



Air-Oil Plate-Fin Heat Exchanger

Nowadays, more and more air cooling system were applied in oil cooling system because water cooling cost is too high and some areas are not easy to secure water. Even more water treatment and discharge is also very difficult and expensive. Air-Oil Plate-Fin heat exchanger has the characteristics of water-free, clean, compact, light weight and very easy for piping.

Dynatec provides 3 different series Air-Oil Plate-fin Heat Exchanger. These heat exchanger could be applied in drain system or return line systems with high quality and perfect cooling efficiency.

AL series: For Low Pressure Variable pump drain circuit.

Maximum Working pressure: 10 bar, Flow rate: 1-10 L/min.

AW series: For High pressure Variable pump drain circuit.

Maximum Working pressure: 15 bar, Flow rate: 1-20 L/min.

AH series: For Return line circuit or drain circuit.

Maximum Working pressure: 20 bar, Flow rate: 5 - 300 L/min.

■ Installation

1. Air-oil heat exchanger should be mounted in a position that could avoid vibration and impact, and make sure the air can be flow freely. Prevents to mount it close to other heat source. Please refers to figure no. 1.
2. When use the heat exchanger, a by-pass circuit was recommend. Especially when use our AH series as return line cooling system. Please refers to figure no. 2. This by-pass circuit could protects heat exchanger when surge pressure happen.
3. When fastening the adaptor of In out ports, please use an Adjustable Wrenches to hold-on the ports. Because Both ports also made by aluminum, and could be damaged when without a tool to hold-on when twist.
4. For keeping the heat exchanger in high efficiency, please clean the radiator once a week if possible. It can be done by compressed air. Please be sure the jet runs in usual direction and the electric motor must be disconnect to the power and in good protection.

■ How to Choose your heat exchanger

The Overall efficiency of most hydraulic system is app.. 70 to 85 %, It means that 15 to 30% of power convert to heat and must be dissipated by the heat exchanger. When choosing a heat exchanger, an over estimate of 15 to 20% is necessary. When dust cover the fin, the cooling efficiency will be lower.

■ Formula

N = installed power in the system (kW)

Q = heat to be dissipated (kcal/h)

T_o = maximum allowed oil temperature ($^{\circ}\text{C}$)

T_{amb} = ambient temperature ($^{\circ}\text{C}$)

Kr means the required specific performance of the heat-exchanger

$Kr = Q / \Delta T$, dove 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 20-30% of installed power.

■ Example

$N = 20 \text{ kW}$ $T_o = 50^{\circ}\text{C}$ $T_{amb} = 30^{\circ}\text{C}$

$Q = (30\% + 20\%)20 = 10 \text{ kW} = 8600 \text{ kcal/h}$

$T = 50 - 30 = 20^{\circ}\text{C}$

$Kr = 8600 / 20 = 430 \text{ kcal/h}^{\circ}\text{C}$

The choice of the correct cooler is made using the diagrams you will find in our technical catalogues.

■ Equivalents among main units

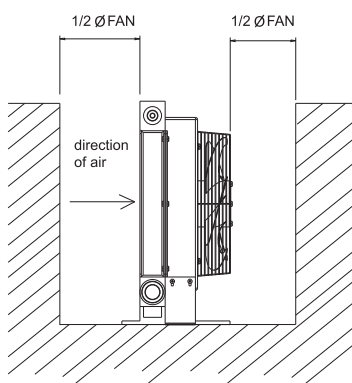
1 HP = 635 kcal/h

1 kW = 860 kcal/h

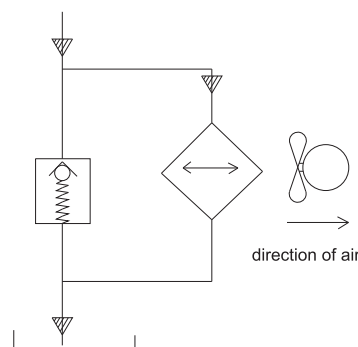
1 BTU = 0.35 kcal/h

1 cSt = 1 mm²/sec

■ Figure no. 1



■ Figure no. 2





AL Series Plate-Fin Heat Exchanger - Drain Type

Characteristic:

1. AL series are special designed for Drain cooling system.
Normally applied in the drain pipe of variable displacement pumps which working pressure is under 70 bar.
2. High density of fins are made by aluminum, increasing the cooling surface and very light of weight.
3. There are different types of electric fan and cover for chosen, all electric motor has CE certification and very low noise when operation.
4. Air filter is also available when necessary.
5. Maximum working pressure 10 bar.



AL-※-CAF



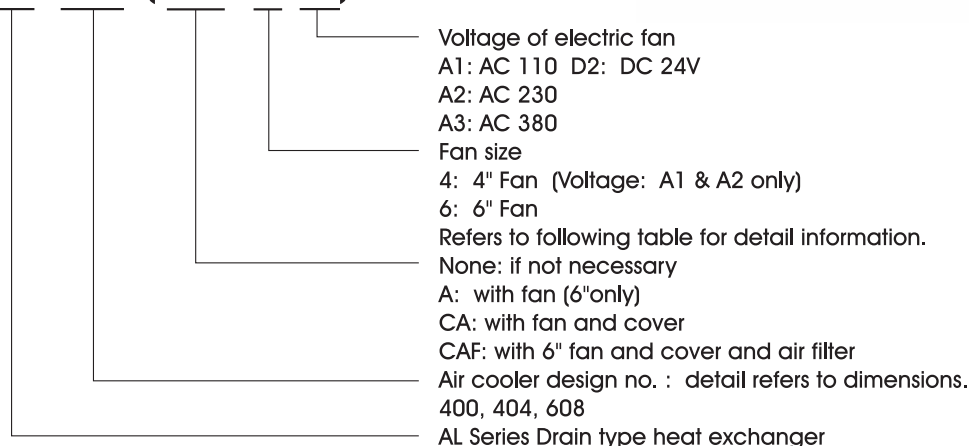
AL-※-A



AL-※-CA

■ HOW TO ORDER

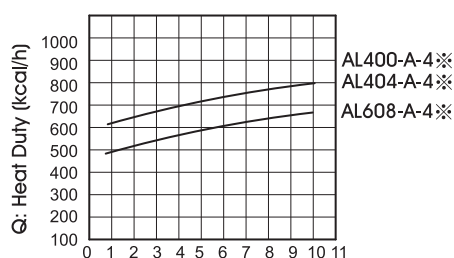
AL - 608 -(CAF - 6 A1)



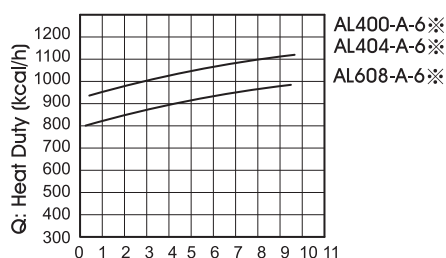
■ Performance Curve

Flow Rate: AL-400/404: 0-12 l/min AL-608: 0-10 l/min

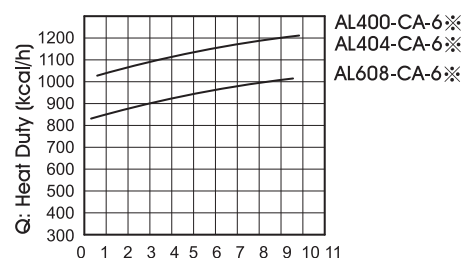
AL-※-A-4※



AL-※-A-6※



AL-※-CA-6※



■ Electric Fan

Model no.	Fan Size	Voltage	Pole	Hz	Horse power	Phase
4A1:	4"	AC115V	1	50/60	14W/12W	single
4A2:	4"	AC230V	1	50/60	14W/12W	single
6A1:	6"	AC115V	1	50/60	45W/37W	single
6A2:	6"	AC230V	1	50/60	45W/37W	single
6A3:	6"	AC380V	1	50/60	30W/25W	single
6D2:	6"	DC24V	1	-	-	single



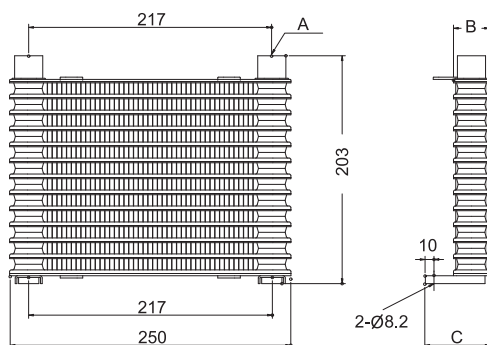
AL Series Plate-Fin Heat Exchanger - Drain Type

■ DIMENSIONS:

UNIT: mm

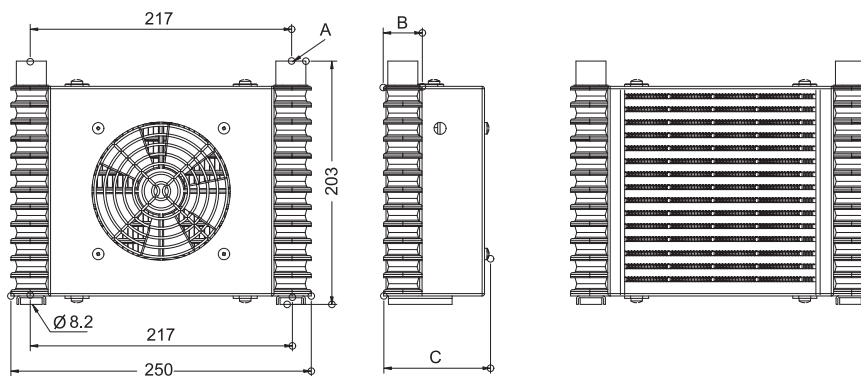
AL-400, 404, 608

	A PT/RC	B	C	Weight
AL400	3/8"	42	66	1
AL404	1/2"	42	66	1
AL608	3/8"	32	56	0.75



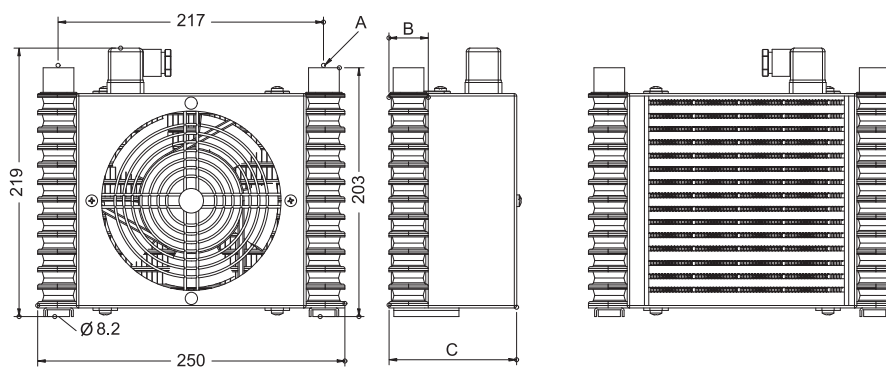
AL-※-CA-4

	A PT/RC	B	C	Weight
AL400	3/8"	42	98	1.75
AL404	1/2"	42	98	1.75
AL608	3/8"	32	88	1.5



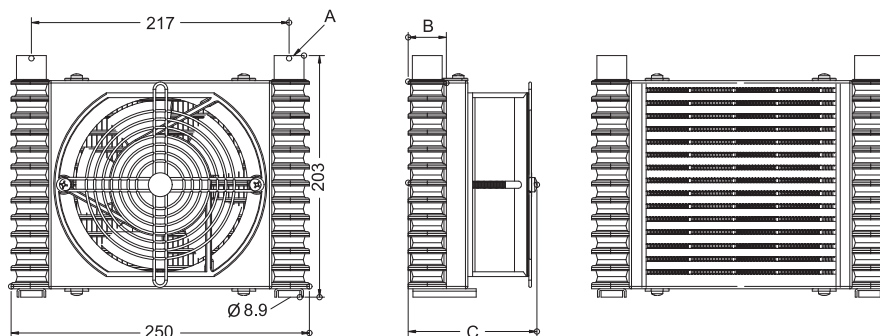
AL-※-CA-6

	A PT/RC	B	C	Weight
AL400	3/8"	42	114	2.85
AL404	1/2"	42	114	2.85
AL608	3/8"	32	104	2.6



AL-※-A-6

	A PT/RC	B	C	Weight
AL400	3/8"	42	118	2.25
AL404	1/2"	42	118	2.25
AL608	3/8"	32	108	2





AW Series Plate-Fin Heat Exchanger - Drain type

Characteristic:

1. AW series are special designed for high pressure variable displacement pump drain cooling system.
2. High density of fins are made by aluminum, increasing the cooling surface and very light of weight. "
3. Three types of capacity for chosen.
4. All electric motor has CE certification and very low noise when operation.
5. Maximum working pressure 15 bar.



AW-607



AW-608



AW-608L

■ HOW TO ORDER

AW - 608 -CA - A1

Voltage of electric fan

A1: AC 110 D2: DC 24V

A2: AC 230

A3: AC 380

Refers to following table for detail information.

CA: with fan and cover

Air cooler design no. : For detail, refers to dimensions.

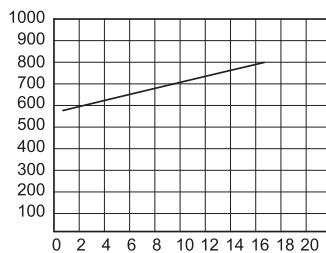
607, 608, 608L

AW Series heat exchanger

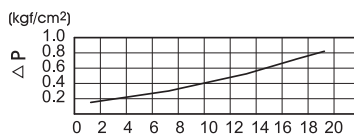
■ Performance Curve

AW-607-CA

Q: Heat Duty (kcal/h)



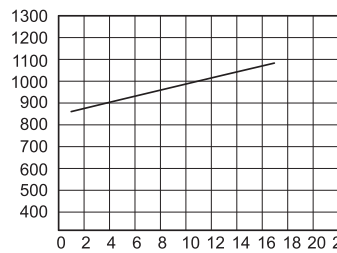
VO: Oil flow rate L/Min $\Delta T=30^{\circ}\text{C}$



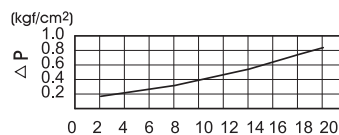
VO: Oil flow rate L/Min

AW-608-CA

Q: Heat Duty (kcal/h)



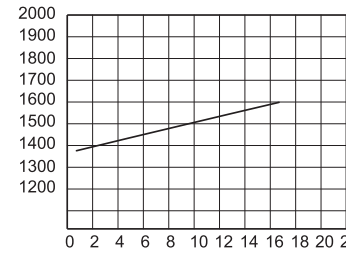
VO: Oil flow rate L/Min $\Delta T=30^{\circ}\text{C}$



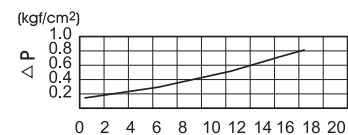
VO: Oil flow rate L/Min

AW-608L-CA

Q: Heat Duty (kcal/h)



VO: Oil flow rate L/Min $\Delta T=30^{\circ}\text{C}$



VO: Oil flow rate L/Min

■ Electric Fan

Model no.	Fan Size	Voltage	Pole	Hz	Horse power	Phase
6A1:	6"	AC115V	1	50/60	45W/37W	single
6A2:	6"	AC230V	1	50/60	45W/37W	single
6A3:	6"	AC380V	1	50/60	30W/25W	single
6D2:	6"	DC24V 1	1	-	-	single

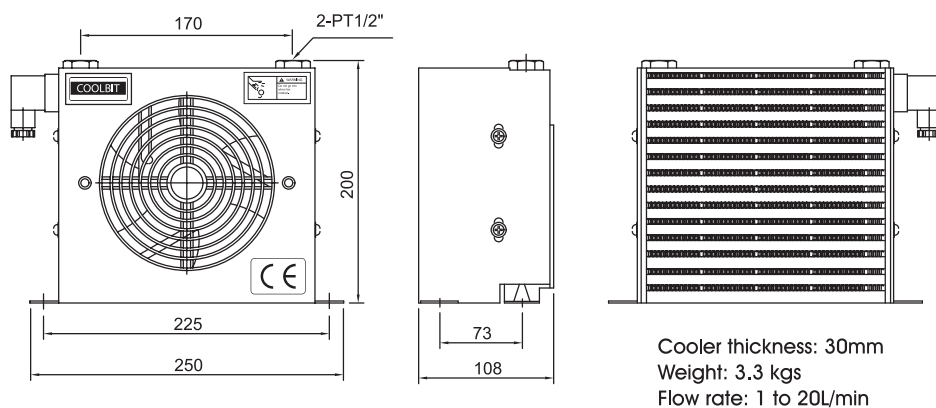


AW Series Plate-Fin Heat Exchanger - Drain type

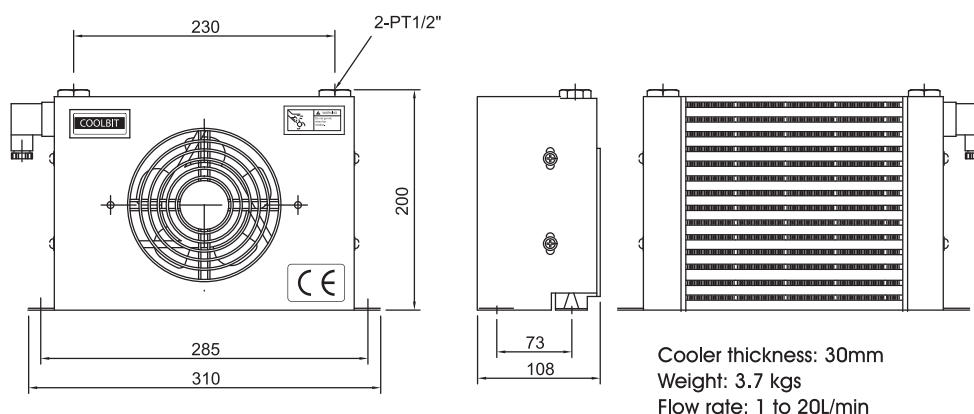
■ DIMENSIONS:

UNIT: mm

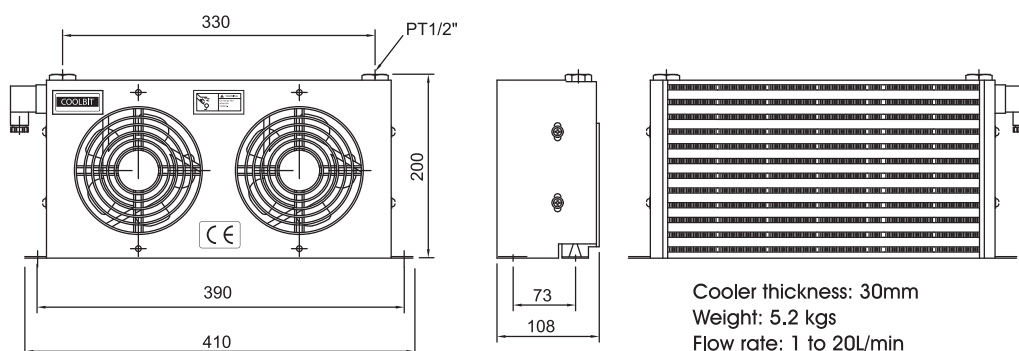
AW-607



AW-608



AW-608L





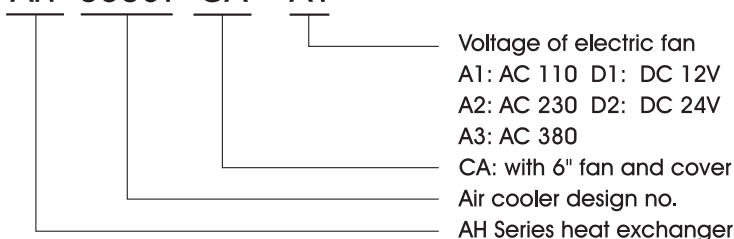
AH Series Plate-Fin Heat Exchanger - Drain type

Characteristic:

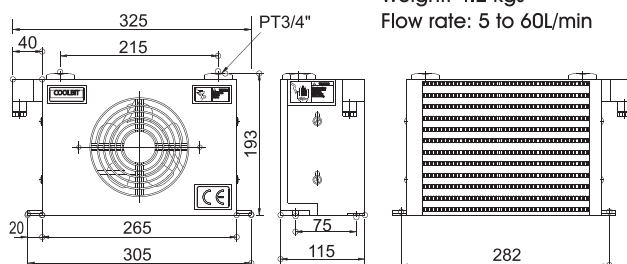
1. AH series are special designed for return line system,
Maximum working pressure reaches 20 bar.
2. High density of fins are made by aluminum, increasing
the cooling surface and very light of weight.
3. Three types of capacity for chosen.
4. All electric motor has CE certification and very low noise
when operation.
5. Maximum working pressure 15 bar.

■ HOW TO ORDER

AH -0608T -CA - A1

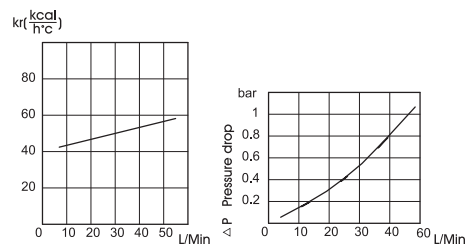


UNIT: mm



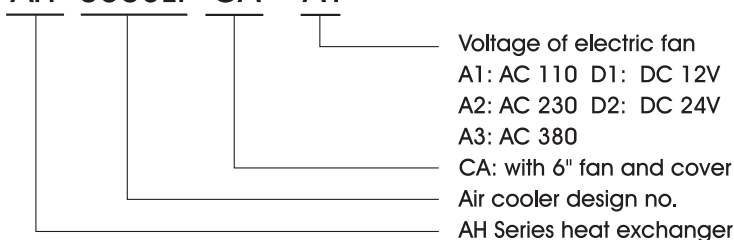
Cooler thickness: 45mm
Weight: 4.2 kgs
Flow rate: 5 to 60L/min

■ Performance Curve

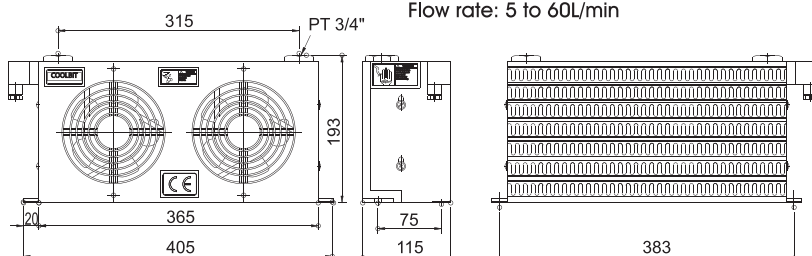


■ HOW TO ORDER

AH -0608LT -CA - A1

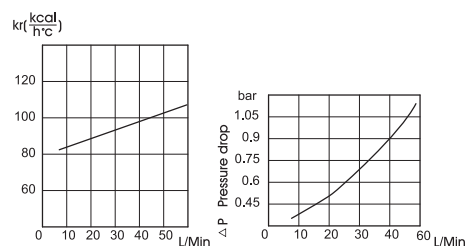


UNIT: mm



Cooler thickness: 45mm
Weight: 6 kgs
Flow rate: 5 to 60L/min

■ Performance Curve





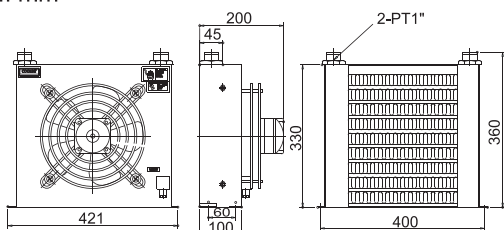
AH Series Plate-Fin Heat Exchanger - Drain type

AH - 1012 - CA - A1

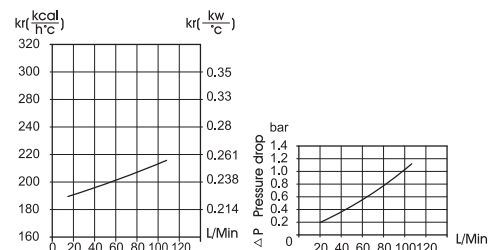
Voltage of electric fan
A1: AC 110 D1: DC 12V
A2: AC 230 D2: DC 24V
CA: with 10" fan and cover
Air cooler design no.
AH Series heat exchanger



UNIT: mm



Cooler thickness: 45mm
Weight: 9.5 kgs
Flow rate: 10 to 100L/min

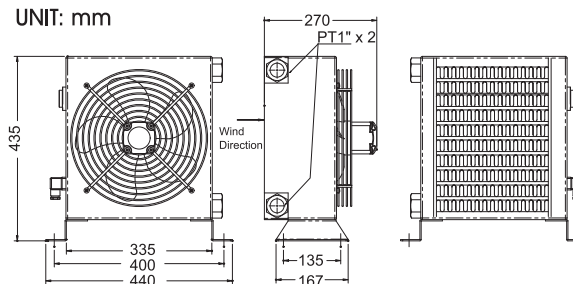


AH - 1212 - CA - A1

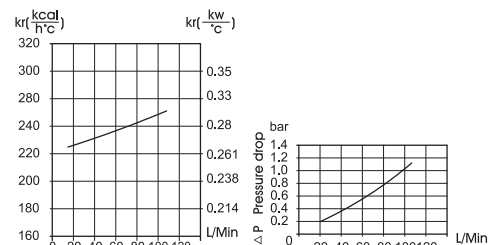
Voltage of electric fan
A1: AC 110 D1: DC 12V
A2: AC 230 D2: DC 24V
A3: AC 380
CA: with 12" fan and cover
Air cooler design no.
AH Series heat exchanger



UNIT: mm



Cooler thickness: 45mm
Weight: 15 kgs
Flow rate: 10 to 100L/min

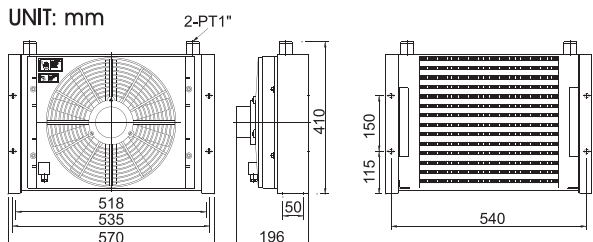


AH - 1417 - A - A1

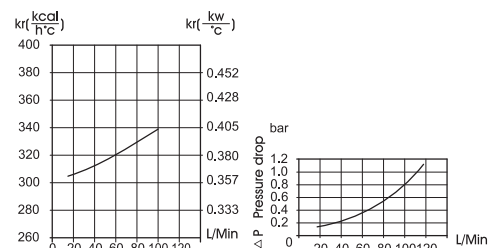
Voltage of electric fan
A1: AC 110 D1: DC 12V
A2: AC 230 D2: DC 24V
CA: with 14" fan and cover
Air cooler design no.
AH Series heat exchanger



UNIT: mm



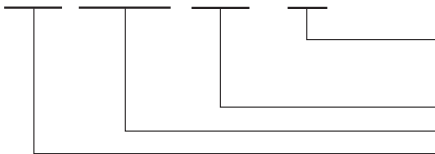
Cooler thickness: 45mm
Weight: 10.5 kgs
Flow rate: 10 to 100L/min



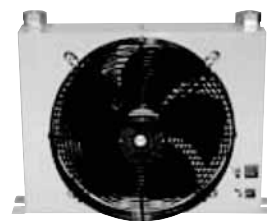


AH Series Plate-Fin Heat Exchanger - Drain type

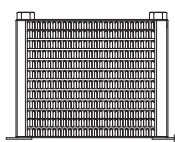
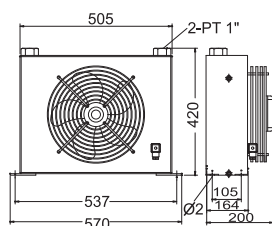
AH - 1418 - CA - A2



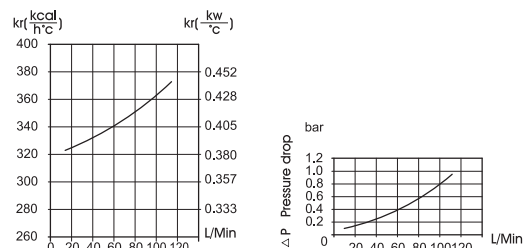
Voltage of electric fan
A2: AC 230 A4: AC 400V
** 3 pole, 1/2 hp
CA: with 14" fan and cover
Air cooler design no.
AH Series heat exchanger



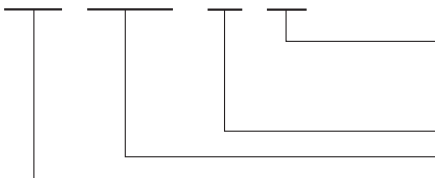
UNIT: mm



Cooler thickness: 50mm
Weight: 30 kgs
Flow rate: 10 to 100L/min



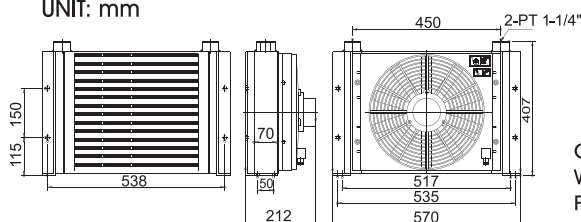
AH - 1470 - A - A1



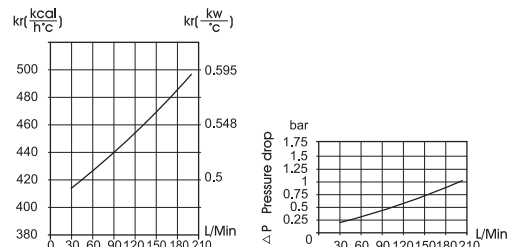
Voltage of electric fan
A1: AC 110 D1: DC 12V
A2: AC 230 D2: DC 24V
**1 pole, 50W, single phase
CA: with 14" fan and cover
Air cooler design no.
AH Series heat exchanger



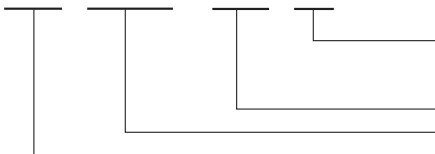
UNIT: mm



Cooler thickness: 70mm
Weight: 13 kgs
Flow rate: 10 to 200L/min



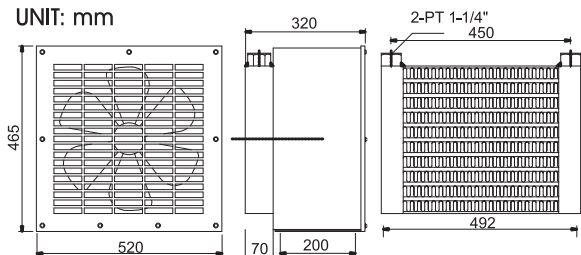
AH - 1470 - CA - A2



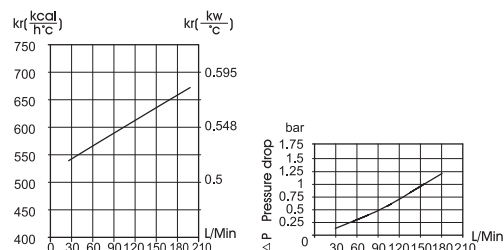
Voltage of electric fan
A2: AC 230 A3: AC 380 A4: AC 440
** 3 pole, 1/2 hp
CA: with 14" fan and cover
Air cooler design no.
AH Series heat exchanger



UNIT: mm



Cooler thickness: 70mm
Weight: 25kgs
Flow rate: 20 to 200L/min



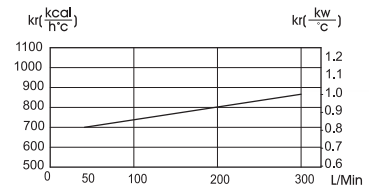
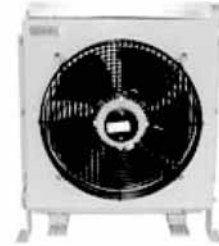
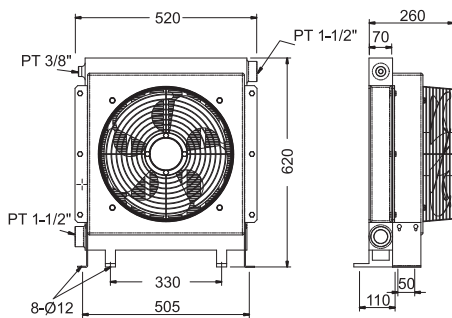


AH Series Plate-Fin Heat Exchanger - Drain type

AH - 1490 - CA - A2

Voltage of electric fan
A2: AC 230 A4: AC 400V
**3 pole, 1/2 hp
CA: with 14" fan and cover
Air cooler design no.
AH Series heat exchanger

UNIT: mm

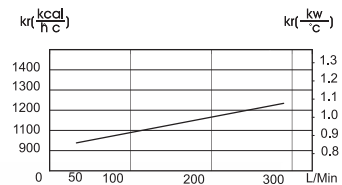
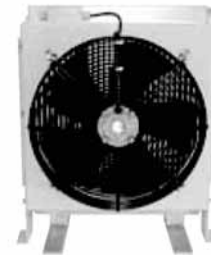
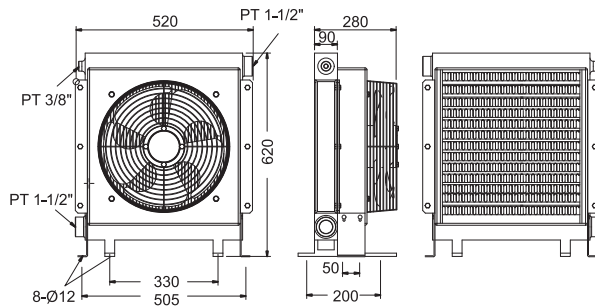


Cooler thickness: 70mm
Weight: 30kgs
Flow rate: 50 to 300L/min

AH - 1680 - CA - A2

Voltage of electric fan
A2: AC 230 A4: AC 400V
**3 pole, 1/2 hp
CA: with 16" fan and cover
Air cooler design no.
AH Series heat exchanger

UNIT: mm

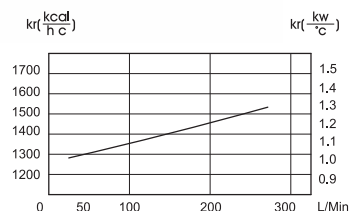
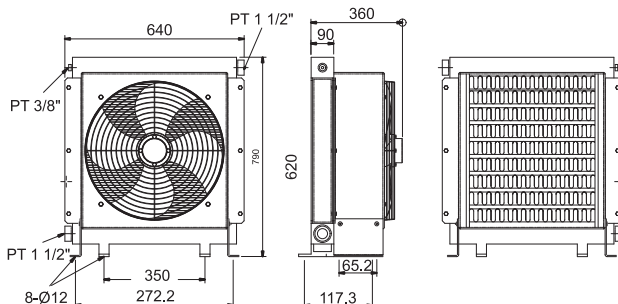


Cooler thickness: 90mm
Weight: 35kgs
Flow rate: 50 to 300L/min

AH - 1890 - CA - A2

Voltage of electric fan
A2: AC 230 A4: AC 400V
**3 pole, 1 hp
CA: with 18" fan and cover
Air cooler design no.
AH Series heat exchanger

UNIT: mm



Cooler thickness: 90mm
Weight: 52kgs
Flow rate: 30 to 300L/min