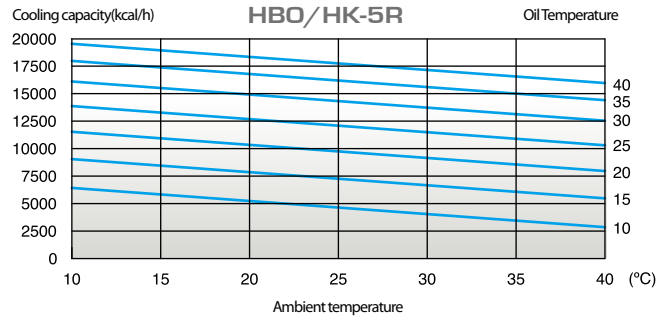
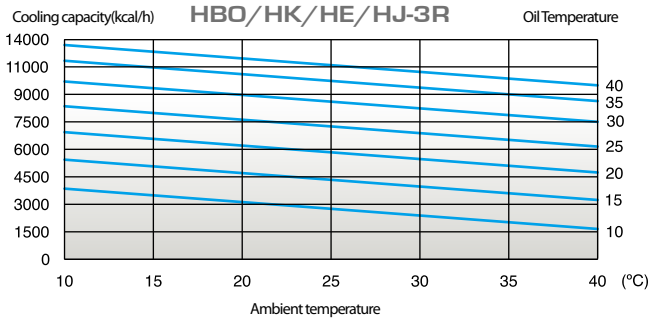
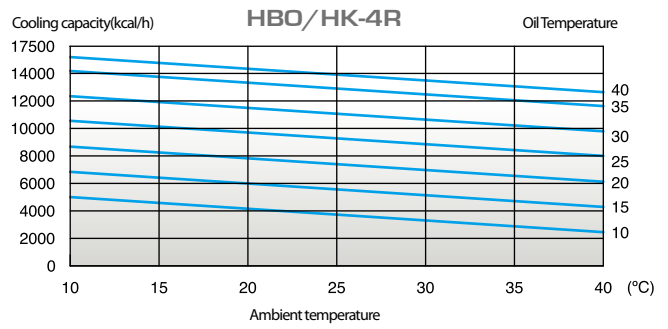
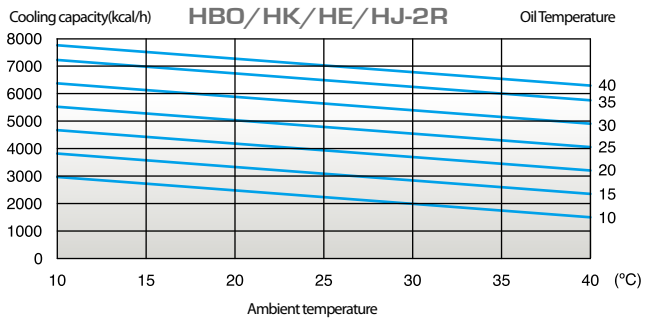
Item / Model		HJ-250S	HJ-400S	HJ-600S	HJ-750S	HJ-900S	HJ-1000S	HJ-2RS	
Cooling capacity	KCAL/H 50/60Hz	840/1000	1400/1500	1700/2100	2600/3000	3200/3800	3750/4500	5000/6000	
	W 50/60Hz	980/1170	1630/1750	1980/2450	3030/3500	3700/4400	4360/5240	5820/6980	
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Temperature controller	A	Fixed temperature control type (setting range 10~40 °C)							
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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

Temperature Sensor

Diagram 1

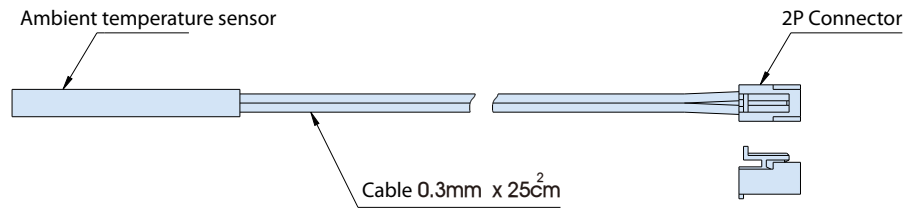


Diagram 2

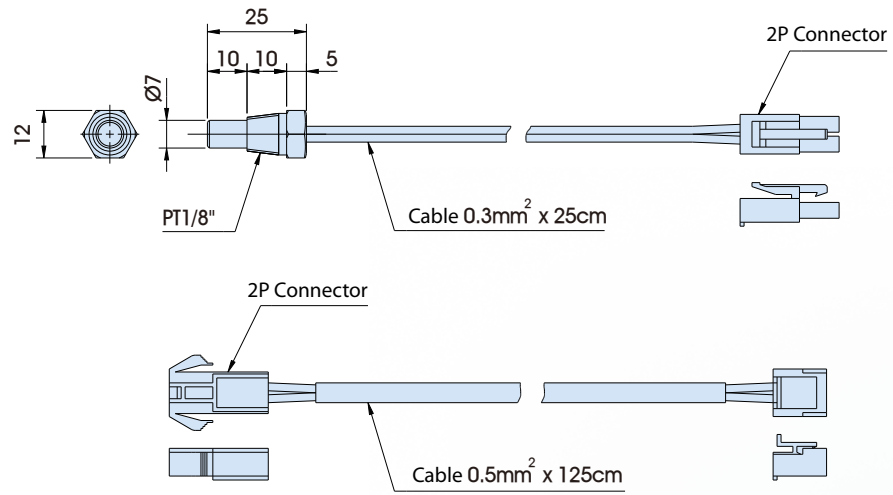
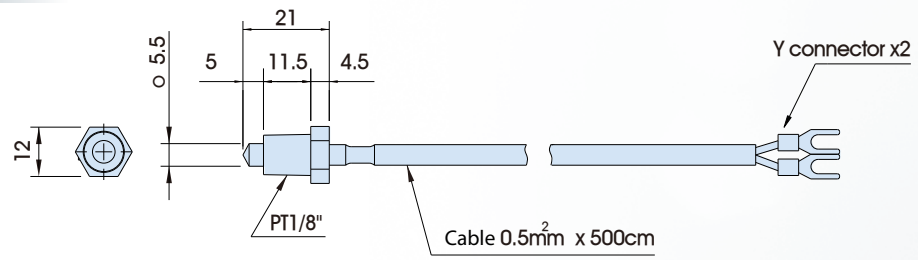


Diagram 3



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



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