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PLATE-FIN HEAT EXCHANGER

To avoid the leakage caused by peak pressure, an Anti-Burst Valve or By-Pass Valve should be always mounted. Off-Line cooling is strongly recommended. Pumping the oil from the tank to the heat exchanger with a separated cooling pump. Please refer to page 218.

How to order

AH0608T - C A(D)※

1 2 3

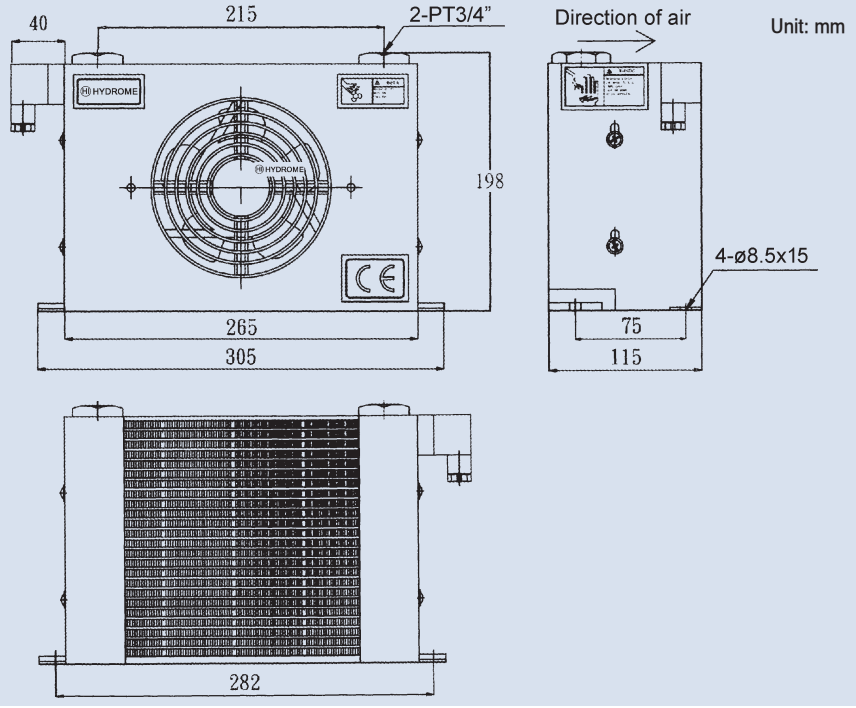
1	Model	Fan dia: 6"x1 with temperature protection switch
2	With fan case	
3	Voltage	A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V

Specifications

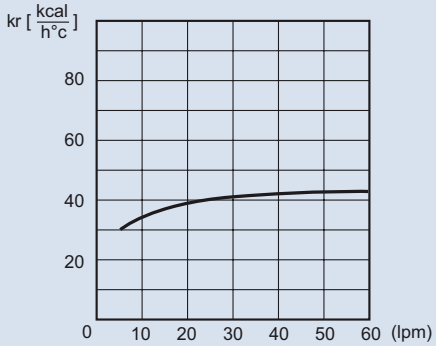
Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
	3/4"	3~60	20	1200	1~2	4.2

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH0608T	Single	54	AC115	50/60	45/37	0.6/0.5	2850/3450	457/553	42/48
			AC230			0.27/0.23			
			AC380		30/25	0.16/0.14			
	-	-	DC12	-	-	1.6	3350	500	51
			DC24			0.8		420	

Dimensions



PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

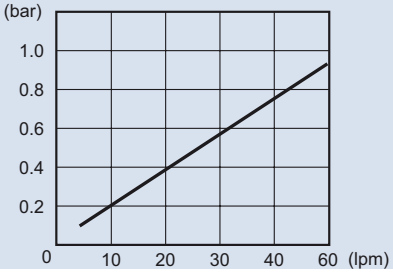


PLATE-FIN HEAT EXCHANGER

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How to order

AH0608LT - C A(D)※

1 2 3

1	Model	Fan dia: 6"x2 with temperature protection switch
2	With fan case	
3	Voltage	A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V

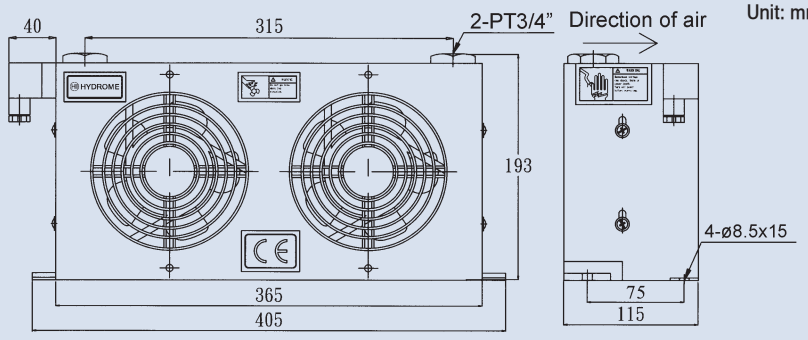
Specifications

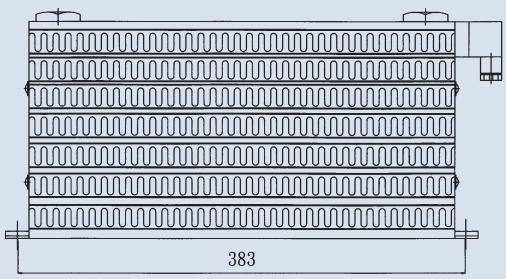
Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
	3/4"	3~60	20	2400	2~3	6

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH0608LT	Single	54	AC115	50/60	90/74	1.2/1	2850/3450	914/1106	42/48
			AC230			0.54/0.46			
			AC380		60/50	0.32/0.28			
	-	-	DC12	-	-	3.2	3350	1000	51
			DC24			1.6		840	

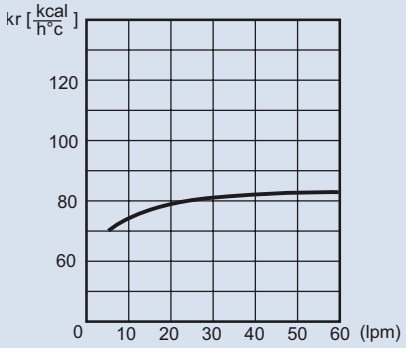
Dimensions

Unit: mm





PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

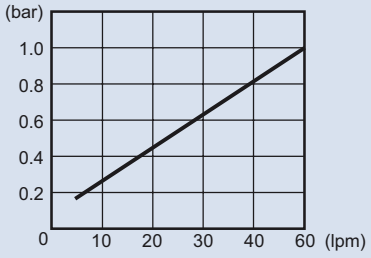


PLATE-FIN HEAT EXCHANGER

To avoid the leakage caused by peak pressure, an Anti-Burst Valve or By-Pass Valve should be always mounted. Off-Line cooling is strongly recommended. Pumping the oil from the tank to the heat echanger with a separated cooling pump. Please refer to page 218.

The motor of DC fan is carbon brush type, which means the life-span was limited 2000 hours of service.

How to order

AH1012 - (3P) - C A(D)※

1 2 3 4

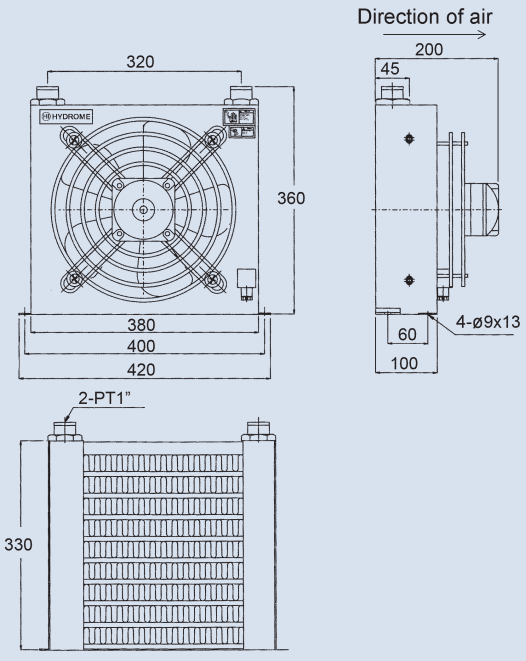
1	Model Fan dia: 10"x1
2	3P: 3 Phase double voltage 230 (400V)
3	With fan case
4	Voltage A1: AC115V A2: AC230V D1: DC12V D2: DC24V

Specifications

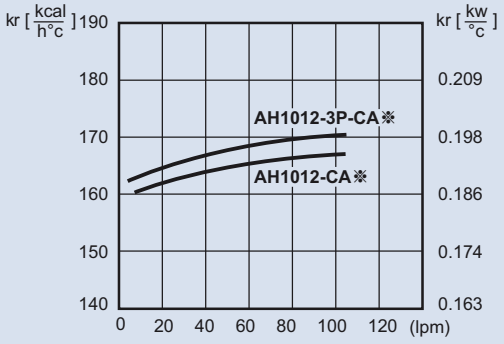
Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
AH1012/AH1012-3P	1"	20~100	20	5000/5200	3~5	10

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH1012	Single	54	AC115	50/60	60/58	0.8/0.74	1300/1550	1500	55
			AC230			0.42/0.36			
	-	-	DC12	-	192	16	2000		60
			DC24			8	2400		
AH1012-3P	3	54	AC230	50/60	88/80	0.45/0.36	1430/1670		
			AC400			0.22/0.2			

Dimensions



PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

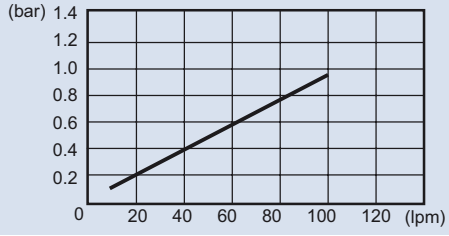
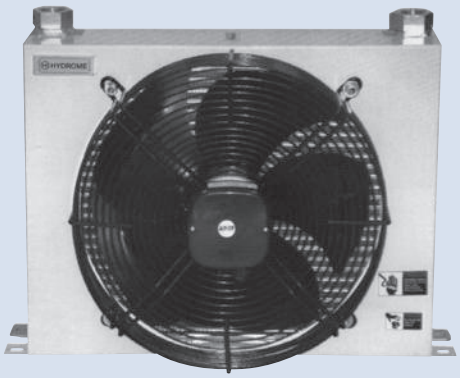


PLATE-FIN HEAT EXCHANGER



To avoid the leakage caused by peak pressure, an Anti-Burst Valve or By-Pass Valve should be always mounted. Off-Line cooling is strongly recommended. Pumping the oil from the tank to the heat exchanger with a separated cooling pump. Please refer to page 218.

The motor of DC fan is carbon brush type, which means the life-span was limited 2000 hours of service.

How to order

AH1215 - C A(D)※

1 2 3

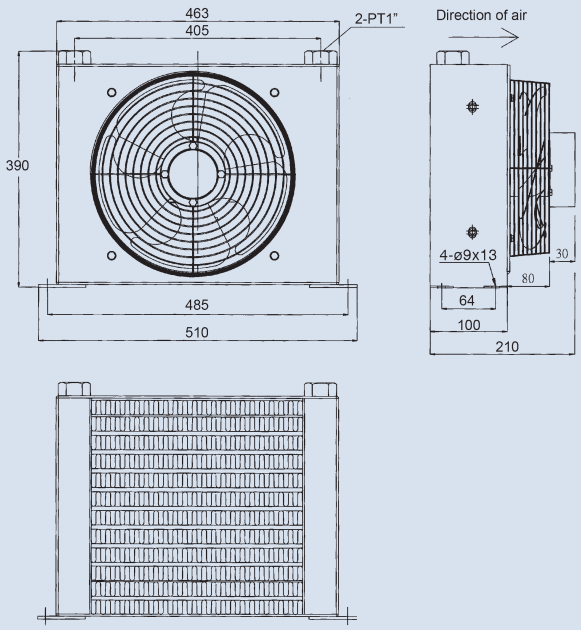
1	Model Fan dia: 12"x1
2	With fan case
3	Voltage A2: 230 (400V) D1: DC12V D2: DC24V

Specifications

Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
	1"	20~100	20	7200	5~7.5	15

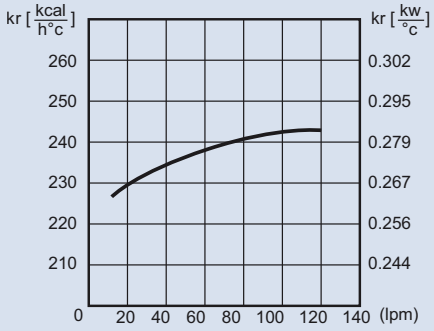
Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH1215	3	54	AC230	50/60	130	0.45/0.5	2420/2510	1800/1900	60
			AC400			0.26/0.29			
	-	-	DC12	-	192	16	2000	2000	65
			DC24			8	2400		

Dimensions



Unit: mm

PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

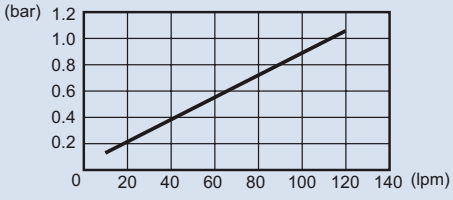
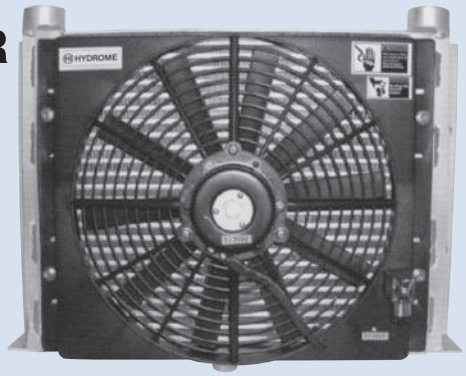


PLATE-FIN HEAT EXCHANGER



To avoid the leakage caused by peak pressure, an Anti-Burst Valve or By-Pass Valve should be always mounted. Off-Line cooling is strongly recommended. Pumping the oil from the tank to the heat exchanger with a separated cooling pump. Please refer to page 218.

The motor of DC fan is carbon brush type, which means the life-span was limited 2000 hours of service.

How to order

AH14 17, AH14 70 - A(D)※

1 2 1 2 3

1	Model	Fan dia: 14"x1
2	Size of A	17: 45mm 70: 70mm
3	Voltage	A1: AC115V A2: AC230V D1: DC12V D2: DC24V

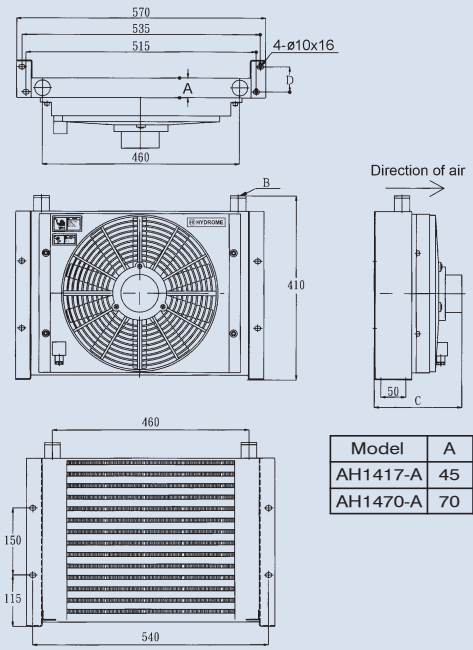
Specifications

Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
AH1417/AH1470	See B	30~100	20	10000/11300	7.5~10/10~15	11/17

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH1417	Single	54	AC115	50/60	40/50	0.46/0.35	1450/1650	2300/2760	60
			AC230			0.23/0.18			
AH1470	-	-	DC12	-	90	7.5	2000	2800	
			DC24		108	4.5	2200		

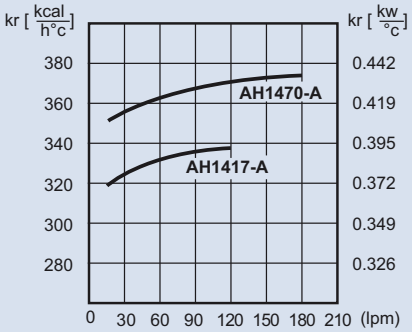
Dimensions

Unit: mm



Model	A	B	C	D
AH1417-A	45	2-PT1"	196	48
AH1470-A	70	2-PT1-1/4"	212	50

PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

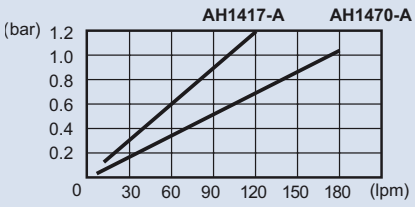


PLATE-FIN HEAT EXCHANGER

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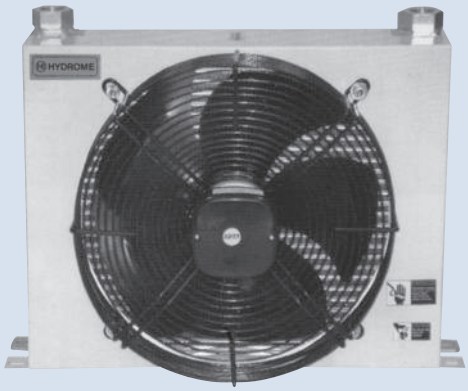


How to order

AH1418 - C A※

1 2 3

1	Model	Fan dia: 14"x1
2	With fan case	
3	Voltage	A2: AC230 / 400V A4: AC440V

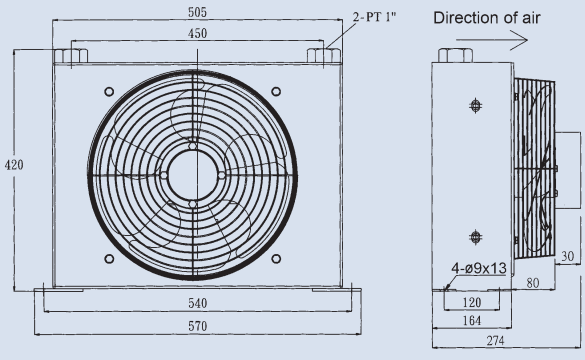
Specifications

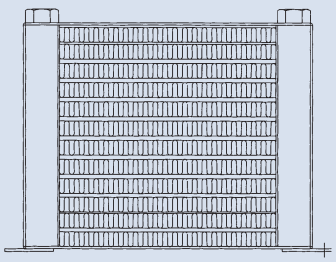
Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
	1"	30~100	20	10000	7.5~10	17

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH1418	3	54	AC230	50/60	150/180	0.8/0.7	1380/1550	3200/3800	62
			AC400		150/180	0.4/0.36			
			AC440		200/260	0.4/0.43			

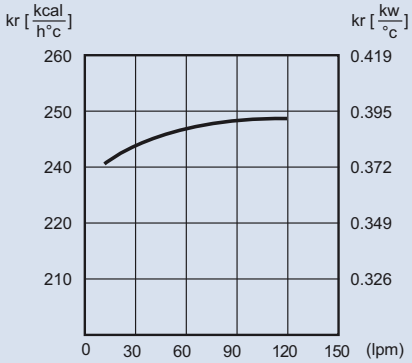
Dimensions

Unit: mm





PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

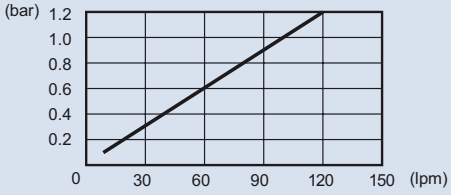


PLATE-FIN HEAT EXCHANGER

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How to order

AH1428 - C A※

1 2 3

1	Model Fan dia: 14"x1
2	With fan case
3	Voltage A2: AC230 / 400V A4: AC440V

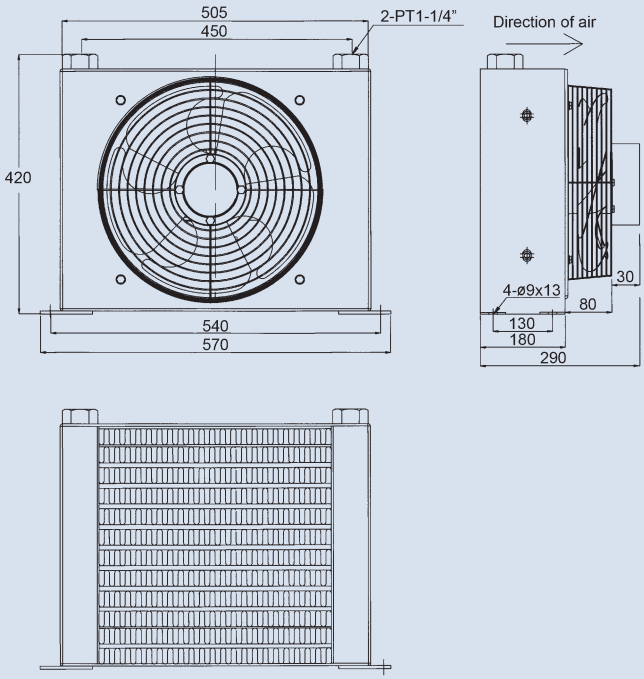
Specifications

Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
	1-1/4"	30~200	20	13000	15~20	21

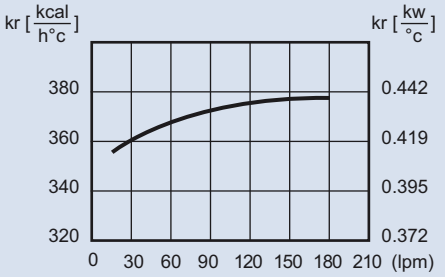
Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH1428	3	54	AC230	50/60	150/180	0.8/0.7	1380/1550	3200/3800	62
			AC400		150/180	0.4/0.36			
			AC440		200/260	0.4/0.43			

Dimensions

Unit: mm



PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

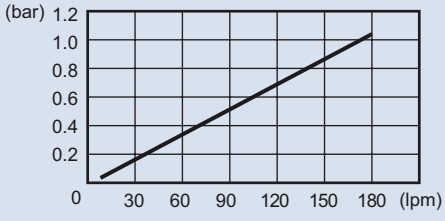


PLATE-FIN HEAT EXCHANGER

To avoid the leakage caused by peak pressure, an Anti-Burst Valve or By-Pass Valve should be always mounted. Off-Line cooling is strongly recommended. Pumping the oil from the tank to the heat exchanger with a separated cooling pump. Please refer to page 218.

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How to order

AH1490 - C A(D)※

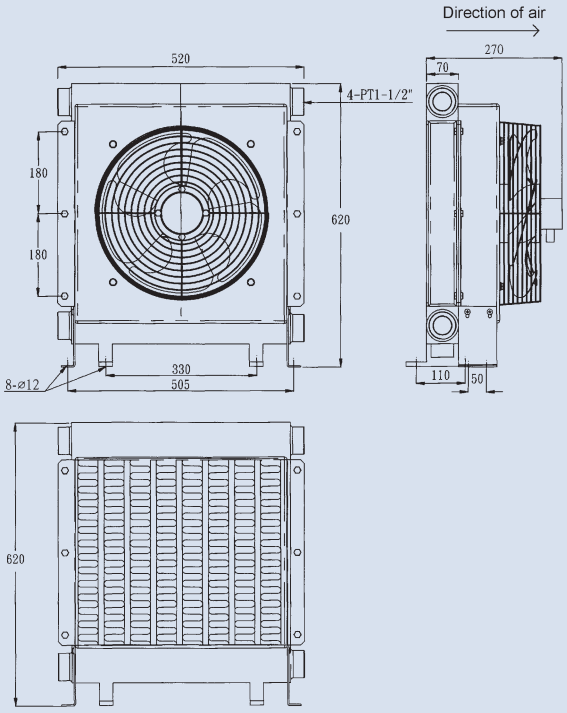
1	Model	Fan dia: 14"x1
2	With fan case	
3	Voltage	A2: AC230 / 400V A4: AC440V D1: DC12V D2: DC24V

Specifications

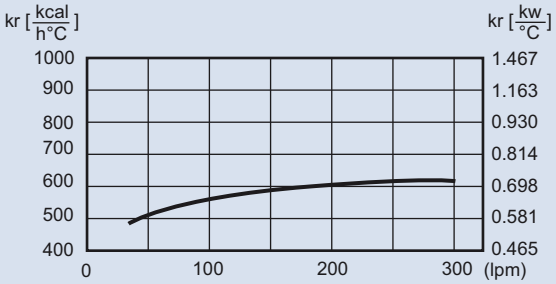
Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
	1-1/2"	30~200	20	18000	20~25	30

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH1490	3	54	AC230	50/60	150/180	0.8/0.7	1380/1550	3200/3800	62
			AC400		150/180	0.4/0.36			
			AC440		200/260	0.4/0.43			

Dimensions



PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

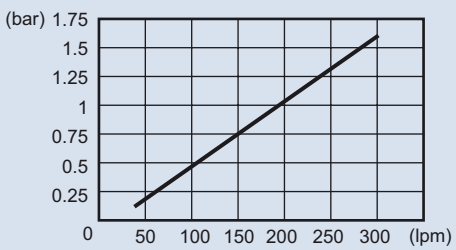
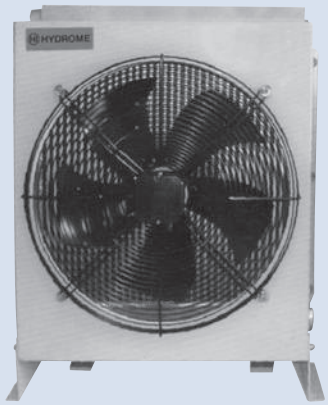


PLATE-FIN HEAT EXCHANGER



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How to order

AH1680 - C A(D)※

1 2 3

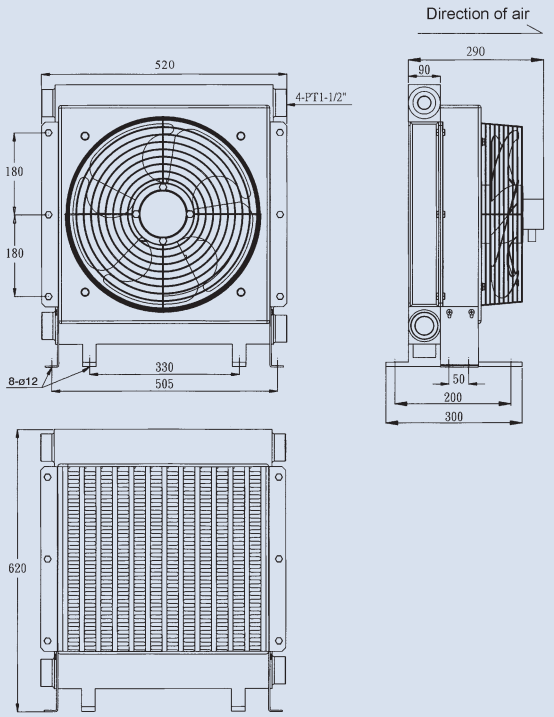
1	Model Fan dia: 16"x1
2	With fan case
3	Voltage A2: AC230 / 400V A4: AC440V D1: DC12V D2: DC24V

Specifications

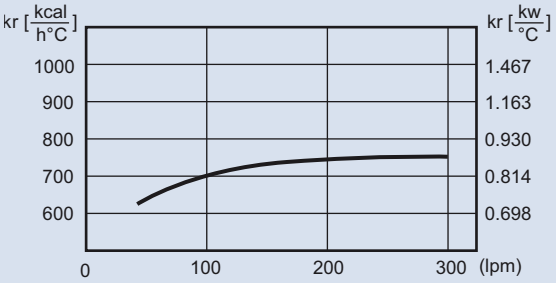
Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
	1-1/2"	30~250	20	22000	25~40	35

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH1680	3	54	AC230	50/60	145/250	0.90/1.00	1380/1550	4000/4800	68
			AC400		145/250	0.50/0.52			
			AC440		135/175	0.42/0.45			

Dimensions



PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

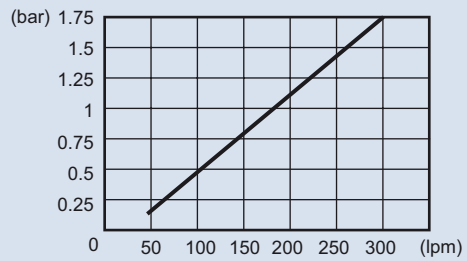
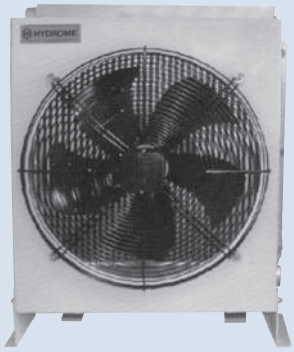


PLATE-FIN HEAT EXCHANGER

To avoid the leakage caused by peak pressure, an Anti-Burst Valve or By-Pass Valve should be always mounted. Off-Line cooling is strongly recommended. Pumping the oil from the tank to the heat exchanger with a separated cooling pump. Please refer to page 218.



How to order

AH1890 - C A※

1 2 3

1	Model Fan dia: 18"x1
2	With fan case
3	Voltage A2: AC230 / 400V A4: AC440V

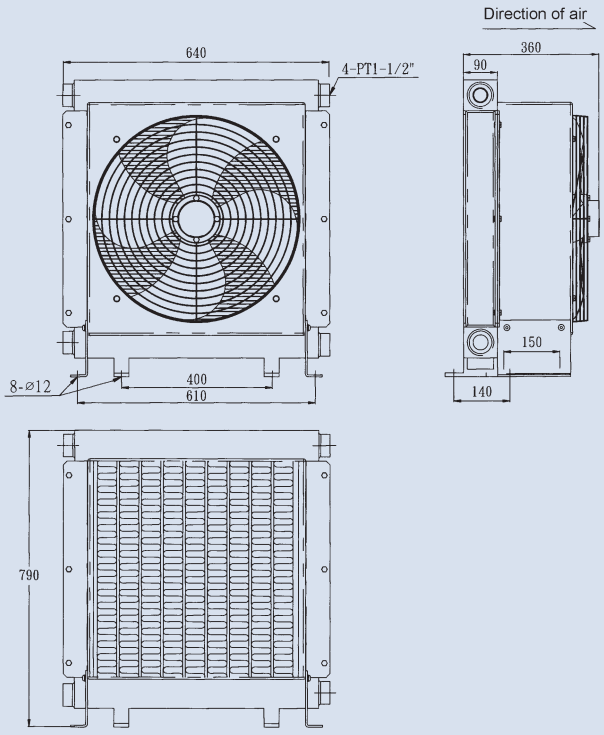
Specifications

Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
	1-1/2"	30~250	20	26000	30~50	52

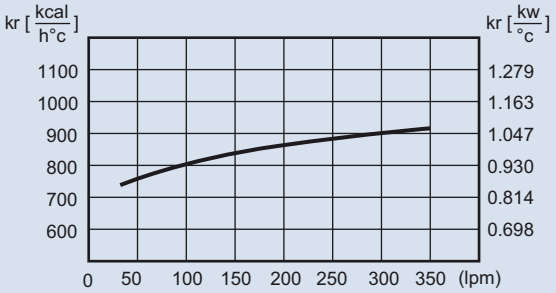
Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH1890	3	54	AC230	50/60	250/350	1.10/1.20	1380/1550	5200/6200	72
			AC400		250/350	0.65/0.70			
			AC440		210/300	0.45/0.51			

Dimensions

Unit: mm



PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

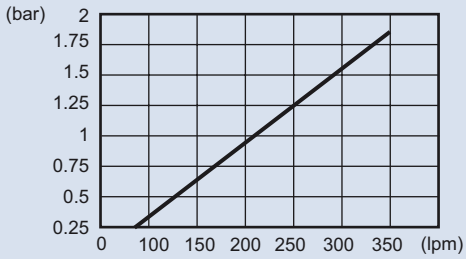


PLATE-FIN HEAT EXCHANGER

To avoid the leakage caused by peak pressure, an Anti-Burst Valve or By-Pass Valve should be always mounted. Off-Line cooling is strongly recommended. Pumping the oil from the tank to the heat exchanger with a separated cooling pump. Please refer to page 218.

How to order

AH2342 - C A※

1 2 3

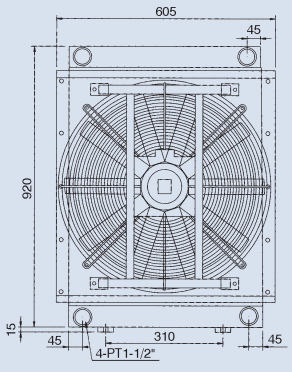
1	Model Fan dia: 23"x1
2	With fan case
3	Voltage AC210~230 / 360~400 (50Hz) AC240~270 / 420~460 (60Hz)

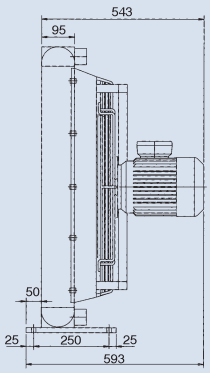
Specifications

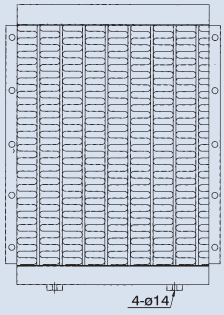
Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Hydraulic System (HP)	Weight (kg)
AH2342	1-1/2"	50~250	20	37000	50~75	80

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AH2342	3	55	AC210~230 / 360~400	50	1500	6.2~6.3 / 2.6~3.8	1400	7600	90
			AC240~270 / 420~460	60	17500	6.2~6.3 / 2.6~3.8	1680	9120	

Dimensions

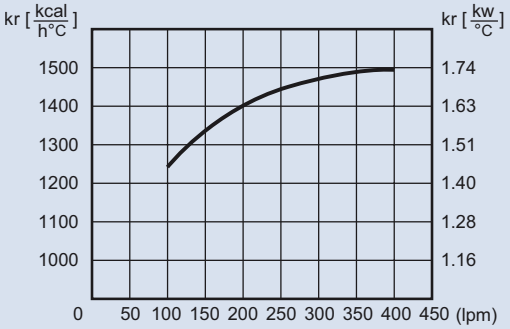




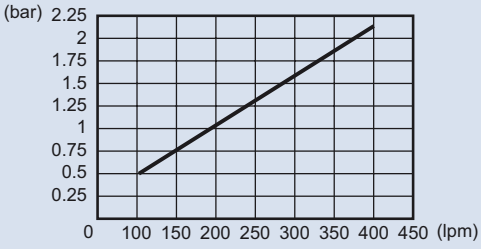


Unit: mm

PERFORMANCE DIAGRAM



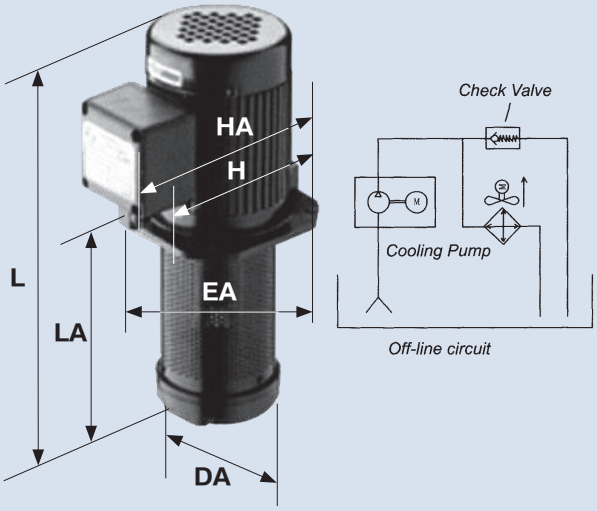
LOSS OF PRESSURE (at 32 Cst)



COOLING PUMP & ANTI-BURST VALVE

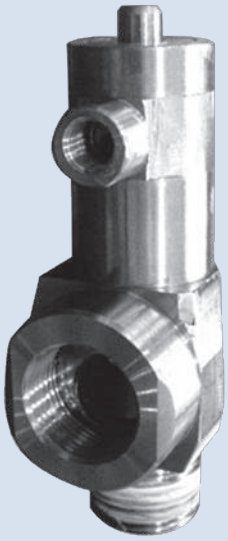
Dimensions

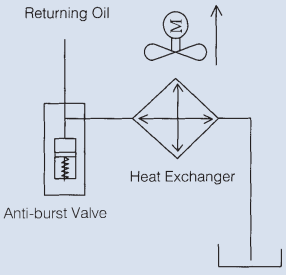
Cooling pump-for off-line circuit



Model	Motor (HP)	Flow Rate (lpm)	L	LA	DA	H	HA	EA	Port (Rc/PT)
TC-6130	1/6	20	275	130	90	124	160	128	1/2"
TC-6180	1/6	20	325	180	90	124	160	128	1/2"
TC-4155	1/4	50	341	155	126	160	191	158	3/4"
TC-4220	1/4	50	406	220	126	160	191	158	3/4"
TC-4350	1/4	50	536	350	126	160	191	158	3/4"
TC-2180	1/2	80	385	180	126	170	196	171	1"
TC-2290	1/2	80	495	290	126	170	196	171	1"
TC-1180	1	120	400	180	151	180	191	185	1"
TC-1240	1	120	460	240	151	180	196	185	1"
TC-1380	1	120	600	380	151	180	196	185	1"

Anti-burst valve - effictive for peak pressure





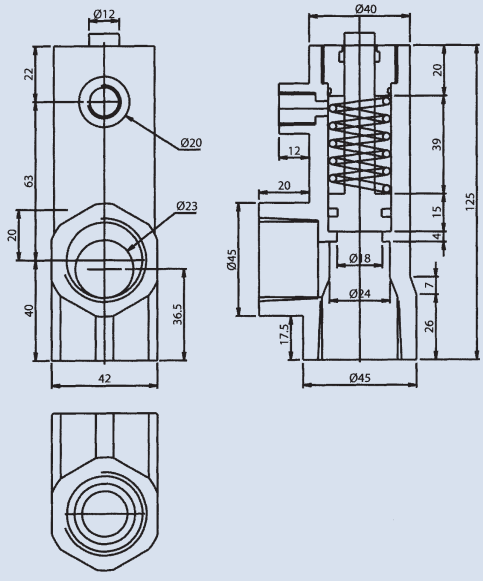


PLATE-FIN HEAT EXCHANGER

INSTALLATION & MAINTENANCE

AH cooler fittings

Option 1. Off-line circuit is strongly recommended

Option 2. Use patent product anti-burst Valve Fig.1 / Fig.2

Option 3. By-pass with check valve (not recommend) Fig.3 / Fig.4

Special notes for option 3

1. The working pressure for AH series is 20 bar.
2. Be carefully the hammering and pulsations pressure which may cause irreversible damage to the cooler.
3. The spring of check valve may crack after a long period of working.

Piping caution

1. Outlet pipe's diameter must match with diameter of the port, and cannot be shrank.
2. Using straight joint or flexible pipe to reduce the feedback resistance.
3. More less of curve and curve angles should be better.

Fig. 1

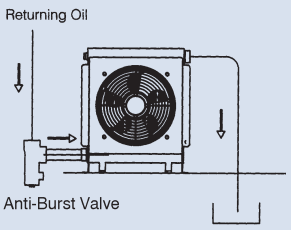


Fig. 2

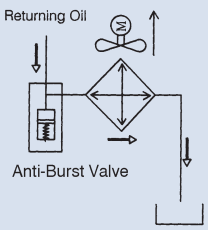


Fig. 3

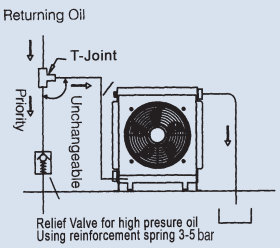
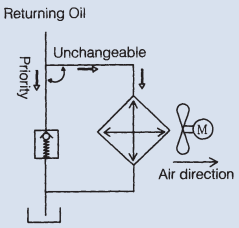


Fig. 4



Conclusion: The feedkback oil goes as smooth or fast as possible, to get a better heat rejection.

Installation

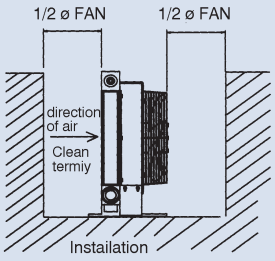
The cooler should be mounted at clean environment where is well ventilated area, keep fan diameter free from both cooling side and hot side.

Avoid locating the cooler at areas where can cause obstruction of air intake or exhaust vent.

Avoid locating the cooler at environment with atmosphere contactining corrosive or flammable dusts, oil mist, conductive power (such as carbon or metal).

If mounted in a closed area, sufficient ventilation must be provided. Heat transfer from the cooling system to ambient air may not increase room temperature, if these conditions are not met, air ducts have to be installed between cooling system and the outside to provide sufficient ventilation.

Check the supply voltage and frequency correspond to the rating plate.



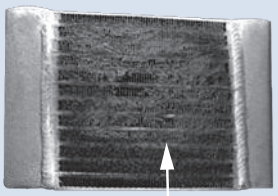
Maintenance

Before maintenance, please make sure to keep the power off.

Ensure that there are no obstacles to the flow of air, either at the intake or at the outlet from the core, please maintain the cooler termly for a longer life.

External cleaning of air side

This can be done by either washing the cooler with a mild cleaner (compatible with aluminum), or with compressed air. A power spray washer works well. Care should be taken not to damage the fins. The direction of stream shall be parallel to the fins in order not to damage it. The cooler needs to be dried completely before restarting operation.



Dust on cooling air inlet side

Internal cleaning of cooler side

The cooler should be disconnected, and a suitable cleaning agent used for removing the type of deposit, yet safe on aluminum should be circulated through the cooler until clean. After cleaning procedure, the cleaning medium shall be completely drained and blown out by means of compressed air.

CALCULATION OF AIR-OIL HEAT EXCHANGER INSTALLED ON HYDRAULIC SYSTEM

Introduction:

First of all, the choice of cooling system needs finding out the heat quantity of the hydraulic system, and furthermore we can design the appropriate cooling mode and ability for the requirements of clients.

The quantity of producing heat on hydraulic system can not be estimated by calculation, because of the different of components and elements, using frequency and the design of circuit make this impossible.

1. Choosing the cooler rely on flow rate is only a basic condition, because we choose the input motor horse power by considering the pressure of pump and flow rate in the meantime.
2. The selecting of cooler depended on the quantity of producing heat matches up with the cooling capability on the system.
3. According to the actuality experience, we could count up the appraised value by inputting 70% electricity energy into the heat quantity. (different engineer and elements make this different.)
4. If we are using more delicate components and less heat quantity product, then the 70% heat quantity could be lower to 60% or much lower. Please confirm to your distributor.
5. If there is hydraulic motor in the circuit, then we should calculate the heat quantity up to 100%.

Data required

1. Simplify

Contrast the input horse power with hydraulic horse power in the performance table, and you could find out the applicable cooler.

2. Calculate

N=installed power in the system (kW)
Q=heat to be dissipated (kcal/h)
To=maximum allowed oil temperature (ºC)
Tamb=ambient temperature (ºC)
Kr: Means the required specific performance of the heat exchanger
Kr=Q/ΔT, ΔT is the difference between oil inlet temperature and summer ambient temperature, while Q is the quantity of heat to be dissipated which can be easily calculated considering 60~100% of installed power.

Example (hydraulic):

N=20 kW To=50 ºC Tamb=35 ºC
Q=70% x 20 kw=14 kW=12040 kcal/h (1kW=860 kcal/h)
ΔT=50-35=15 ºC
Kr=12040 kcal/h÷15 ºC=802 kcal/h ºC=0.93 kW/ºC
The choice of the correct cooler is made by using the diagrams.
You will find in our technical catalogues.

Equivalents among main units

1HP=635kcal/h 1kW=860kcal/h 1cSt=1 mm^2/sec 1BTU=0.25 kcal/h 1bar=100kpa

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