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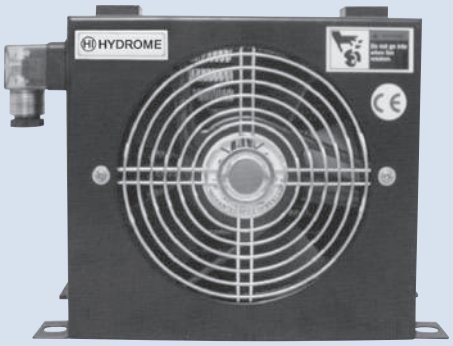
PLATE-FIN HEAT EXCHANGER

Suitable for the drain port in high-pressure variable piston pump and vane pump. Or off-line circuit.



How to order

AW0607 - C A(D)※

1 2 3

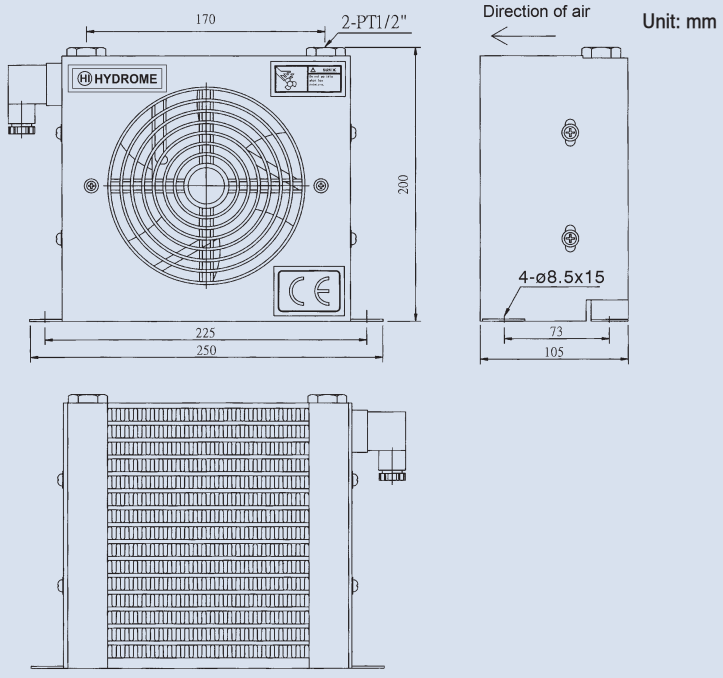
1	Model	Fan dia: 6"x1 with temperature protection switch
2	With fan case	
3	Voltage	A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V

Specifications

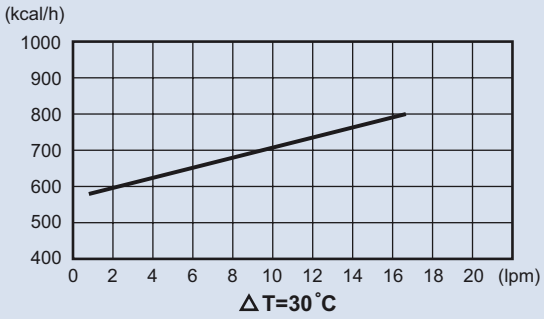
Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Weight (kg)
	1/2"	1~20	15	800	3.3

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AW0607	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	-	19.2	1.6	3350	500	51
			DC24			0.8		420	

Dimensions



PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

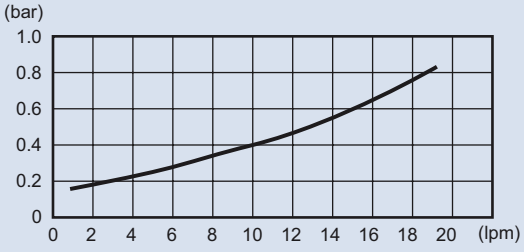
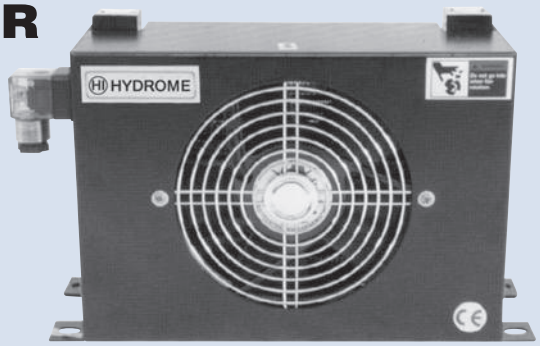


PLATE-FIN HEAT EXCHANGER

Suitable for the drain port in high-pressure variable piston pump and vane pump. Or off-line circuit.



How to order

AW0608 - C A(D)※

1 2 3

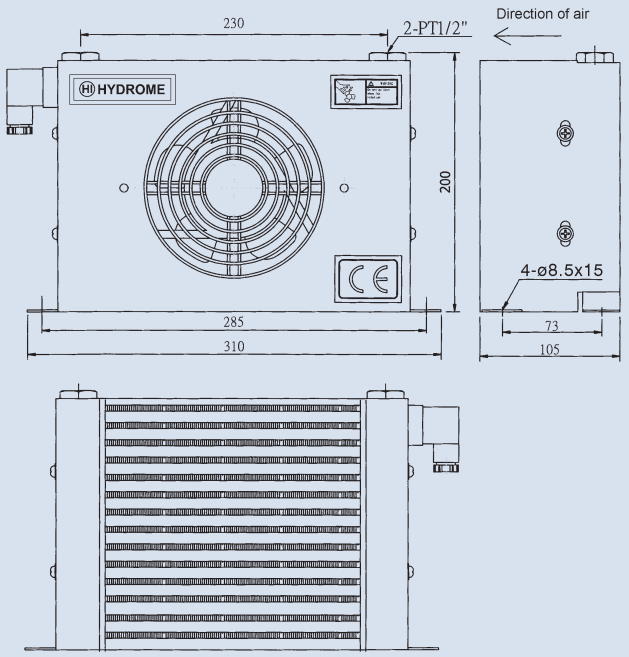
1	Model	Fan dia: 6"x1 with temperature protection switch
2	With fan case	
3	Voltage	A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V

Specifications

Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Weight (kg)
	1/2"	1~20	15	900	3.7

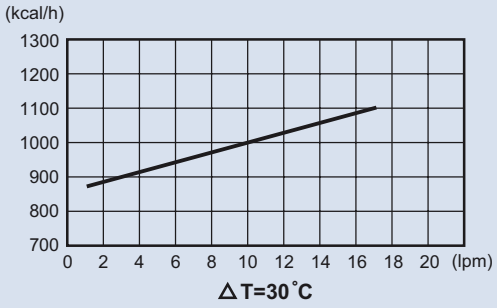
Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
	Phase	IP							
AW0608	Single	54	AC115	50/60	45/37	0.6/0.5	2850/3450	457/553	42/48
			AC230			0.27/0.23			
			AC380		30/25	0.16/0.14			
	-	-	DC12	-	19.2	1.6	3350	500	51
			DC24			0.8		420	

Dimensions



Unit: mm

PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

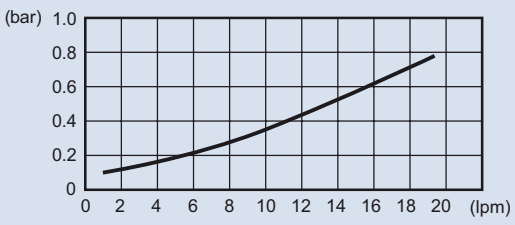


PLATE-FIN HEAT EXCHANGER

Suitable for the drain port in high-pressure variable piston pump and vane pump. Or off-line circuit.

How to order

AW0608L - 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

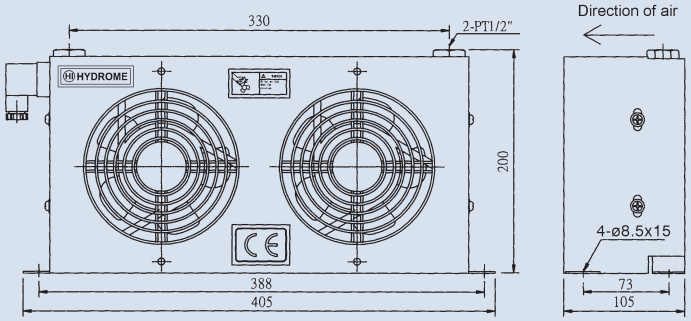
Specifications

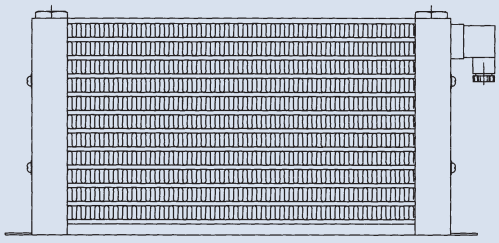
Model	Port Size (PT)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity kcal/h (Δt=30 °C)	Weight (kg)
AW0608L	1/2"	1~20	15	1550	5.2

Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)
Phase	IP							
Single	54	AC115	50/60	90/74	1.2/1	2580/3450	914/1106	42/48
		AC230			0.54/0.46			
		AC380		60/50	0.32/0.28			
-	-	DC12	-	38.4	3.2	3350	1000	51
		DC24			1.6		840	

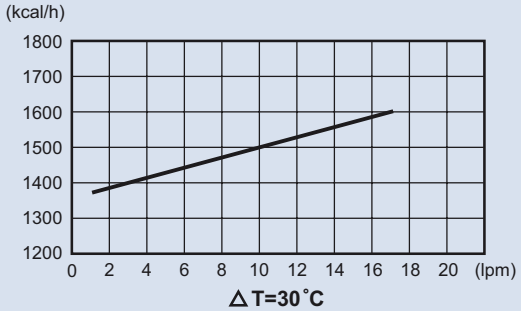
Dimensions

Unit: mm





PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

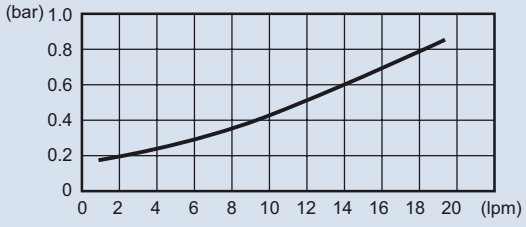
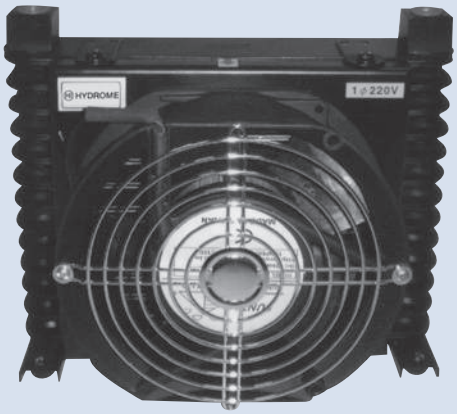


PLATE-FIN HEAT EXCHANGER

Only suitable for the drain port in variable vane pump which working pressure is under 70 bar. (drain only)



How to order

AL※ - A(D)※

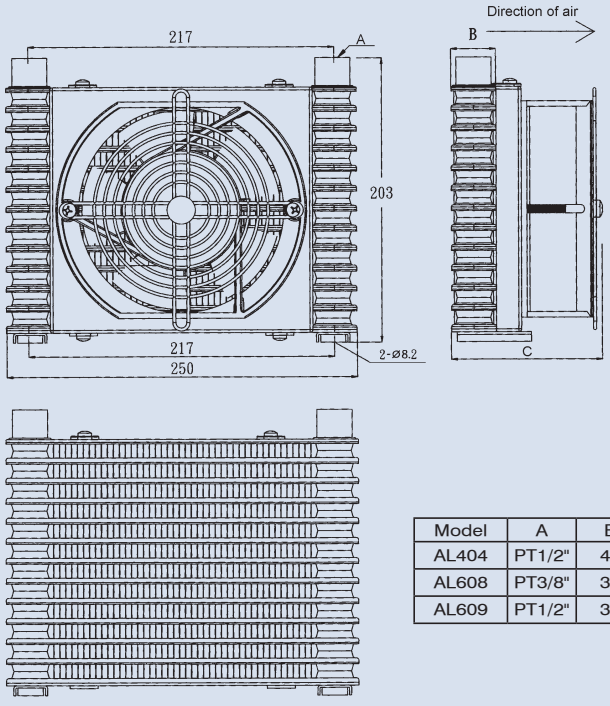
1 2

1	Model	Fan dia: 6"x1 with temperature protection switch AL404 PT1/2" AL608 PT3/8" AL609 PT1/2"
2	Voltage	A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V

Specifications

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity (kcal/h) Δt=30 °C	Weight (kg)
	Phase	IP											
AL404	Single	54	AC115	50/60	45/37	0.6/0.5	2850/3450	457/553	42/48	1~10	10	1100	2.25
			AC230			0.27/0.23							
AL608			AC380		30/25	0.16/0.14						950	2
AL609	-	-	DC12	-	19.2	1.6	3350	500	51			950	2
			DC24			0.8		420					

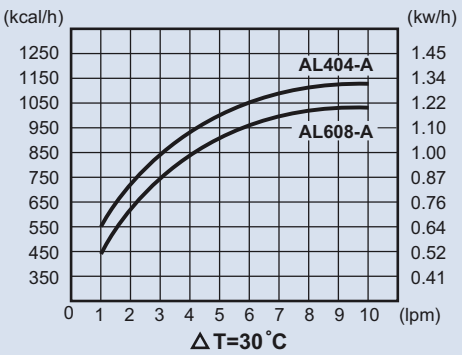
Dimensions



Unit: mm

Model	A	B	C
AL404	PT1/2"	42	120
AL608	PT3/8"	32	110
AL609	PT1/2"	32	110

PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

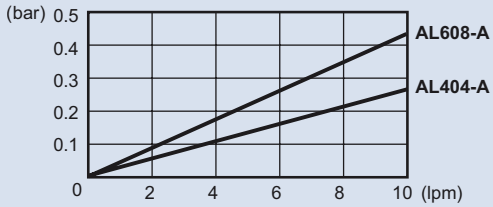


PLATE-FIN HEAT EXCHANGER

Only suitable for the drain port in variable vane pump which working pressure is under 70 bar. (drain only)

How to order

AL※ - C A(D)※

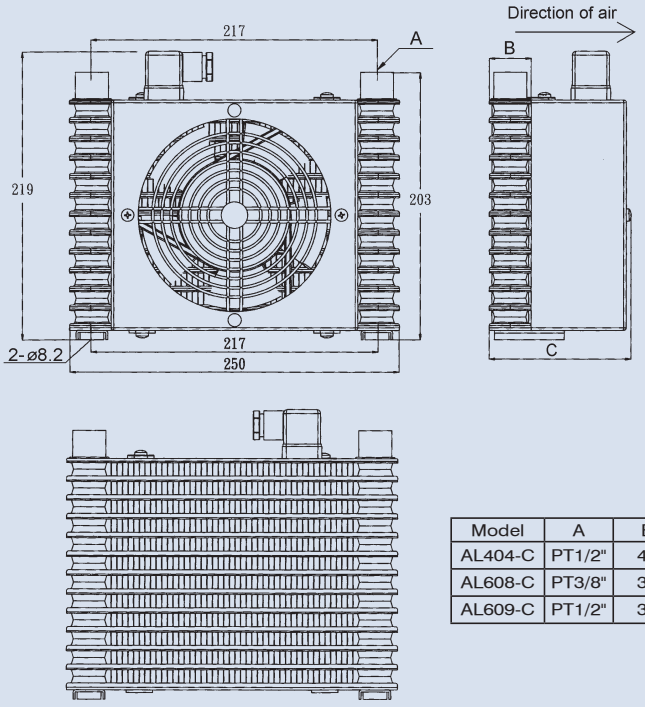
1 2 3

1	Model Fan dia: 6"x1 with temperature protection switch AL404 PT1/2" AL608 PT3/8" AL609 PT1/2"
2	With fan case
3	Voltage A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V

Specifications

Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity (kcal/h) Δt=30 °C	Weight (kg)
	Phase	IP											
AL404-C	Single	54	AC115	50/60	45/37	0.6/0.5	2850/3450	457/553	42/48	1~10	10	1200	2.6
			AC230			0.27/0.23							
AL608-C			AC380		30/25	0.16/0.14						1050	2.25
AL609-C	-	-	DC12	-	19.2	1.6	3350	500	51			1050	2.25
			DC24			0.8		420					

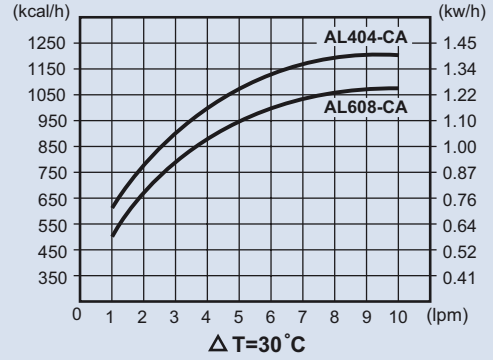
Dimensions



Unit: mm

Model	A	B	C
AL404-C	PT1/2"	42	120
AL608-C	PT3/8"	32	110
AL609-C	PT1/2"	32	110

PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

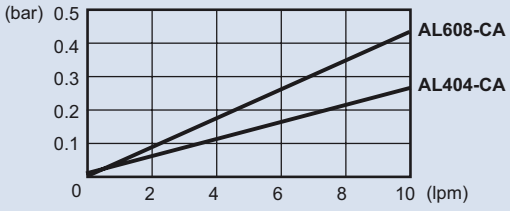


PLATE-FIN HEAT EXCHANGER

Only suitable for the drain port in variable vane pump which working pressure is under 70 bar. (drain only)

How to order

AL※ - 4 A※

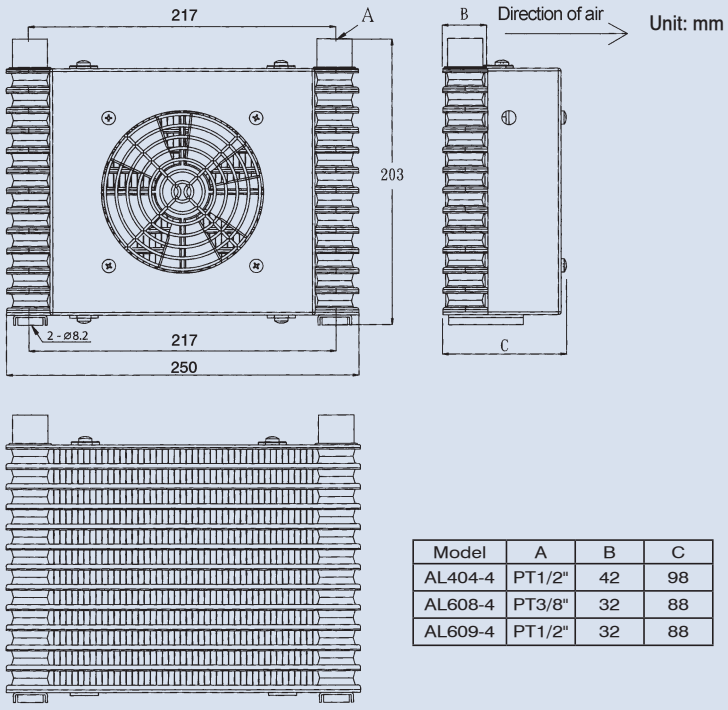
1 2 3

1	Model	With temperature protection switch AL404 PT1/2" AL608 PT3/8" AL609 PT1/2"
2	Fan dia: 4: 4"	
3	Voltage	A1: AC115V A2: AC230V

Specifications

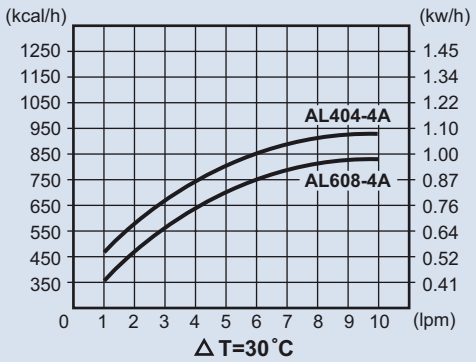
Model	Motor		Voltage (V)	Frequency (Hz)	Power (W)	Current (A)	Rated Speed (r.p.m)	Air Flow m³/h	Noise dB (A)	Oil Flow (lpm)	Max. Pressure (bar)	Capacity (kcal/h) Δt=30 °C	Weight (kg)
	Phase	IP											
AL404-4	Single	54	AC115	50/60	14/12	0.26/0.22	2600/2800	248/252	35	1~10	10	900	1.75
			AC230			0.13/0.11							
AL608-4	-	-	-	-	-	-	-	-	-			800	1.5
AL609-4												800	1.5

Dimensions



Model	A	B	C
AL404-4	PT1/2"	42	98
AL608-4	PT3/8"	32	88
AL609-4	PT1/2"	32	88

PERFORMANCE DIAGRAM



LOSS OF PRESSURE (at 32 Cst)

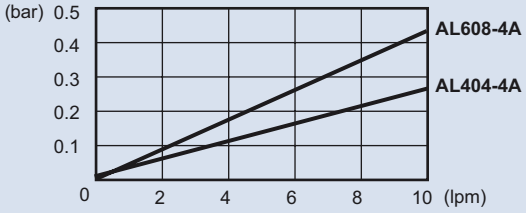


PLATE-FIN HEAT EXCHANGER

Only suitable for the drain port in variable vane pump which working pressure is under 70 bar. (drain only)

How to order

AL	※
1	2

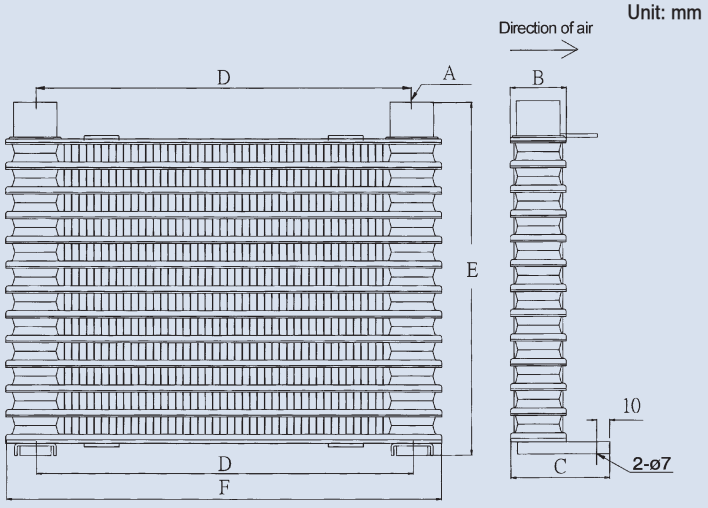
1	Model
2	404 PT1/2" 608 PT3/8" 609 PT 1/2"

Specifications

Model	Oil Flow (lpm)	Max. Pressure (bar)	Weight (kg)
AL404	1~10	10	1
AL608			0.75
AL609			0.75

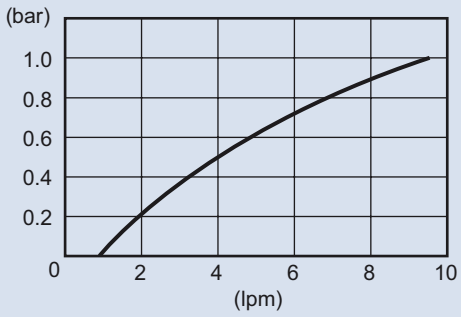
Dimensions

Unit: mm



Model	A	B	C	D	E	F
AL404	PT1/2"	42	66	217	203	250
AL608	PT3/8"	32	56	217	203	250
AL609	PT1/2"	32	56	217	203	250

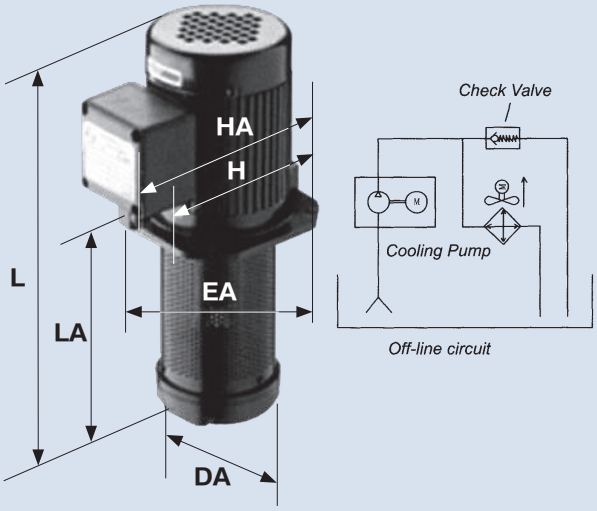
LOSS OF PRESSURE (at 32 Cst)



COOLING PUMP & ANTI-BURST VALVE

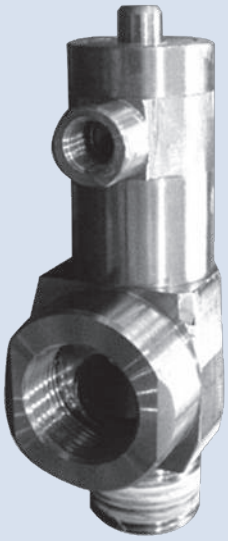
Dimensions

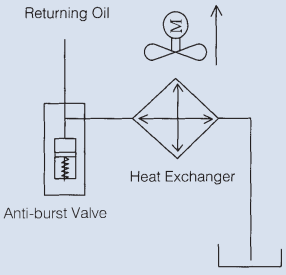
Cooling pump-for off-line circuit



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





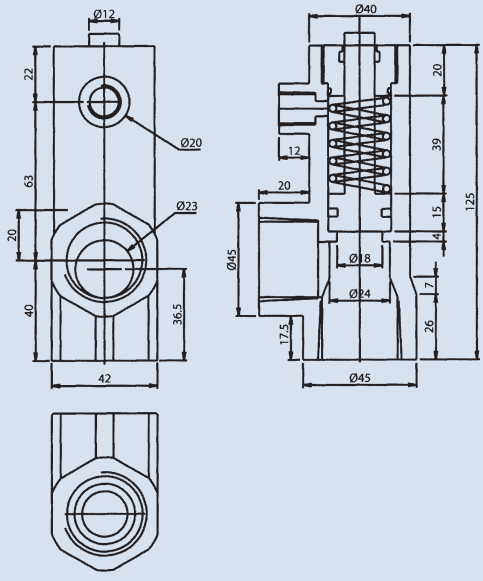


PLATE-FIN HEAT EXCHANGER

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

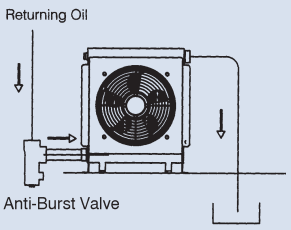


Fig. 2

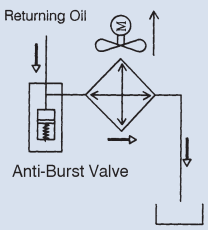


Fig. 3

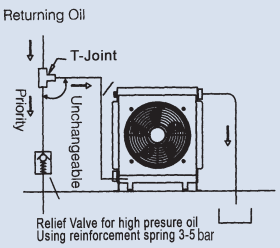
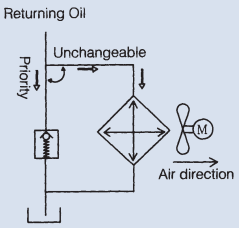


Fig. 4



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

Installation

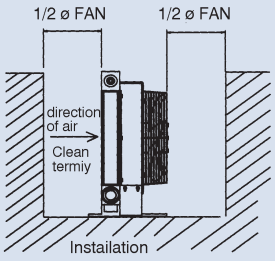
The cooler should be mounted at clean environment where is well ventilated area, keep fan diameter free from both cooling side and hot side.

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.



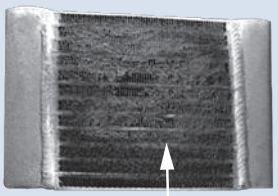
Maintenance

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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