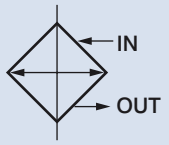
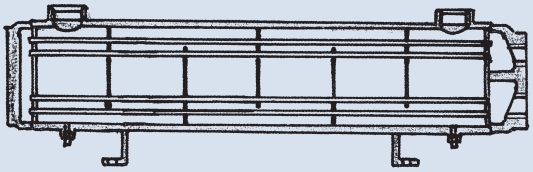
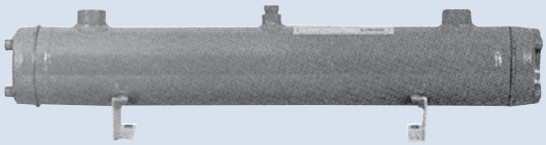
# FIN TUBE TYPE OIL COOLER
# NO-FIN TUBE TYPE OIL COOLER





## How to order

**HT, HH - 14 05 - ※**

1 2 3 4

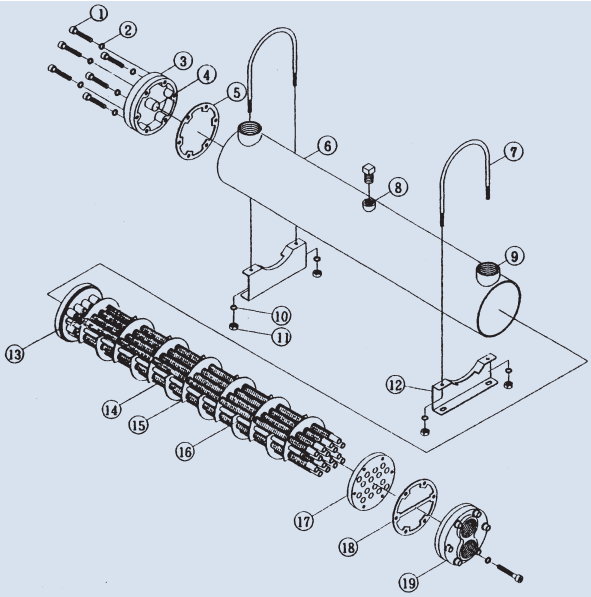
| | |
|---|---|
| 1 | Model HT: Fin tube type HH: No-Fin tube type HTF: Fin tube type HHF: No-Fin tube type |
| 2 | Shell outside diameter |
| 3 | Tube length |
| 4 | Cooling water None: Water (standard type) B: Brine water |

## Specifications

| Model | Heat Diffusion Area($m^2$) | | Flow (lpm) | Weight(kg) | |
|---|---|---|---|---|---|
| | HT(F) | HH(F) | | HT(F) | HH(F) |
| HT,HH-0905 | 0.41 | 0.24 | 60 | 10 | 10 |
| HT,HH-0908 | 0.7 | 0.39 | 100 | 14 | 14 |
| HT,HH-1405 | 1.1 | 0.54 | 150 | 20 | 20 |
| HT,HH-1408 | 1.9 | 0.84 | 250 | 25 | 26 |
| HT,HH-1412 | 2.9 | 1.28 | 350 | 37 | 35 |
| HT,HH-1712 | 4.6 | 2.17 | 600 | 48 | 50 |
| HT,HH-1716 | 6.5 | 2.89 | 840 | 56 | 60 |
| HT,HH-1722 | 7.2 | 3.63 | 1000 | 72 | 72 |
| HTF,HHF-2208 | 5.6 | 2.61 | 800 | 72 | 78 |
| HTF,HHF-2212 | 8.6 | 4.02 | 1200 | 93 | 110 |
| HTF,HHF-2216 | 11.6 | 5.39 | 1500 | 118 | 130 |
| HTF,HHF-2222 | 14.6 | 7.15 | 1800 | 260 | 290 |

| Model | Heat Diffusion Area($m^2$) | | Flow (lpm) | Weight(kg) | |
|---|---|---|---|---|---|
| | HTF | HHF | | HTF | HHF |
| HTF,HHF-2508 | 8 | 3.55 | 1000 | 100 | 130 |
| HTF,HHF-2512 | 12.2 | 5.41 | 1600 | 146 | 170 |
| HTF,HHF-2516 | 16.4 | 7.21 | 1800 | 168 | 190 |
| HTF,HHF-2522 | 20.8 | 9.08 | 2200 | 260 | 300 |
| HTF-3208 | 13.3 | - | 1400 | 167 | - |
| HTF-3212 | 20 | - | 2100 | 204 | - |
| HTF-3216 | 26.6 | - | 2800 | 241 | - |
| HTF-3222 | 33.4 | - | 3500 | 280 | - |
| HTF-3508 | 15.5 | - | 1640 | 222 | - |
| HTF-3512 | 23.6 | - | 2500 | 264 | - |
| HTF-3516 | 31.5 | - | 3300 | 306 | - |
| HTF-3522 | 39.6 | - | 4400 | 348 | - |

## Dimensions

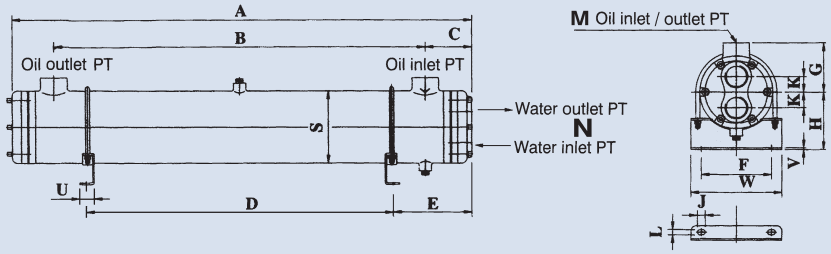


| Item | Part name | Material |
|---|---|---|
| 1 | Socket cap screws | SCM (435) |
| 2 | Washers | SPM |
| 3 | Cast iron end cover | FC20 |
| 4 | Anti-corrosion zinc bar | ZnB |
| 5 | Oil seal | NBR |
| 6 | Shell | BPE |
| 7 | Supporting hangers | AISI (1006) |
| 8 | Air vent | SS41 |
| 9 | Oil port | STPG (370) |
| 10 | Vibration absorber | FWL |
| 11 | Nut | STEEL |
| 12 | Supporting legs | SS41 |
| 13 | Tube end plate | SS41 |
| 14 | Copper tubes | JIS (H3300) (1220T) |
| 15 | Buffle plates | SS41 |
| 16 | Supporting rod | SS41 |
| 17 | Tube bundle end plate | SS41 |
| 18 | Oil seal | NBR |
| 19 | Cast Iron end cover | FC20 |

# FIN TUBE TYPE OIL COOLER
# NO-FIN TUBE TYPE OIL COOLER

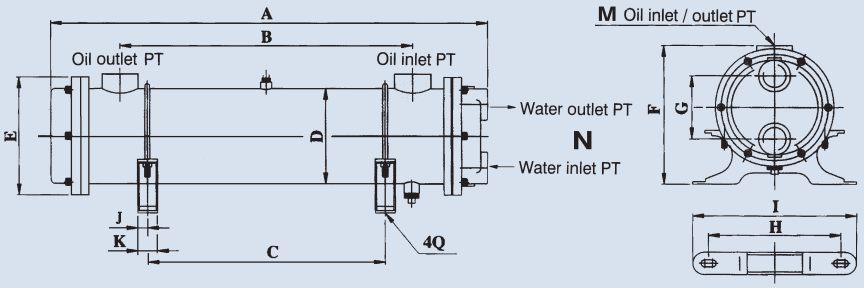
## Dimensions

Unit: mm



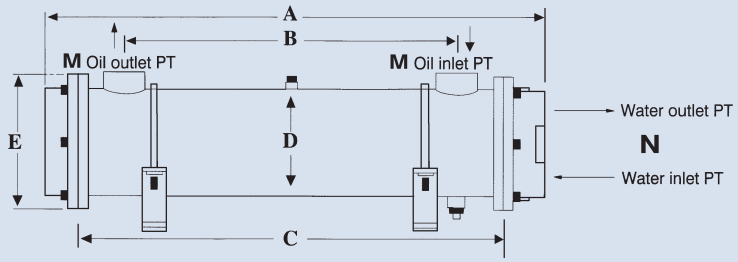

| Model | A | B | C | D | E | F | J | G | H | K | L | M | N | S | U | V | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HT,HH-0905 | 590 | 408 | 88 | 270 | 150 | 80 | 25 | 63 | 80 | 22 | 10 | 3/4" | 3/4" | 89.5 | 30 | 2.3 | 115 |
| HT,HH-0908 | 880 | 720 | 78 | 500 | 190 | 80 | 25 | 63 | 80 | 22 | 10 | 3/4" | 3/4" | 89.5 | 30 | 2.3 | 115 |
| HT,HH-1405 | 600 | 398 | 100 | 270 | 162 | 140 | 32 | 90 | 110 | 28 | 12 | 1-1/4" | 1/1/4" | 140.8 | 40 | 3.2 | 176 |
| HT,HH-1408 | 890 | 710 | 85 | 500 | 202 | 140 | 32 | 90 | 110 | 28 | 12 | 1-1/4" | 1-1/4" | 140.8 | 40 | 3.2 | 176 |
| HT,HH-1412 | 1310 | 1110 | 100 | 700 | 303 | 140 | 32 | 90 | 110 | 28 | 12 | 1-1/2" | 1-1/4" | 140.8 | 40 | 3.2 | 176 |
| HT,HH-1712 | 1335 | 1060 | 138 | 700 | 310 | 145 | 32 | 115 | 125 | 32 | 12 | 2" | 1-1/4" | 166.5 | 40 | 3.2 | 200 |
| HT,HH-1716 | 1745 | 1510 | 118 | 850 | 460 | 145 | 32 | 115 | 125 | 32 | 12 | 2" | 1-1/4" | 166.5 | 40 | 3.2 | 200 |
| HT,HH-1722 | 2200 | 1850 | 160 | 1650 | 270 | 145 | 32 | 115 | 125 | 32 | 12 | 2 | 1-1/4" | 166.5 | 40 | 3.2 | 200 |

Unit: mm




| Model | A | B | C | D | E | F | G | H | I | J | K | M | N | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HTF,HHF-2208 | 950 | 640 | ADJ. | 219 | 265 | 323 | 137 | 290 | 360 | 38 | 50 | 2"~2-1/2" | 1-1/2"~2" | 5/8" |
| HTF,HHF-2212 | 1370 | 1060 | ADJ. | 219 | 265 | 323 | - | - | - | - | - | 2"~2-1/2" | 1-1/2"~2" | 5/8" |
| HTF,HHF-2216 | 1780 | 1490 | ADJ. | 219 | 265 | 323 | - | - | - | - | - | 2"~2-1/2" | 1-1/2"~2" | 5/8" |
| HTF,HHF-2222 | 2210 | 1860 | ADJ. | 219 | 265 | 323 | - | - | - | - | - | 2"~2-1/2" | 1-1/2"~2" | 5/8" |
| HTF,HHF-2508 | 980 | 640 | ADJ. | 270 | 325 | 385 | 160 | 345 | 405 | 38 | 50 | 2"~3" | 2" | 5/8" |
| HTF,HHF-2512 | 1400 | 1060 | ADJ. | 270 | 325 | 385 | 160 | 345 | - | - | - | 2"~3" | 2" | 5/8" |
| HTF,HHF-2516 | 1810 | 1470 | ADJ. | 270 | 325 | 385 | 160 | 345 | - | - | - | 2"~3" | 2" | 5/8" |
| HTF,HHF-2522 | 2240 | 1860 | ADJ. | 270 | 325 | 385 | 160 | 345 | - | - | - | 2"~3" | 2" | 5/8" |

Unit: mm




| Model | A | B | C | D | E | M | N |
|---|---|---|---|---|---|---|---|
| HTF-3208 | 975 | 635 | 810 | 12" | 390 | 3"~4" | 3"~4" |
| HTF-3212 | 1400 | 1060 | 1235 | 12" | 390 | 3"~4" | 3"~4" |
| HTF-3216 | 1810 | 1470 | 1645 | 12" | 390 | 3"~4" | 3"~4" |
| HTF-3222 | 2235 | 1895 | 2070 | 12" | 390 | 3"~4" | 3"~4" |

| Model | A | B | C | D | E | M | N |
|---|---|---|---|---|---|---|---|
| HTF-3508 | 975 | 635 | 810 | 14" | 448 | 3"~4" | 3"~4" |
| HTF-3512 | 1400 | 1060 | 1235 | 14" | 448 | 3"~4" | 3"~4" |
| HTF-3516 | 1810 | 1470 | 1645 | 14" | 448 | 3"~4" | 3"~4" |
| HTF-3522 | 2235 | 1890 | 2070 | 14" | 448 | 3"~4" | 3"~4" |

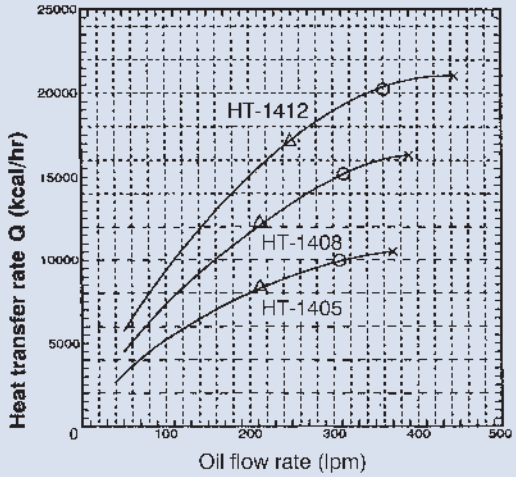
# FIN TUBE TYPE OIL COOLER

## Performance curves

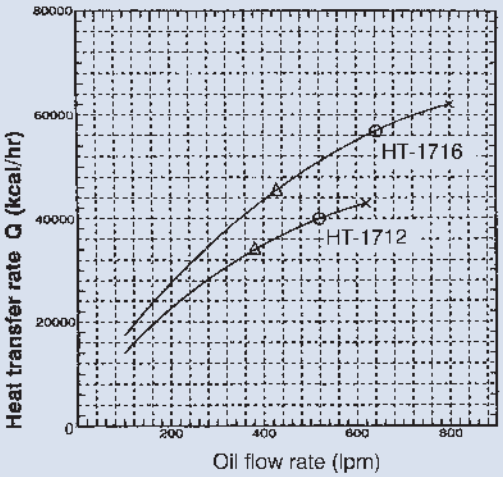
Test conditions:
1. The flow rate of oil is twice as water
2. The outlet temperature of oil: 50 °C
3. The inlet temperature of water: 30 °C
4. The viscosity of oil: ISO-68 (68CST)

Pressure drop of oil:
Δ:ΔP=0.5 bar O: ΔP=1.0 bar X:ΔP=1.5 bar

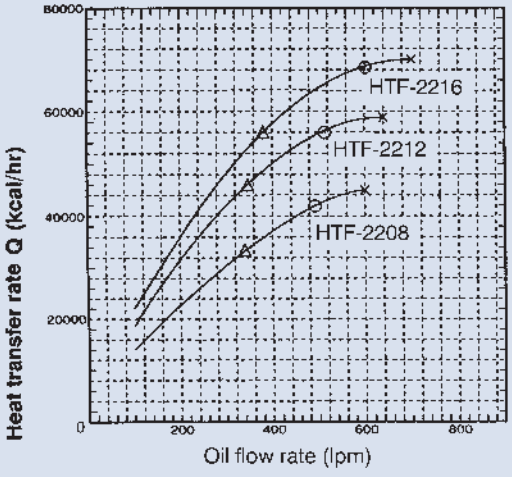
### HT-1405, HT-1408, HT-1412



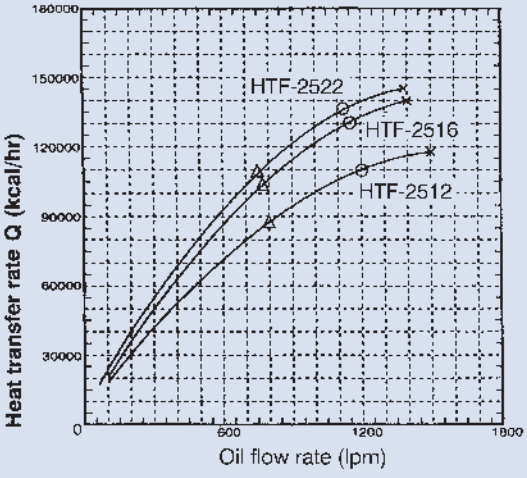

### HT-1712, HT-1716



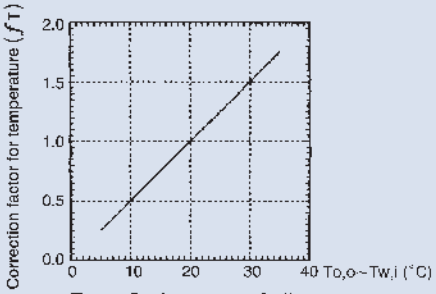

### HTF-2208, HTF-2212, HTF-2216




### HTF-2512, HTF-2516, HTF-2522

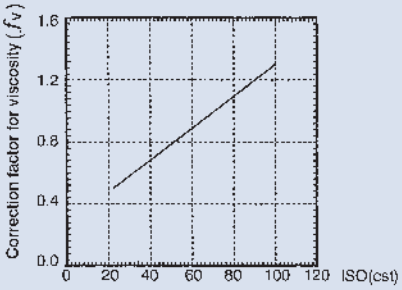



### OIL TEMPERATURE CORRECTION



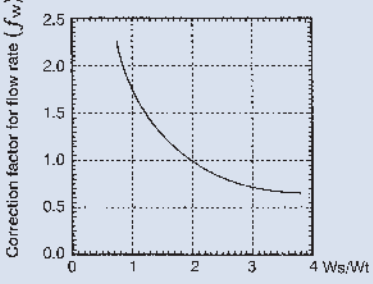

To,o: Outlet temp. of oil
Tw,i: Inlet temp. of water

### OIL VISCOSITY CORRECTION



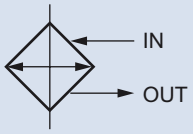

cst: The viscosity of oil

### OIL FLOW CORRECTION




Ws: Flow rate of oil
Wt: Flow rate of water

# MULTI-TUBE TYPE OIL COOLER





## How to order

**OR - 60**
1 2

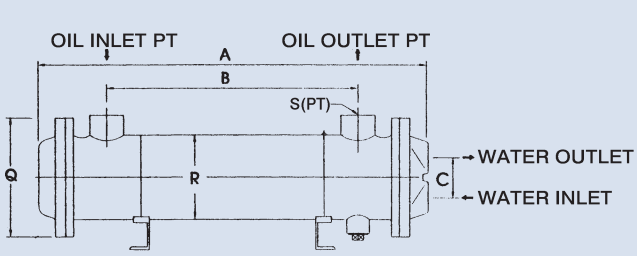
| | |
|---|---|
| 1 | Model |
| 2 | Flow (lpm) |

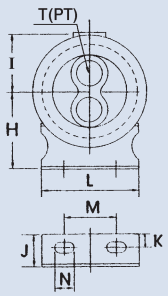
## Specifications

| Model | Heat Diffusion Area (m²) | Nos. of Tube | Flow (lpm) | Weight (kg) | Model | Heat Diffusion Area (m²) | Nos. of Tube | Flow (lpm) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|
| **OR-30** | 0.17 | 22 | 30 | 6.5 | **OR-800** | 2.9 | 58 | 800 | 48.6 |
| **OR-60** | 0.3 | 22 | 60 | 7.7 | **OR-1000** | 3.7 | 58 | 1000 | 57.4 |
| **OR-100** | 0.4 | 26 | 100 | 10.2 | **OR-1200** | 6.1 | 124 | 1200 | 103 |
| **OR-150** | 0.63 | 42 | 150 | 17.5 | **OR-1400** | 6.9 | 124 | 1400 | 111 |
| **OR-250** | 1.26 | 58 | 250 | 22.10 | **OR-1800** | 8.1 | 124 | 1800 | 118 |
| **OR-350** | 1.75 | 58 | 350 | 29.80 | **OR-2500** | 10.1 | 200 | 2500 | 160 |
| **OR-600** | 2 | 58 | 600 | 36.8 | **OR-3000** | 12.56 | 200 | 3000 | 200 |

## Dimensions

Unit: mm

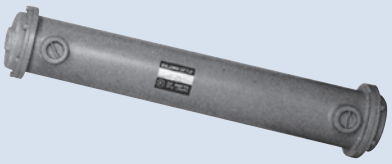


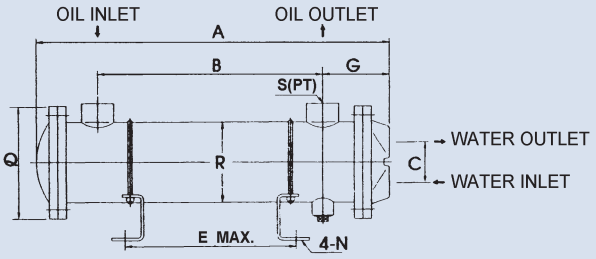



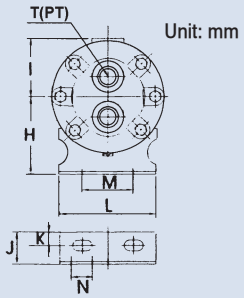

| Model | A | B | C | H | I | J | K | L | M | N | Q | R | S | T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OR-30 | 299 | 150 | 46 | 77 | 63 | 23 | 11 | 115.5 | 95 | 7x10 | 121 | 89.1 | 3/4" | 3/4" |
| 60 | 450 | 305 | | | | | | | | | | | | |
| 100 | 555 | 403 | 57 | 95 | 70 | 33 | 12.5 | 145.5 | 106.5 | 10x20 | 134 | 101.6 | 3/4" | 3/4" |
| 150 | 575 | 385 | 76 | 118 | 95 | 30 | 12.5 | 175 | 130 | 13x16 | 175 | 139.8 | 1-1/4" | 1" |
| 250 | 780 | 585 | | | | | | | | | | | | |
| 350 | 1180 | 990 | | | | | | | | | | | | |
| 600 | 1175 | 950 | 87 | 136 | 107 | 34 | 12.5 | 205 | 161 | 13x16 | 207 | 165.2 | 2" | 1-1/4" |
| 800 | 1700 | 1490 | | | | | | | | | | | | |
| 1000 | 2135 | 1910 | | | | | | | | | | | | |
| 1200 | 1690 | 1380 | 114 | 184 | 150 | 50 | 25 | 333 | 229 | 16x33 | 269 | 217 | 2-1/2" | 2" |
| 1400 | 1840 | 1530 | | | | | | | | | | | | |
| 1800 | 2150 | 1840 | | | | | | | | | | | | |
| 2500 | 1815 | 1435 | 154 | 218 | 178 | 50 | 25 | 352 | 247 | 16x33 | 302 | 273 | 3" | 2" |
| 3000 | 2150 | 1800 | | | | | | | | | | | | |

# THREADED-TUBE TYPE OIL COOLER

## Dimensions



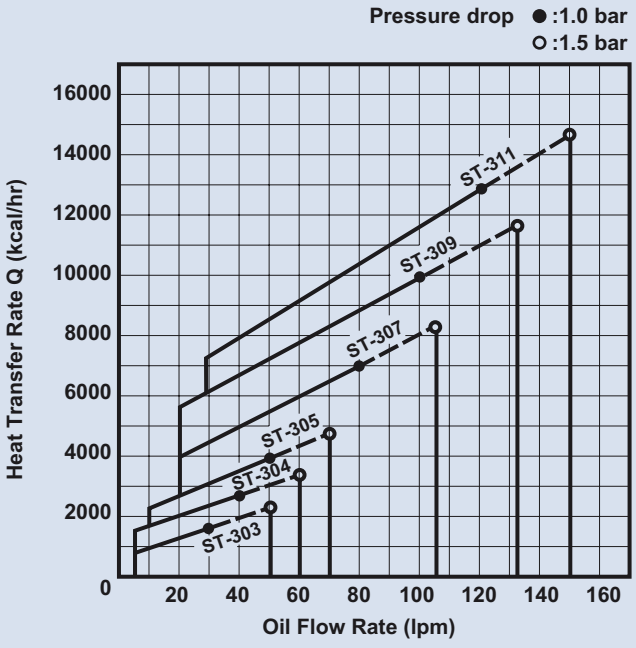



| Model | A | B | C | E | G | H | I | J | K | L | M | N | Q | R | S | T | H.D.A m² | Flow(lpm) | Weight(kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ST-303 | 300 | 150 | | 100 | | | | | | | | | | | | | 0.3 | 50 | 6.5 |
| 304 | 390 | 225 | | 175 | | | 63 | | | | | | | | 3/4" | | 0.4 | 60 | 7.5 |
| 305 | 450 | 305 | 46 | 235 | 90 | 77 | | 23 | 11 | 115.5 | 95 | 7x10 | 121 | 89.1 | | 3/4" | 0.5 | 70 | 9.0 |
| 307 | 600 | 440 | | 380 | | | | | | | | | | | 1" | | 0.7 | 110 | 10.5 |
| 309 | 755 | 584 | | 525 | | | 66 | | | | | | | | | | 0.9 | 130 | 12.0 |
| 311 | 900 | 728 | | 675 | | | | | | | | | | | | | 1.1 | 150 | 13.5 |
| ST-408 | 470 | 284 | | 215 | | | | | | | | | | | | | 0.8 | 130 | 14 |
| 411 | 610 | 428 | | 360 | | | | | | | | | | | | | 1.1 | 140 | 16 |
| 415 | 765 | 572 | 70 | 500 | 102 | 103 | 77 | 33 | 12.5 | 145.5 | 106.5 | 10x20 | 150 | 114.3 | 1-1/4" | 1" | 1.5 | 150 | 18 |
| 418 | 910 | 716 | | 650 | | | | | | | | | | | | | 1.8 | 160 | 21 |
| 421 | 1050 | 860 | | 790 | | | | | | | | | | | | | 2.1 | 180 | 22 |
| ST-518 | 615 | 406 | | 328 | | | | | | | | | | | | | 1.8 | 210 | 21 |
| 522 | 770 | 558 | | 480 | | | | | | | | | | | | | 2.2 | 260 | 26 |
| 526 | 820 | 622 | 76 | 540 | 110 | 118 | 95 | 30 | 12.5 | 175 | 130 | 13x16 | 174.8 | 139.8 | 1-1/2" | 1" | 2.6 | 300 | 28 |
| 530 | 915 | 702 | | 620 | | | | | | | | | | | | | 3 | 330 | 30 |
| 534 | 1075 | 838 | | 760 | | | | | | | | | | | | | 3.4 | 370 | 33 |
| 542 | 1255 | 1055 | | 975 | | | | | | | | | | | | | 4.2 | 410 | 37 |
| ST-649 | 1090 | 836 | | 735 | | | | | | | | | | | | | 4.9 | 600 | 47 |
| 657 | 1275 | 1000 | 98 | 900 | 134 | 136 | 107 | 34 | 12.5 | 205 | 161 | 13x16 | 207 | 165.2 | 2" | 1-1/4" | 5.7 | 800 | 53 |
| 668 | 1475 | 1218 | | 1120 | | | | | | | | | | | | | 6.8 | 1000 | 60 |
| 682 | 1745 | 1490 | | 1390 | | | | | | | | | | | | | 8.2 | 1200 | 67 |

## Performance curves

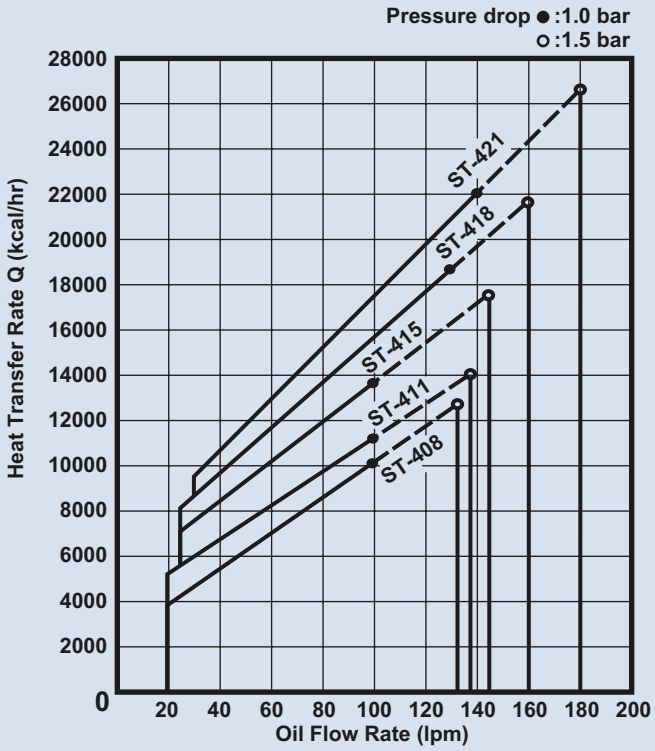
Test condition:
1. The flow rate of water: 20 lpm
2. The inlet temperature of oil: 55 °C
3. The inlet temperature of water: 28 °C
4. The viscosity of oil: ISO-68 cst



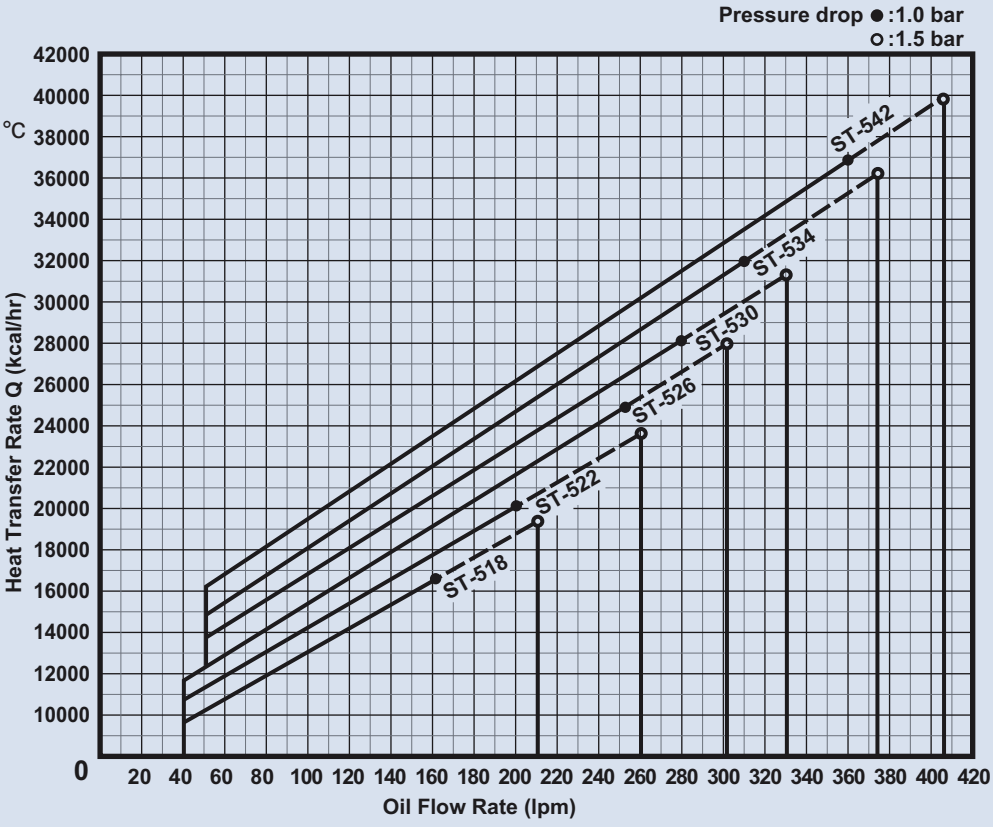
# THREADED-TUBE TYPE OIL COOLER

## Performance curves

Test condition:
1. The flow rate of water: 40 lpm
2. The inlet temperature of oil: 55 °C
3. The inlet temperature of water: 28 °C
4. The viscosity of oil: ISO-68 cst




Test condition:
1. The flow rate of water: 50 lpm
2. The inlet temperature of oil: 55 °C
3. The inlet temperature of water: 28 °C
4. The viscosity of oil: ISO-68 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

**AH0608T - C A(D)※**

1 2 3

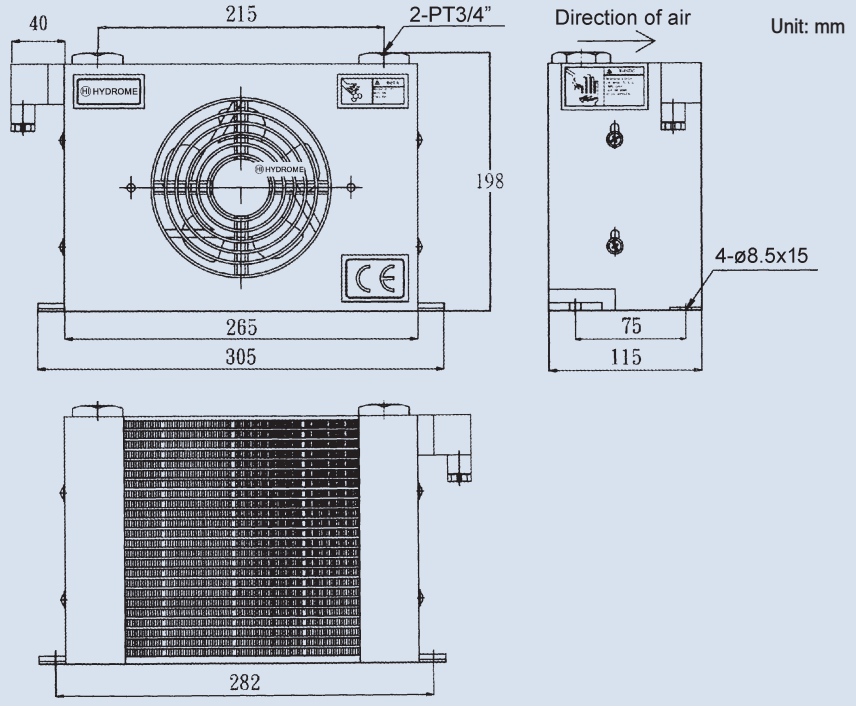
| | | |
|---|---|---|
| 1 | Model | Fan dia: 6"x1 with temperature protection switch |
| 2 | With fan case | |
| 3 | Voltage | A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V |

## Specifications

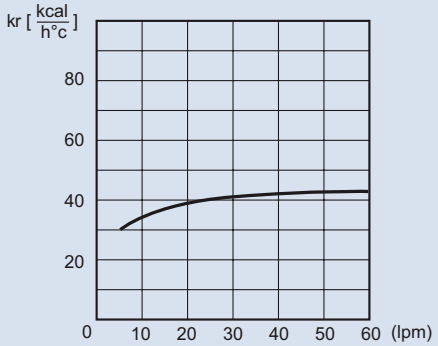
| Model | Port Size (PT) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity kcal/h (Δt=30 °C) | Hydraulic System (HP) | Weight (kg) |
|---|---|---|---|---|---|---|
| | 3/4" | 3~60 | 20 | 1200 | 1~2 | 4.2 |

| 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 | |

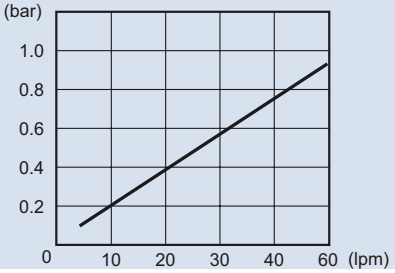
## Dimensions




### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER

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

**AH0608LT - C A(D)※**

1 2 3

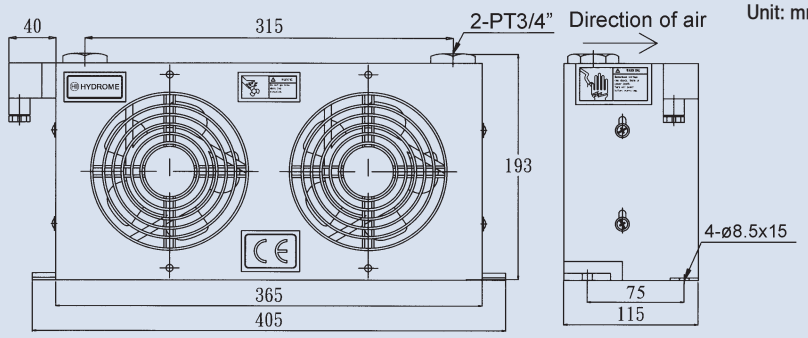
| | | |
|---|---|---|
| 1 | Model | Fan dia: 6"x2 with temperature protection switch |
| 2 | With fan case | |
| 3 | Voltage | A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V |

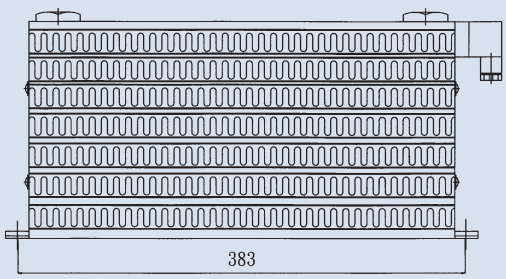
## Specifications

| 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 |

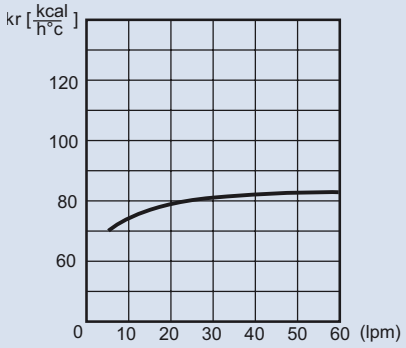
| Model | Motor Phase | Motor IP | Voltage (V) | Frequency (Hz) | Power (W) | Current (A) | Rated Speed (r.p.m) | Air Flow m³/h | Noise dB (A) |
|---|---|---|---|---|---|---|---|---|---|
| AH0608LT | Single | 54 | AC115 | 50/60 | 90/74 | 1.2/1 | 2850/3450 | 914/1106 | 42/48 |
| | | | AC230 | | | 0.54/0.46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

## Dimensions

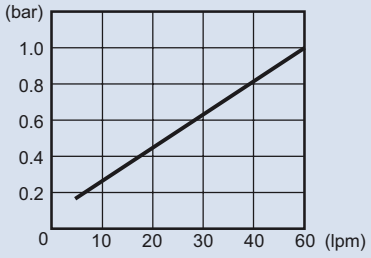



### PERFORMANCE DIAGRAM




### 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

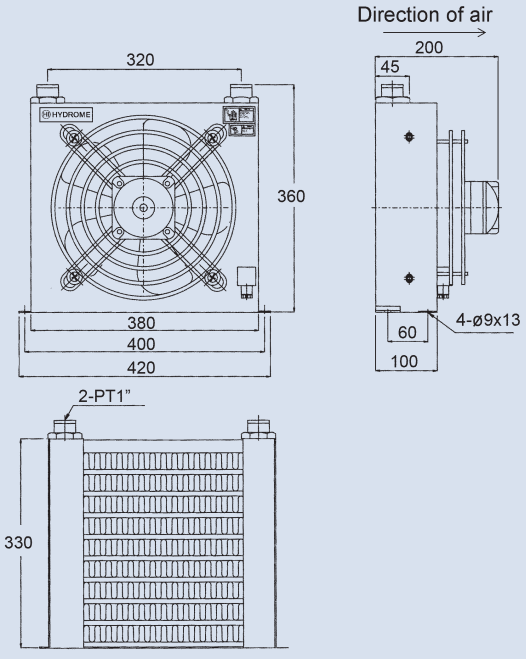
| | |
|---|---|
| 1 | Model Fan dia: 10"x1 |
| 2 | 3P: 3 Phase double voltage 230 (400V) |
| 3 | With fan case |
| 4 | Voltage A1: AC115V A2: AC230V D1: DC12V D2: DC24V |

## Specifications

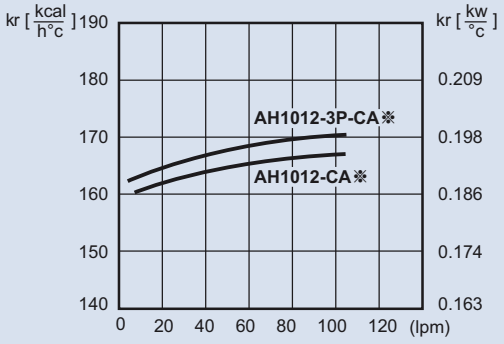
| Model | Port Size (PT) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity kcal/h (Δt=30 °C) | Hydraulic System (HP) | Weight (kg) |
|---|---|---|---|---|---|---|
| AH1012/AH1012-3P | 1" | 20~100 | 20 | 5000/5200 | 3~5 | 10 |

| 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 | | | |

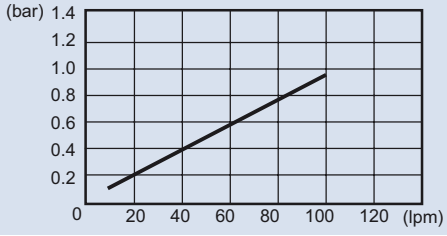
## Dimensions



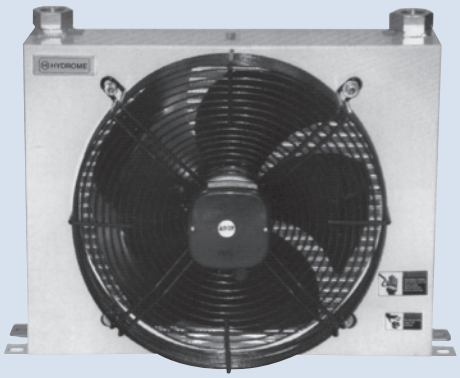

### PERFORMANCE DIAGRAM




### 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

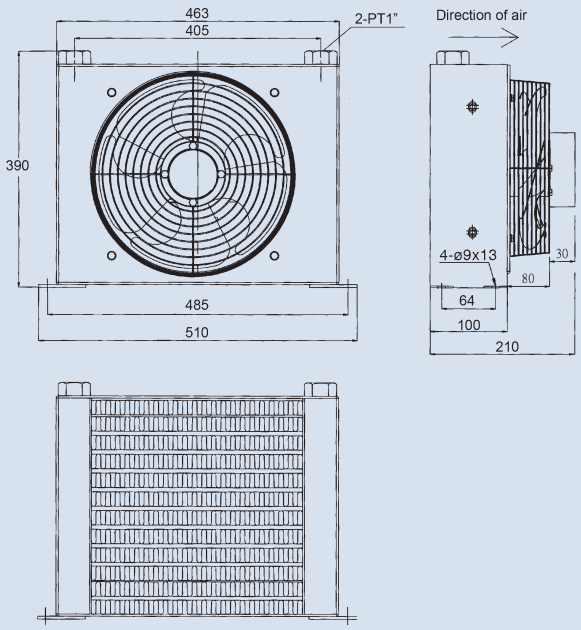
| | |
|---|---|
| 1 | Model Fan dia: 12"x1 |
| 2 | With fan case |
| 3 | Voltage A2: 230 (400V) D1: DC12V D2: DC24V |

## 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 |

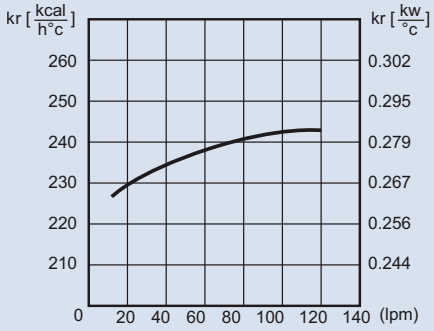
| Model | Motor | | Voltage (V) | Frequency (Hz) | Power (W) | Current (A) | Rated Speed (r.p.m) | Air Flow m³/h | Noise dB (A) |
|---|---|---|---|---|---|---|---|---|---|
| | Phase | IP | | | | | | | |
| AH1215 | 3 | 54 | AC230 | 50/60 | 130 | 0.45/0.5 | 2420/2510 | 1800/1900 | 60 |
| | | | AC400 |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

## Dimensions

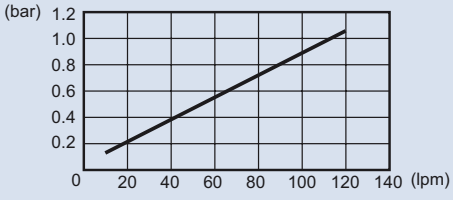



Unit: mm

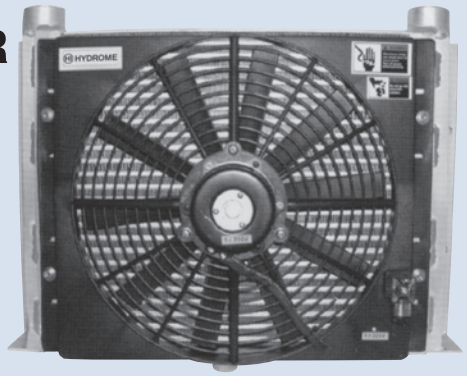
### PERFORMANCE DIAGRAM




### 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 |

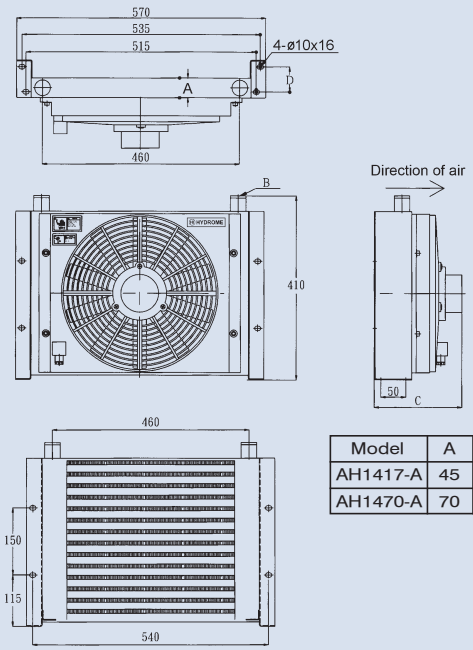
## Specifications

| 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 | | |

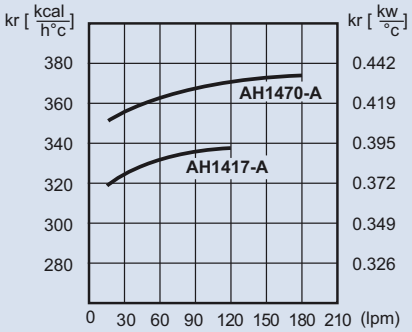
## Dimensions

Unit: mm

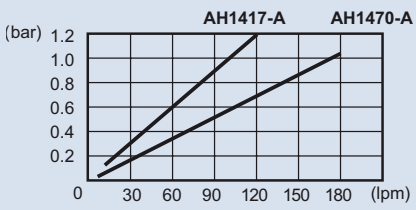



| Model | A | B | C | D |
|---|---|---|---|---|
| AH1417-A | 45 | 2-PT1" | 196 | 48 |
| AH1470-A | 70 | 2-PT1-1/4" | 212 | 50 |

### PERFORMANCE DIAGRAM

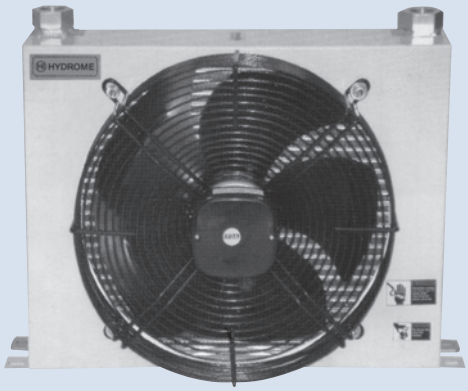



### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER

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. Pease refer to page 218.




## 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 |

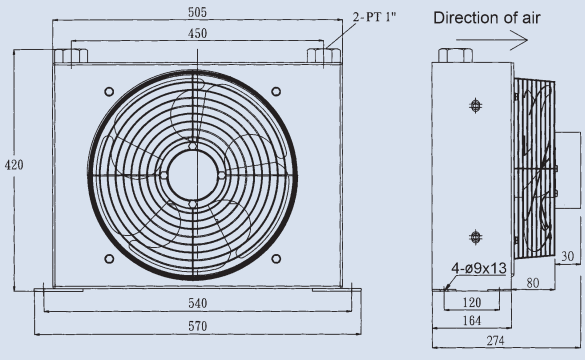
## Specifications

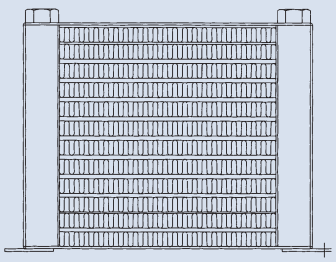
| Model | Port Size (PT) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity kcal/h (Δt=30 °C) | Hydraulic System (HP) | Weight (kg) |
|---|---|---|---|---|---|---|
| | 1" | 30~100 | 20 | 10000 | 7.5~10 | 17 |

| 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 | | | |

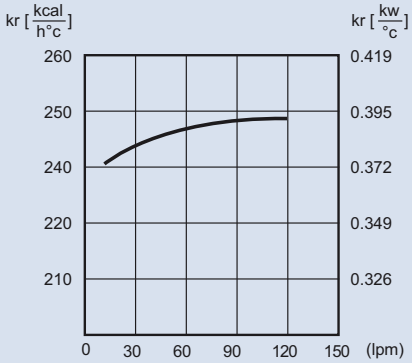
## Dimensions

Unit: mm

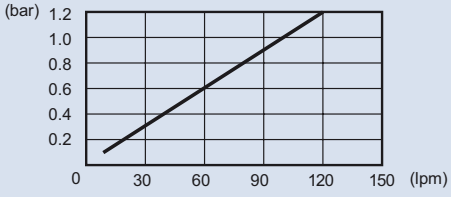


### PERFORMANCE DIAGRAM

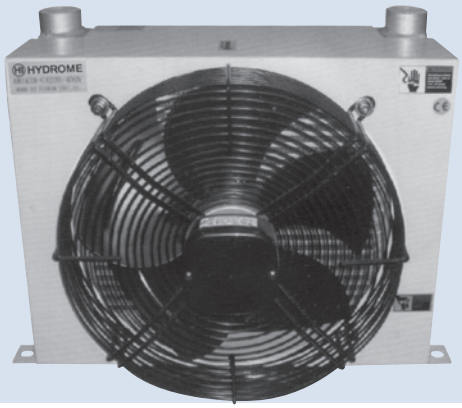



### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER

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

**AH1428 - C A※**

1 2 3

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

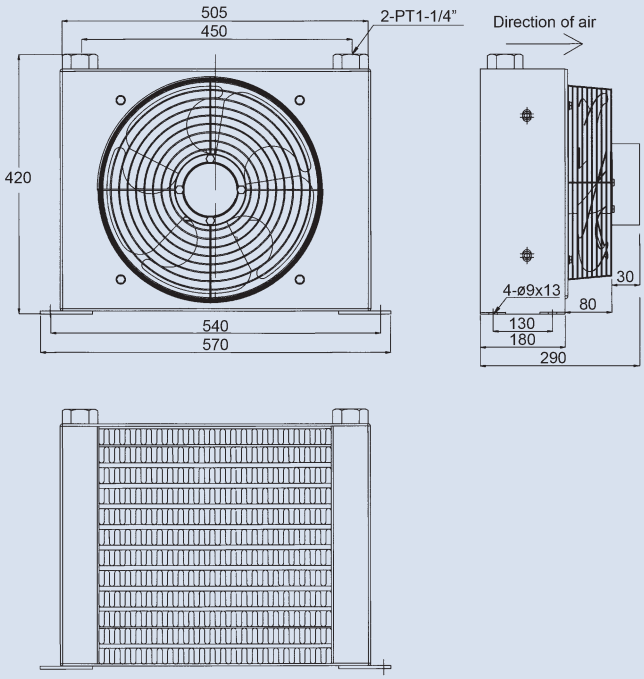
## Specifications

| 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 |

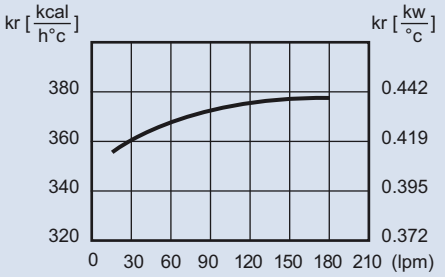
| Model | Motor | | Voltage (V) | Frequency (Hz) | Power (W) | Current (A) | Rated Speed (r.p.m) | Air Flow m³/h | Noise dB (A) |
|---|---|---|---|---|---|---|---|---|---|
| | Phase | IP | | | | | | | |
| AH1428 | 3 | 54 | AC230 | 50/60 | 150/180 | 0.8/0.7 | 1380/1550 | 3200/3800 | 62 |
| | | | AC400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

## Dimensions

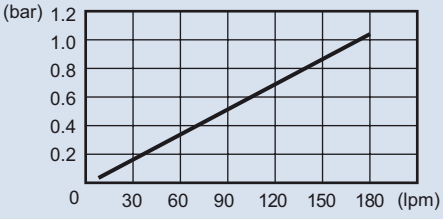
Unit: mm




### 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.

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

## How to order

**AH1490 - C A(D)※**

1 2 3

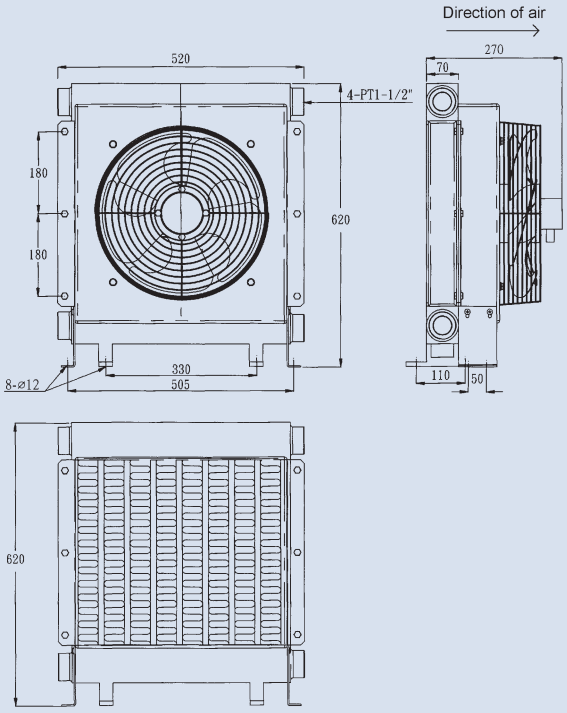
| | |
|---|---|
| 1 | Model Fan dia: 14"x1 |
| 2 | With fan case |
| 3 | Voltage A2: AC230 / 400V A4: AC440V D1: DC12V D2: DC24V |

## Specifications

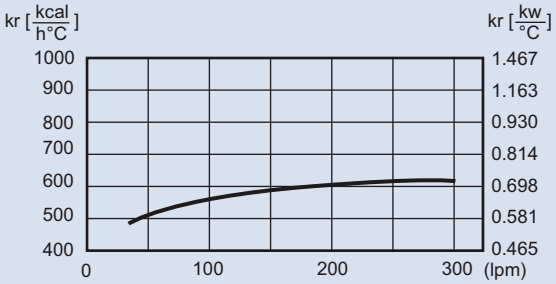
| Model | Port Size (PT) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity kcal/h (Δt=30 °C) | Hydraulic System (HP) | Weight (kg) |
|---|---|---|---|---|---|---|
| | 1-1/2" | 30~200 | 20 | 18000 | 20~25 | 30 |

| 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 | | | |

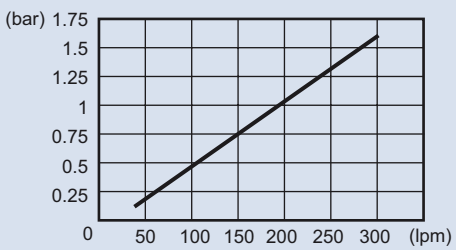
## Dimensions



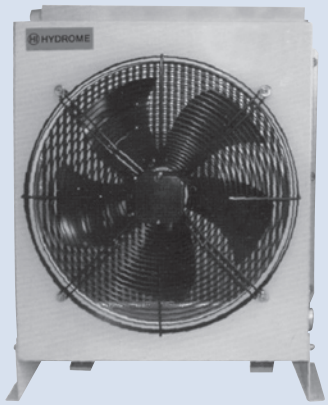

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER




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

**AH1680 - C A(D)※**

1 2 3

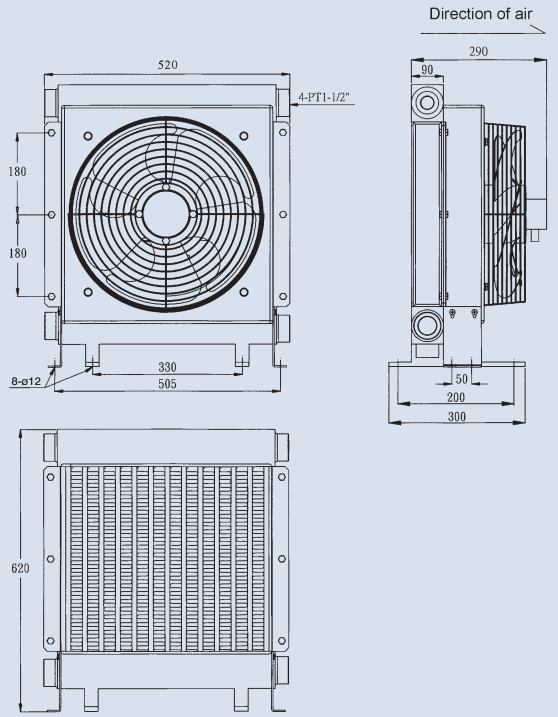
| | |
|---|---|
| 1 | Model Fan dia: 16"x1 |
| 2 | With fan case |
| 3 | Voltage A2: AC230 / 400V A4: AC440V D1: DC12V D2: DC24V |

## Specifications

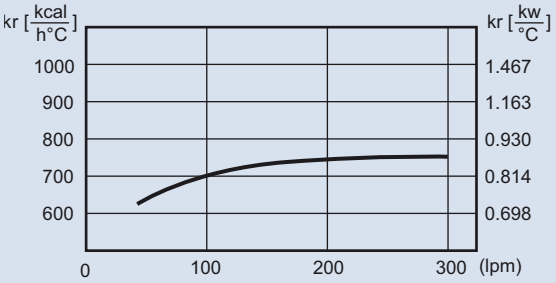
| Model | Port Size (PT) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity kcal/h (Δt=30 °C) | Hydraulic System (HP) | Weight (kg) |
|---|---|---|---|---|---|---|
| | 1-1/2" | 30~250 | 20 | 22000 | 25~40 | 35 |

| 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 | | | |

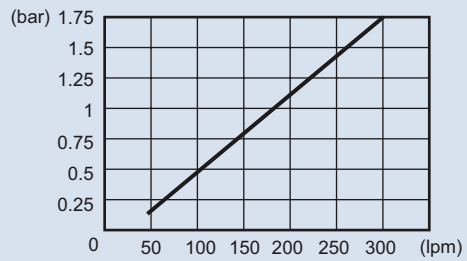
## Dimensions



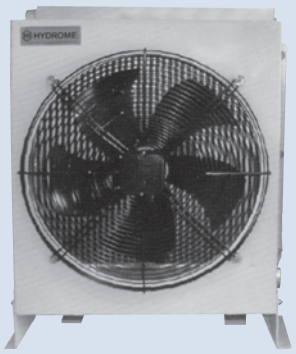

### PERFORMANCE DIAGRAM




### 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

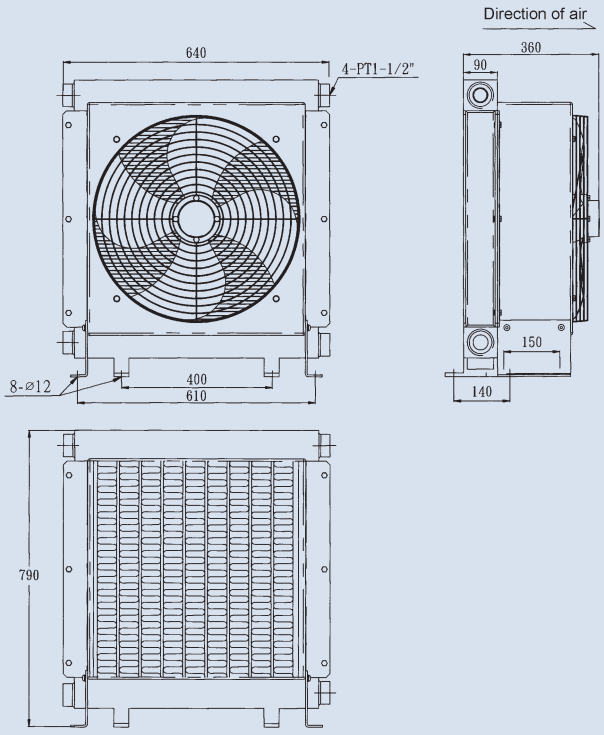
| | |
|---|---|
| 1 | Model Fan dia: 18"x1 |
| 2 | With fan case |
| 3 | Voltage A2: AC230 / 400V A4: AC440V |

## Specifications

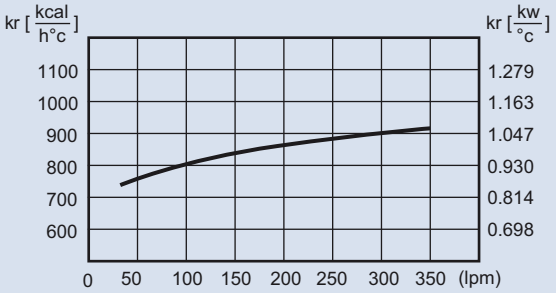
| Model | Port Size (PT) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity kcal/h (Δt=30 °C) | Hydraulic System (HP) | Weight (kg) |
|---|---|---|---|---|---|---|
| | 1-1/2" | 30~250 | 20 | 26000 | 30~50 | 52 |

| 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 | | | |

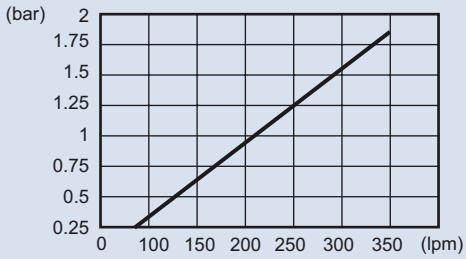
## Dimensions




### 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) |

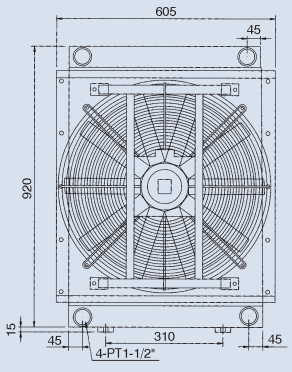
## Specifications

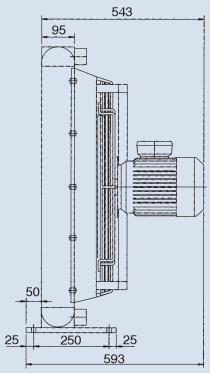
| Model | Port Size (PT) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity kcal/h (Δt=30 °C) | Hydraulic System (HP) | Weight (kg) |
|---|---|---|---|---|---|---|
| AH2342 | 1-1/2" | 50~250 | 20 | 37000 | 50~75 | 80 |

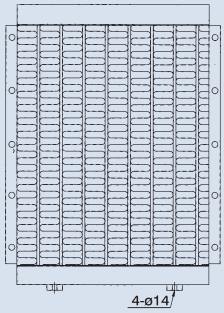
| Motor | | Voltage (V) | Frequency (Hz) | Power (W) | Current (A) | Rated Speed (r.p.m) | Air Flow m³/h | Noise dB (A) |
|---|---|---|---|---|---|---|---|---|
| Phase | IP | | | | | | | |
| 3 | 55 | AC210~230 / 360~400 | 50 | 1500 | 6.2~6.3 / 2.6~3.8 | 1400 | 7600 | 90 |
| | | AC240~270 / 420~460 |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

## Dimensions

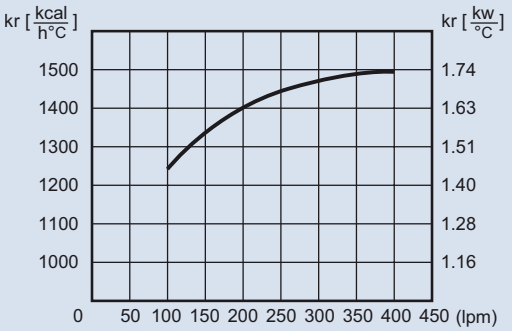
Unit: mm



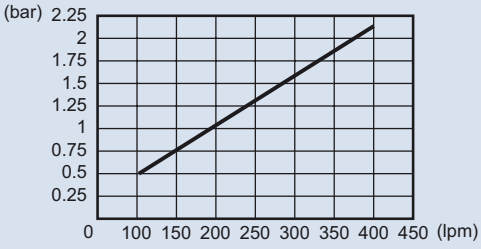




### PERFORMANCE DIAGRAM

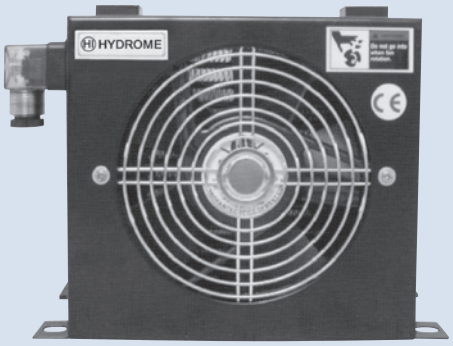



### LOSS OF PRESSURE (at 32 Cst)



# 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

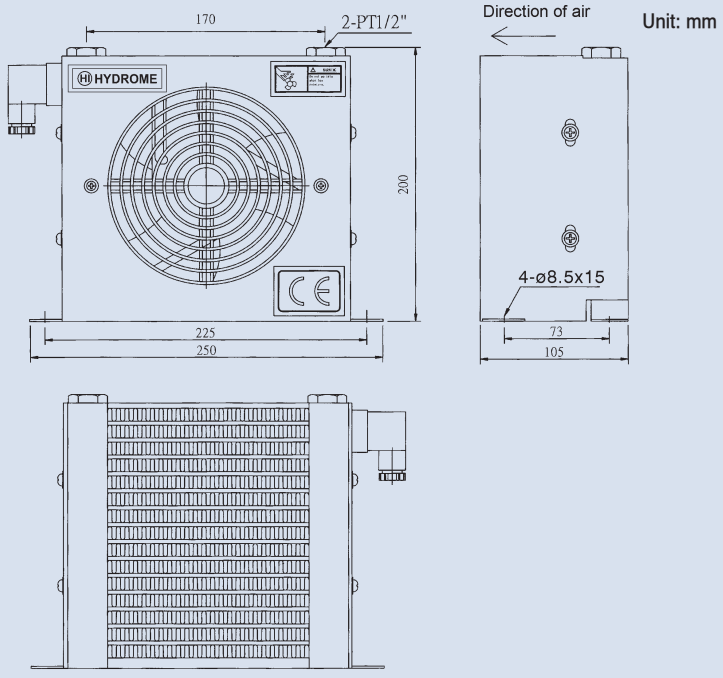
| | |
|---|---|
| 1 | Model Fan dia: 6"x1 with temperature protection switch |
| 2 | With fan case |
| 3 | Voltage A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V |

## Specifications

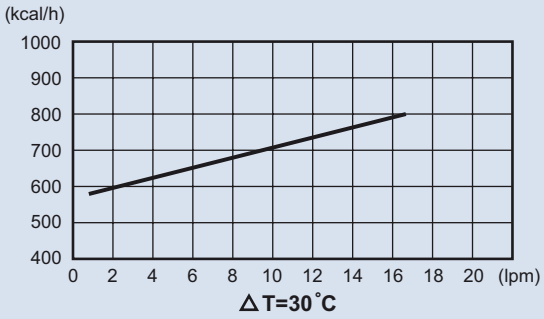
| Model | Port Size (PT) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity kcal/h (Δt=30 °C) | Weight (kg) |
|---|---|---|---|---|---|
| | 1/2" | 1~20 | 15 | 800 | 3.3 |

| Model | Motor Phase | Motor IP | Voltage (V) | Frequency (Hz) | Power (W) | Current (A) | Rated Speed (r.p.m) | Air Flow m³/h | Noise dB (A) |
|---|---|---|---|---|---|---|---|---|---|
| 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 | |

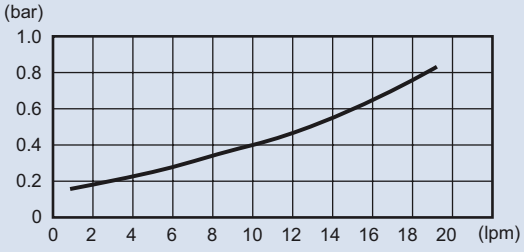
## Dimensions




### PERFORMANCE DIAGRAM

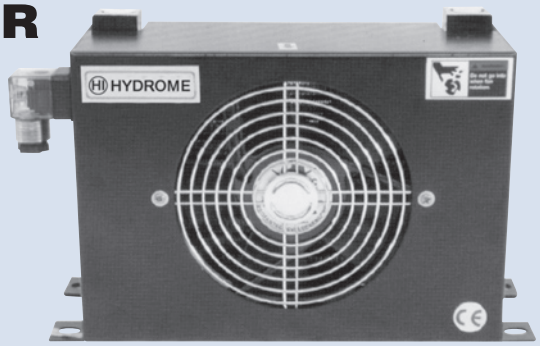



### LOSS OF PRESSURE (at 32 Cst)



# 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

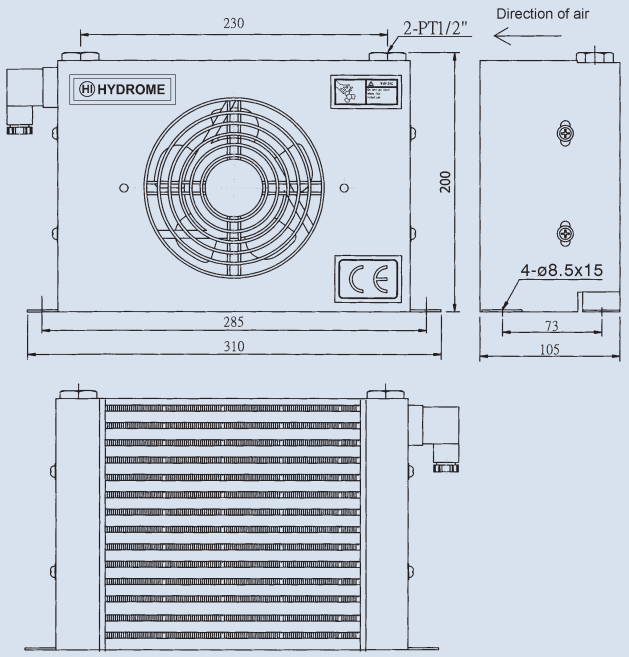
| | | |
|---|---|---|
| 1 | Model | Fan dia: 6"x1 with temperature protection switch |
| 2 | With fan case | |
| 3 | Voltage | A1: AC115V A2: AC230V A3: AC380V D1: DC12V D2: DC24V |

## 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 |

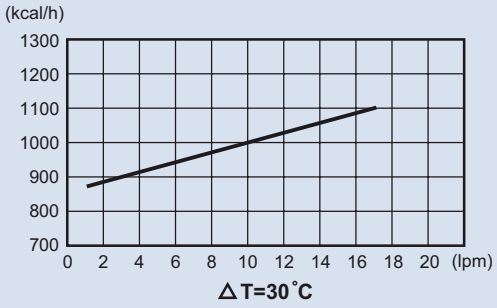
| Model | Motor | | Voltage (V) | Frequency (Hz) | Power (W) | Current (A) | Rated Speed (r.p.m) | Air Flow m³/h | Noise dB (A) |
|---|---|---|---|---|---|---|---|---|---|
| | Phase | IP | | | | | | | |
| AW0608 | Single | 54 | AC115 | 50/60 | 45/37 | 0.6/0.5 | 2850/3450 | 457/553 | 42/48 |
| | | | AC230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

## Dimensions

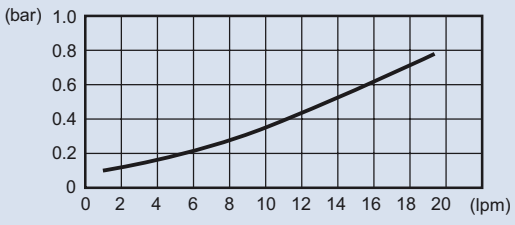



Unit: mm

### 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 |

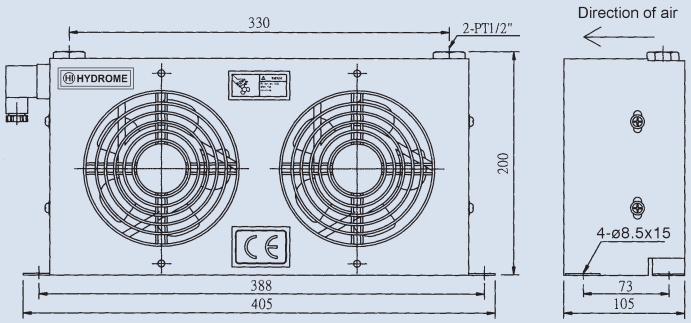
## Specifications

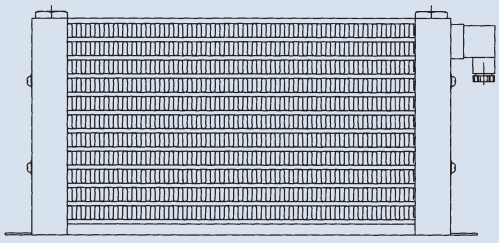
| Model | Port Size (PT) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity kcal/h (Δt=30 °C) | Weight (kg) |
|---|---|---|---|---|---|
| | 1/2" | 1~20 | 15 | 1550 | 5.2 |

| Model | Motor Phase | Motor IP | Voltage (V) | Frequency (Hz) | Power (W) | Current (A) | Rated Speed (r.p.m) | Air Flow m³/h | Noise dB (A) |
|---|---|---|---|---|---|---|---|---|---|
| AW0608L | 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 | |

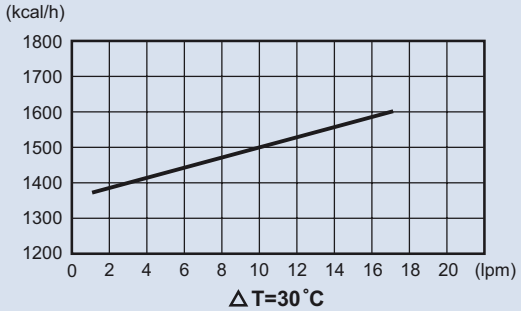
## Dimensions

Unit: mm

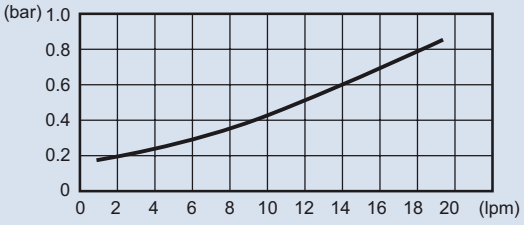


### PERFORMANCE DIAGRAM

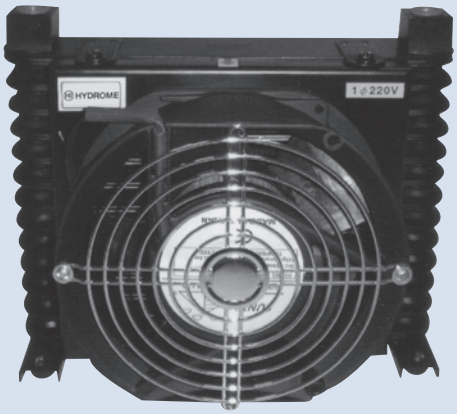



### LOSS OF PRESSURE (at 32 Cst)



# 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)※**

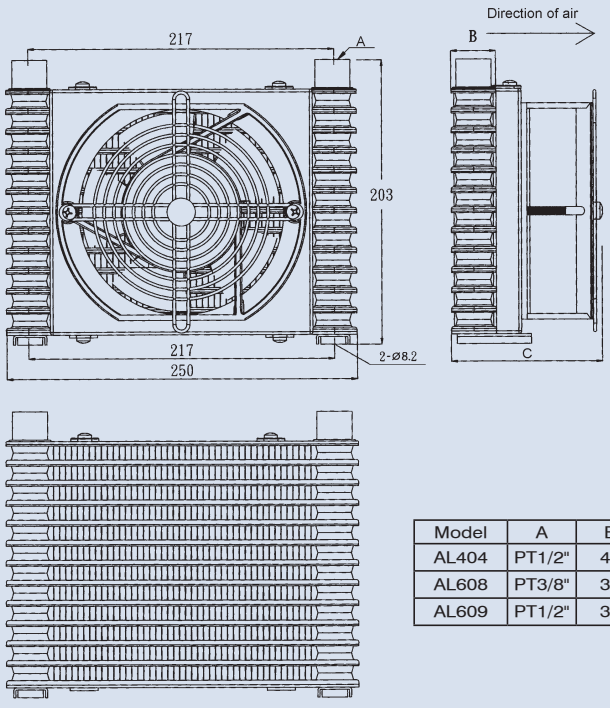
1 2

| | | |
|---|---|---|
| 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 | | | | | |

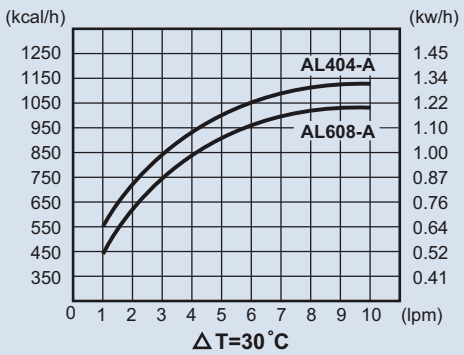
## Dimensions



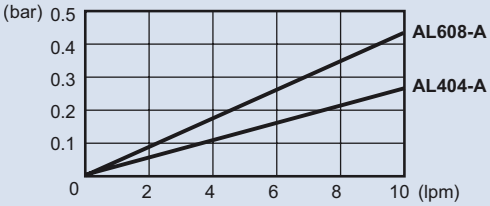

Unit: mm

| 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

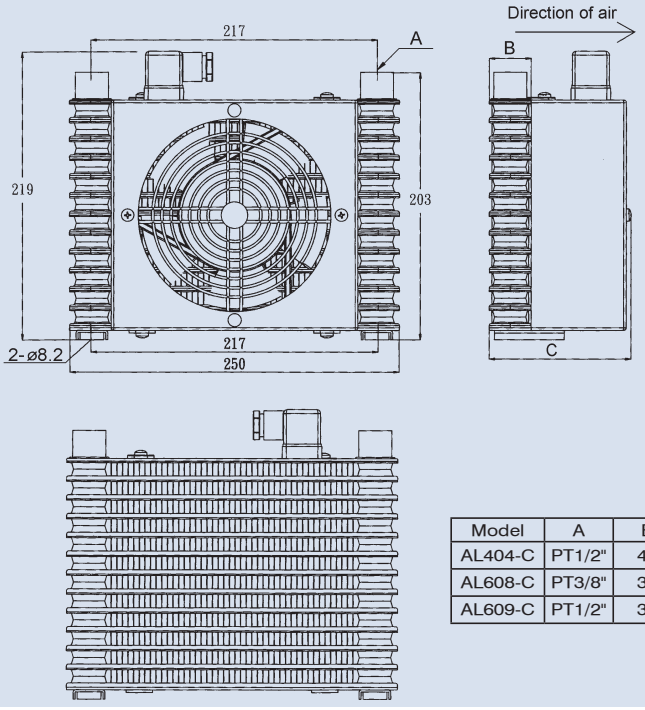
**AL※ - C A(D)※**
1 2 3

| | |
|---|---|
| 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 | | | | | |

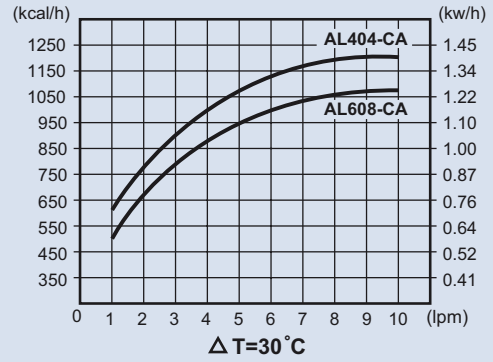
## Dimensions



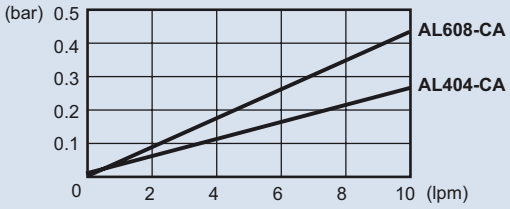

Unit: mm

| 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※**

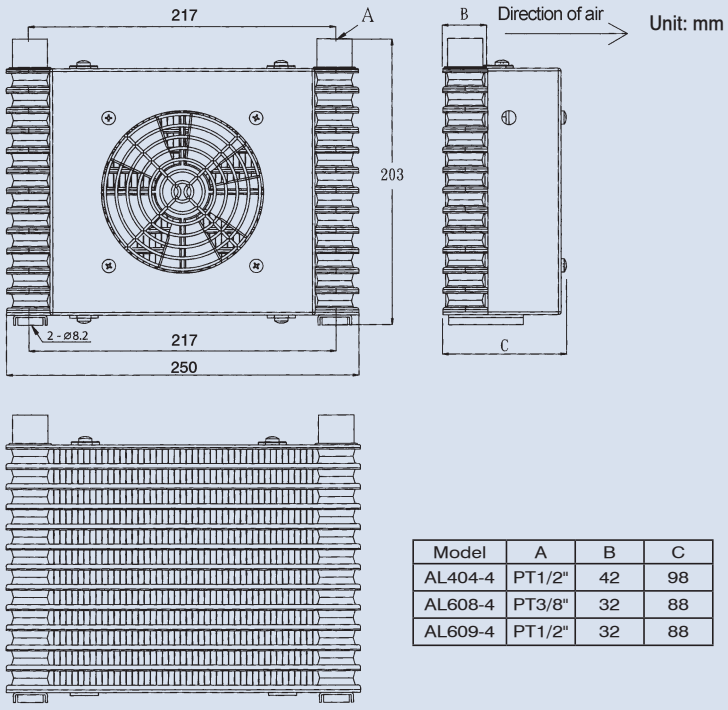
1 2 3

| | | |
|---|---|---|
| 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

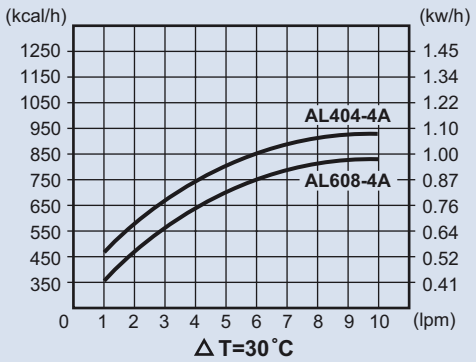
| Model | Motor | | Voltage (V) | Frequency (Hz) | Power (W) | Current (A) | Rated Speed (r.p.m) | Air Flow m³/h | Noise dB (A) | Oil Flow (lpm) | Max. Pressure (bar) | Capacity (kcal/h) Δt=30 °C | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Phase | IP | | | | | | | | | | | |
| 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

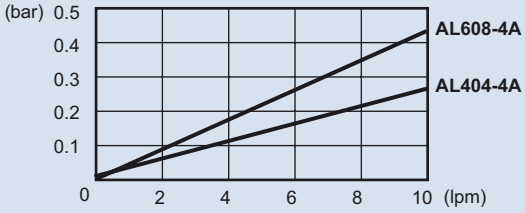



| Model | A | B | C |
|---|---|---|---|
| AL404-4 | PT1/2" | 42 | 98 |
| AL608-4 | PT3/8" | 32 | 88 |
| AL609-4 | PT1/2" | 32 | 88 |

### 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 |

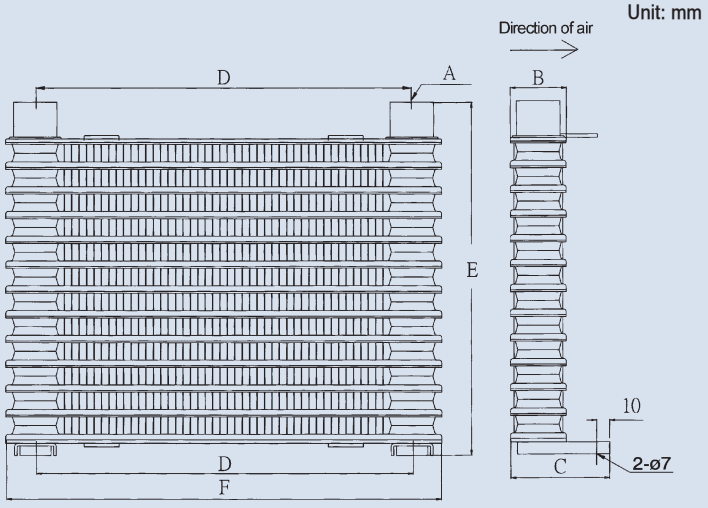
| | |
|---|---|
| 1 | Model |
| 2 | 404 PT1/2" 608 PT3/8" 609 PT 1/2" |

## Specifications

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

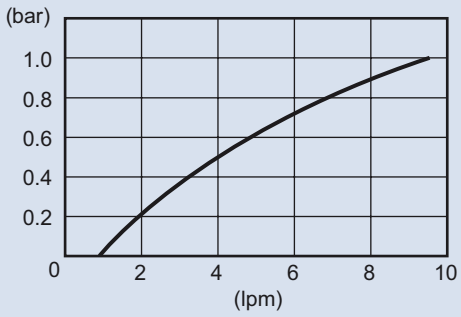
## Dimensions

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 |

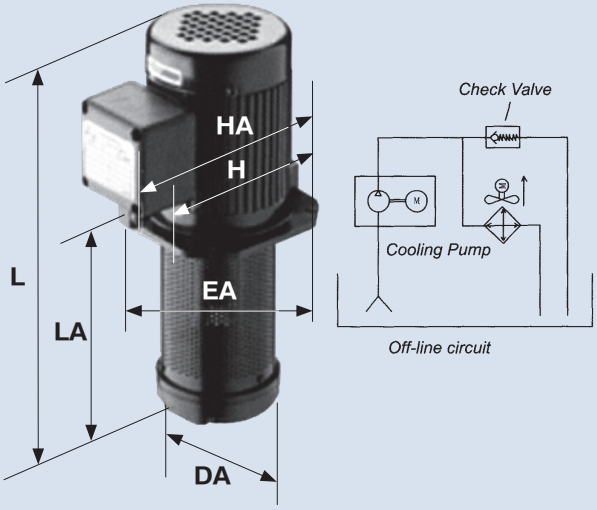
### LOSS OF PRESSURE (at 32 Cst)



# COOLING PUMP & ANTI-BURST VALVE

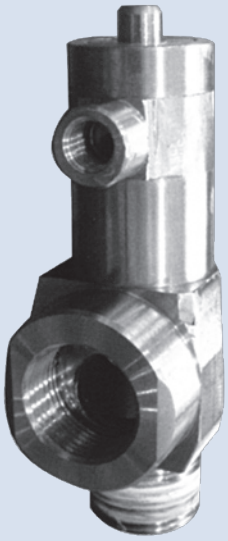
## Dimensions

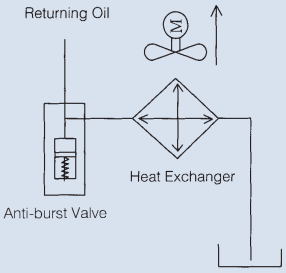
### Cooling pump-for off-line circuit

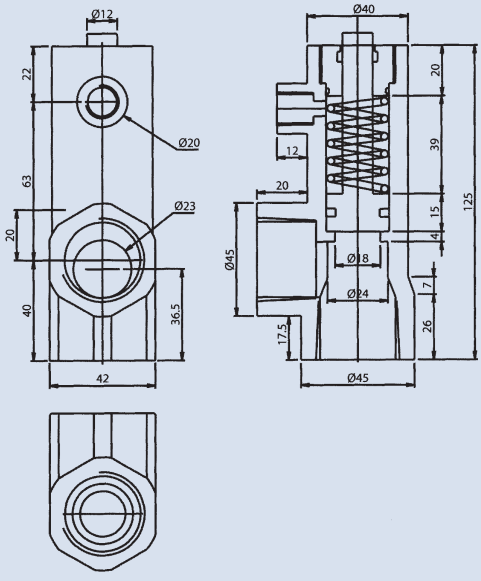



| Model | Motor (HP) | Flow Rate (lpm) | L | LA | DA | H | HA | EA | Port (Rc/PT) |
|---|---|---|---|---|---|---|---|---|---|
| TC-6130 | 1/6 | 20 | 275 | 130 | 90 | 124 | 160 | 128 | 1/2" |
| TC-6180 | 1/6 | 20 | 325 | 180 | 90 | 124 | 160 | 128 | 1/2" |
| TC-4155 | 1/4 | 50 | 341 | 155 | 126 | 160 | 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

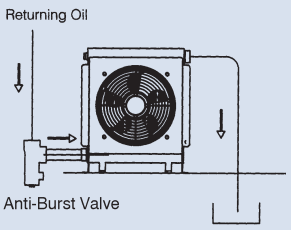



Fig. 2

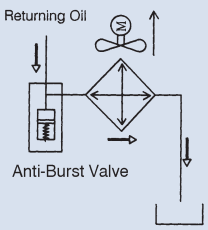



Fig. 3

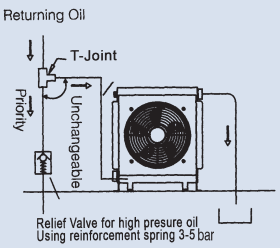
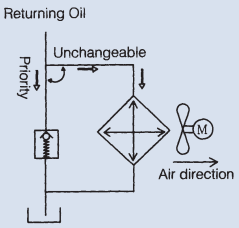



Fig. 4




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

### Installation

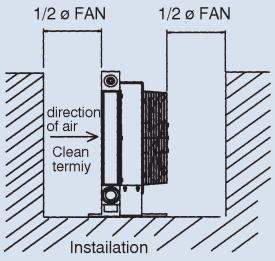
The cooler should be mounted at clean environment where is well ventilated area, keep fan diameter free from both cooling side and hot side.

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.



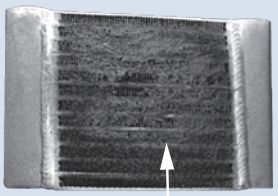

### Maintenance

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.

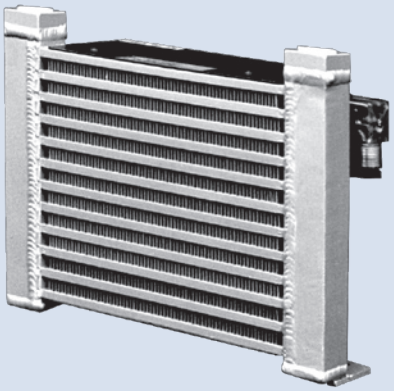
**Example (hydraulic):**

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

# PLATE-FIN HEAT EXCHANGER



## How to order

| S1 | - | 20 | - | 3T / 4T | 4(6) | C | A※(D※) | P | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

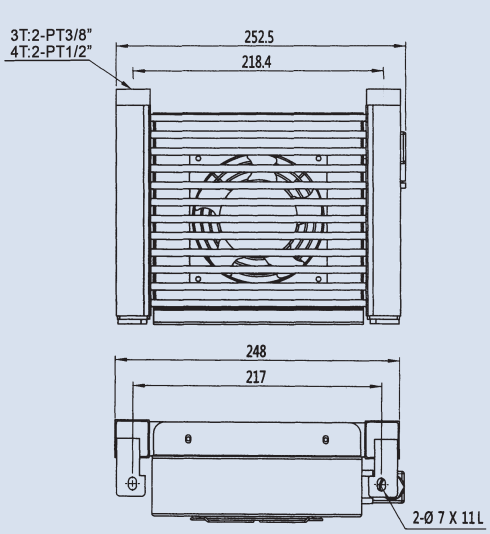
| | | | |
|---|---|---|---|
| 1 | Series no. | 5 | None: Without fan case C: With fan case |
| 2 | Model | 6 | Voltage D1: DC12V D2: DC24V A1: AC110V A2: AC220V A3: AC380V (50/60HZ) |
| 3 | Port size 3T: PT 3/8" 4T: PT 1/2" | 7 | Motor phase P: Single phase |
| 4 | Fan diameter 4: 4" 6: 6" | 8 | E: CE approved |

## Specifications

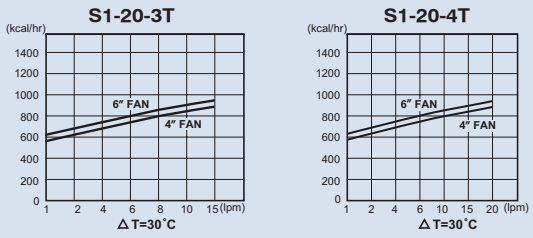
| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m) | Air Flow (m³/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1~15 | No fan | 15 | - | - | - | - | - | - | - | - | 1.2 |
| | 830 (4" fan) | | DC12 | - | 0.6 | 7.2 | 2600 | 187 | 54 | 40 | 2.4 |
| | | | DC24 | - | 0.3 | 7.2 | 2600 | 187 | | 40 | |
| | | | 110 | 50/60 | 0.24/0.27 | 19/23 | 2700/3100 | 142.8/178.5 | | 45/51 | |
| | | | 220 | 50/60 | 0.12/0.14 | 20/24 | 2700/3100 | 142.8/178.5 | | 45/51 | |
| | 950 (6" fan) | | DC12 | - | 0.96 | 11.5 | 3000 | 384.2 | | 51 | 2.8 |
| | | | DC24 | - | 0.48 | 11.5 | 3000 | 384.2 | | 51 | |
| | | | 110 | 50/60 | 0.48/0.55 | 45/52 | 2800/3100 | 323/374 | | 53/59 | |
| | | | 220 | 50/60 | 0.28/0.35 | 44/51 | 2800/3100 | 323/374 | | 53/59 | |
| | | | 380 | 50/60 | 0.12/0.15 | 46/57 | 2800/3100 | 323/374 | | 53/59 | |

## Dimensions/Performance curves

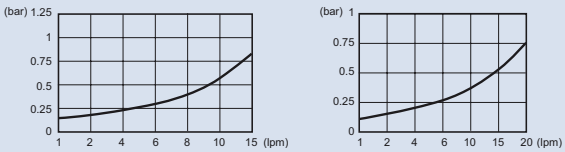
Unit: mm



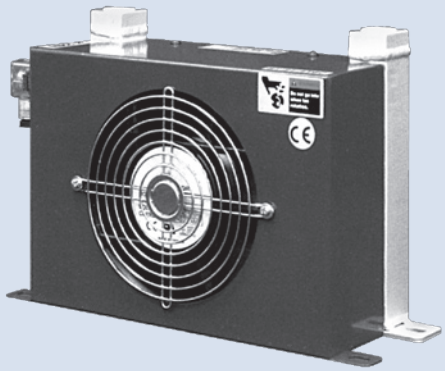

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER



## How to order

**S1 - 21 - 4T 6 C A※(D※) P E**

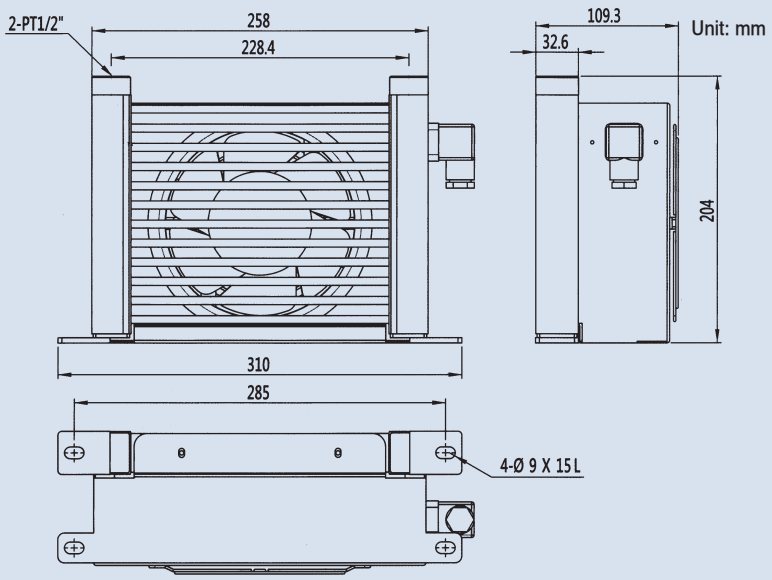
1 2 3 4 5 6 7 8

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 4T: PT 1/2" |
| 4 | Fan diameter 6: 6" |
| 5 | C: With fan case |
| 6 | Voltage D1: DC12V D2: DC24V A1: AC110V A2: AC220V A3: AC380V (50/60HZ) |
| 7 | Motor phase P: Single phase |
| 8 | E: CE approved |

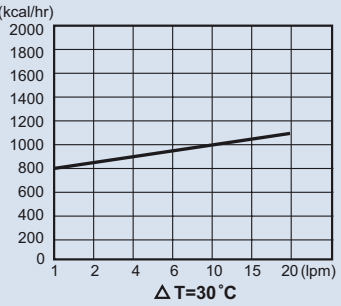
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m) | Air Flow (m³/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1~20 | 1100 | 15 | DC12 | - | 0.96 | 11.5 | 3000 | 384.2 | 54 | 51 | 3.3 |
| | | | DC24 | - | 0.48 | 11.5 | 3000 | 384.2 | | 51 | |
| | | | 110 | 50/60 | 0.48/0.55 | 45/52 | 2800/3100 | 323/374 | | 53/59 | |
| | | | 220 | 50/60 | 0.28/0.35 | 44/51 | 2800/3100 | 323/374 | | 53/59 | |
| | | | 380 | 50/60 | 0.12/0.15 | 46/57 | 2800/3100 | 323/374 | | 53/59 | |

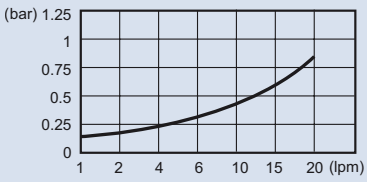
## Dimensions/Performance curves




### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER

## How to order

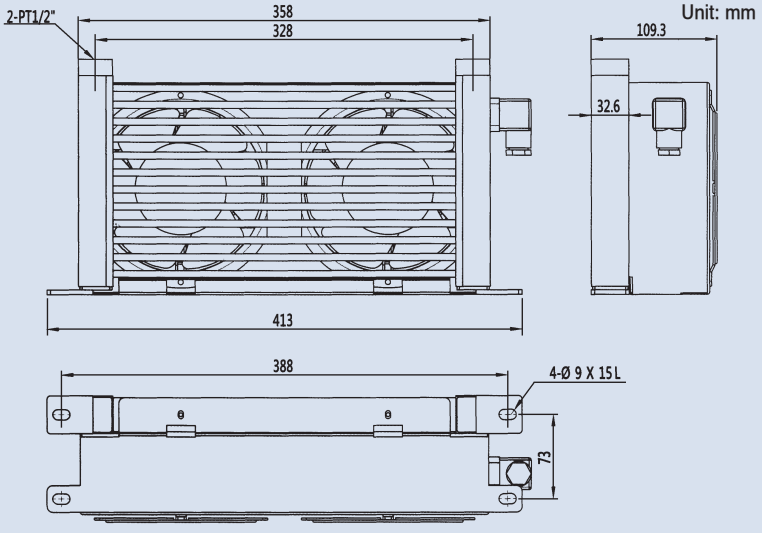
| S1 | - | 31 | - | 4T | 6 | C | A※(D※) | P | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 4T: PT 1/2" |
| 4 | Fan diameter 6: 6" |
| 5 | C: With fan case |
| 6 | Voltage D1: DC12V D2: DC24V A1: AC110V A2: AC220V A3: AC380V (50/60HZ) |
| 7 | Motor phase P: Single phase |
| 8 | E: CE approved |

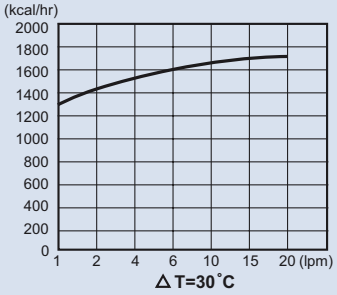
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1~20 | 1750 | 15 | DC12 | - | 1.92 | 23 | 3000 | 768.4 | 54 | 51 | 4.7 |
| | | | DC24 | - | 0.96 | 23 | 3000 | 768.4 | | 51 | |
| | | | 110 | 50/60 | 0.96/1.10 | 90/104 | 2800/3100 | 646/748 | | 53/59 | |
| | | | 220 | 50/60 | 0.56/0.70 | 88/102 | 2800/3100 | 646/748 | | 53/59 | |
| | | | 380 | 50/60 | 0.24/0.30 | 70/82 | 2800/3100 | 646/748 | | 53/59 | |

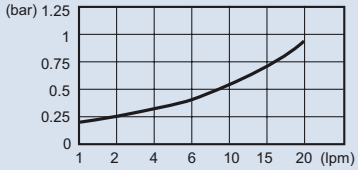
## Dimensions/Performance curves



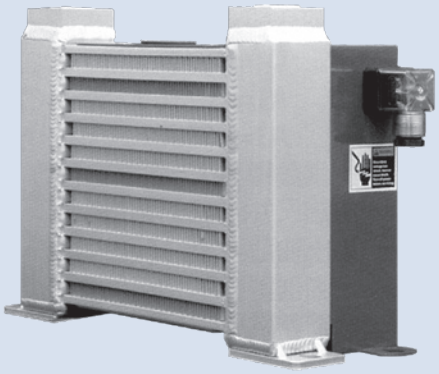

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER



## How to order

**S2 - 15 - 6T 6 C A※(D※) P E**

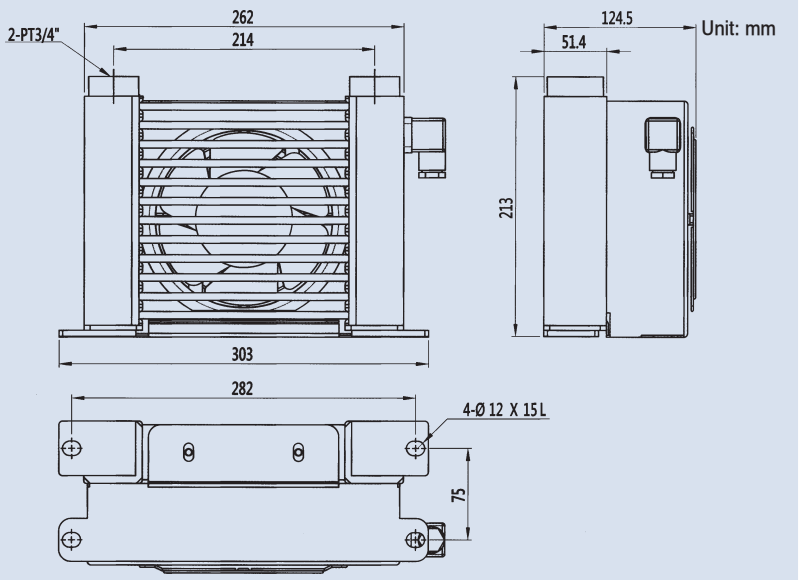
1 2 3 4 5 6 7 8

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 6T: PT 3/4" |
| 4 | Fan diameter 6: 6" |
| 5 | C: With fan case |
| 6 | Voltage D1: DC12V D2: DC24V A1: AC110V A2: AC220V A3: AC380V (50/60HZ) |
| 7 | Motor phase P: Single phase |
| 8 | E: CE approved |

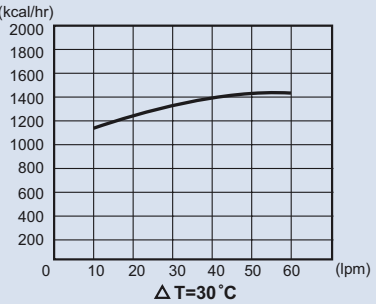
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3~60 | 1500 | 15 | DC12 | - | 0.96 | 11.5 | 3000 | 384.2 | 54 | 51 | 4 |
| | | | DC24 | - | 0.48 | 11.5 | 3000 | 384.2 | | 51 | |
| | | | 110 | 50/60 | 0.48/0.55 | 45/52 | 2800/3100 | 323/374 | | 53/59 | |
| | | | 220 | 50/60 | 0.28/0.35 | 44/51 | 2800/3100 | 323/374 | | 53/59 | |
| | | | 380 | 50/60 | 0.12/0.15 | 46/57 | 2800/3100 | 323/374 | | 53/59 | |

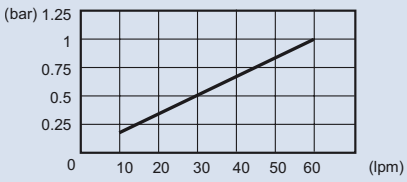
## Dimensions/Performance curves



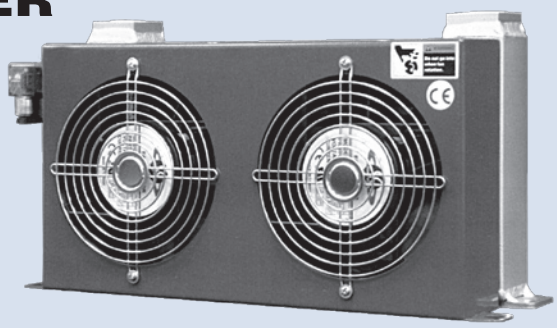

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER



## How to order

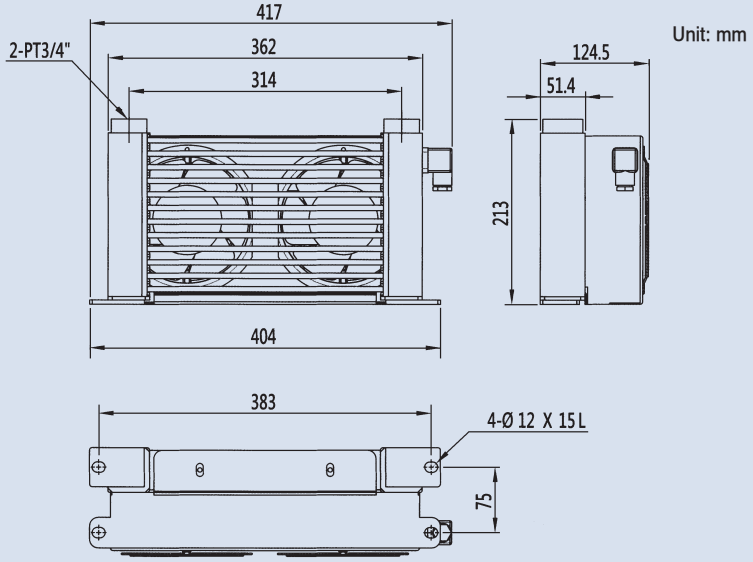
| S2 | - | 25 | - | 6T | 6 | C | A※(D※) | P | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 6T: PT 3/4" |
| 4 | Fan diameter 6: 6" |
| 5 | C: With fan case |
| 6 | Voltage D1: DC12V D2: DC24V A1: AC110V A2: AC220V A3: AC380V (50/60HZ) |
| 7 | Motor phase P: Single phase |
| 8 | E: CE approved |

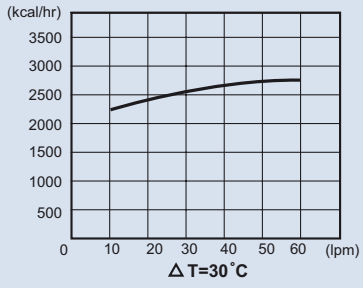
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3~60 | 2700 | 15 | DC12 | - | 1.92 | 23 | 3000 | 768.4 | 54 | 51 | 6 |
| | | | DC24 | - | 0.96 | 23 | 3000 | 768.4 | | 51 | |
| | | | 110 | 50/60 | 0.96/1.10 | 90/104 | 2800/3100 | 646/748 | | 53/59 | |
| | | | 220 | 50/60 | 0.56/0.70 | 88/102 | 2800/3100 | 646/748 | | 53/59 | |
| | | | 380 | 50/60 | 0.24/0.30 | 70/82 | 2800/3100 | 646/748 | | 53/59 | |

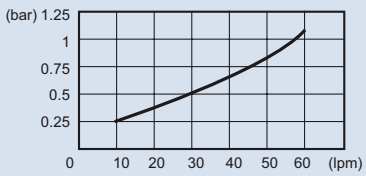
## Dimensions/Performance curves




### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER

## How to order

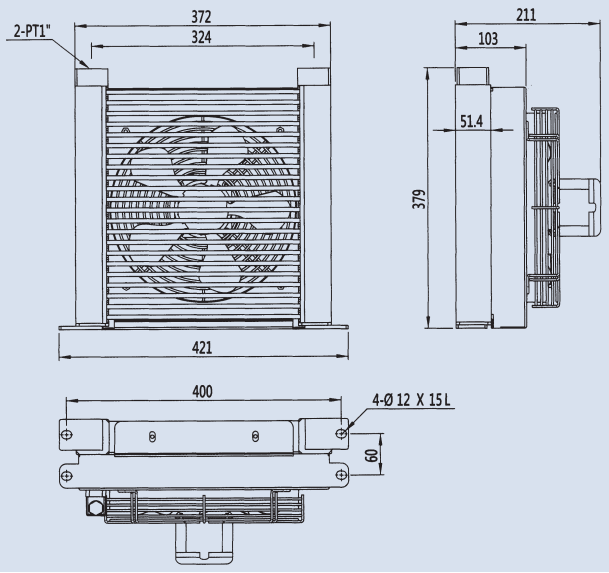
| S2 | - | 26 | - | 8T | 10 | C | A※(D※) | P PP | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 8T: PT 1" |
| 4 | Fan diameter 10: 10" |
| 5 | C: With fan case |
| 6 | Voltage D1: DC12V D2: DC24V A1: AC110V A2: AC220V A3: AC380V A23: AC220/380V (50/60HZ) |
| 7 | Motor phase P: Single phase PP: 3 phase |
| 8 | E: CE approved |

## Specifications

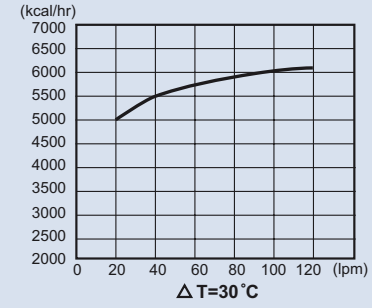
| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m±5%) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 20~100 | 6000 | 15 | DC12 | - | 7.9 | 94.8 | 2325 | 2160 | 54 | 74.5 | 7.5 |
| | | | DC24 | - | 3.95 | 94.8 | 2313 | 2642 | | 74.5 | |
| | | | 110 | 50/60 | 0.56/0.55 | 62/61 | 1400/1600 | 1460/1600 | | 55/57 | 9.1 |
| | | | 220 | 50/60 | 0.30/0.25 | 62/61 | 1400/1600 | 1460/1600 | | 55/57 | |
| | | | 380 | 50/60 | 0.18/0.14 | 62/61 | 1400/1600 | 1460/1600 | | 55/57 | |

## Dimensions/Performance curves

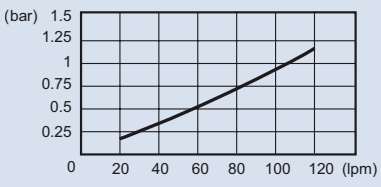



Unit: mm

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER

## How to order

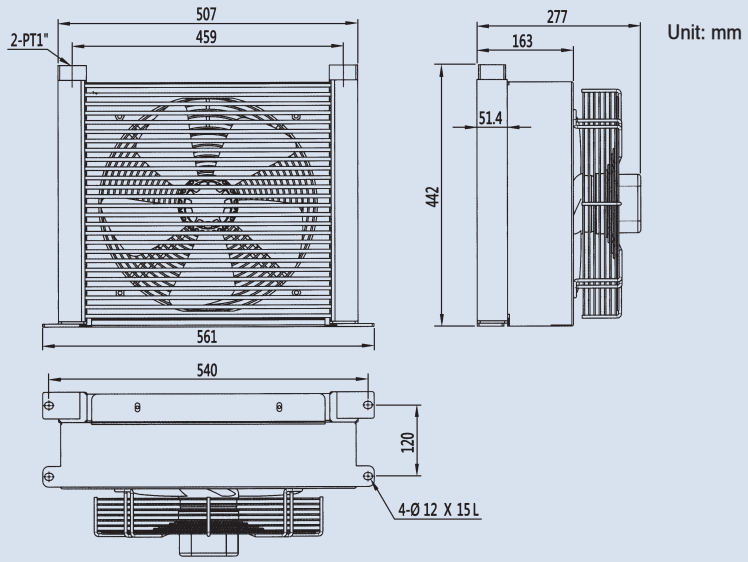
| S2 | - | 40 | - | 8T | 14 | C | A※(D※) | P PP | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 8T: PT 1" |
| 4 | Fan diameter 14: 14" |
| 5 | C: With fan case |
| 6 | Voltage D1: DC12V D2: DC24V A1: AC110V A2: AC220V A3: AC380V A23: AC220/380V (50/60HZ) |
| 7 | Motor phase P: Single phase PP: 3 phase |
| 8 | E: CE approved |

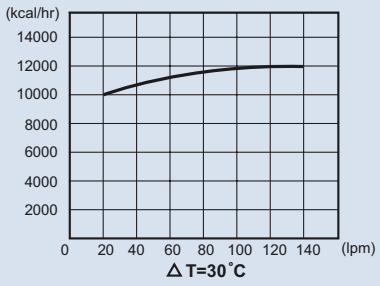
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m±5%) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30~110 | 12000 | 15 | DC12 | - | 4.5 | 54 | 2495 | 1360 | 54 | 70.6 | 12.5 |
| | | | DC24 | - | 2.25 | 54 | 2272 | 1097 | | 74.3 | |
| | | | 110 | 50/60 | 1.36/1.63 | 150/180 | 1380/1550 | 3170/3420 | | 62/65 | 15.3 |
| | | | 220 | 50/60 | 0.80/0.70 | 150/180 | 1380/1550 | 3170/3420 | | 62/65 | |
| | | | 380 | 50/60 | 0.40/0.47 | 150/180 | 1380/1550 | 3170/3420 | | 62/65 | |

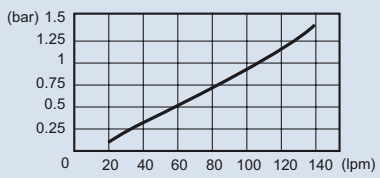
## Dimensions/Performance curves



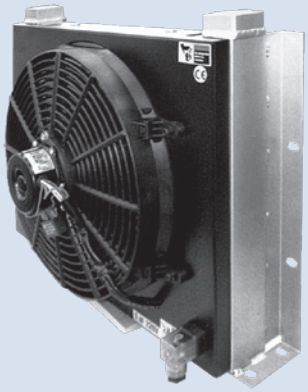

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER



## How to order

**S2 - 40 - 8T 14 D A※(D※) P E**

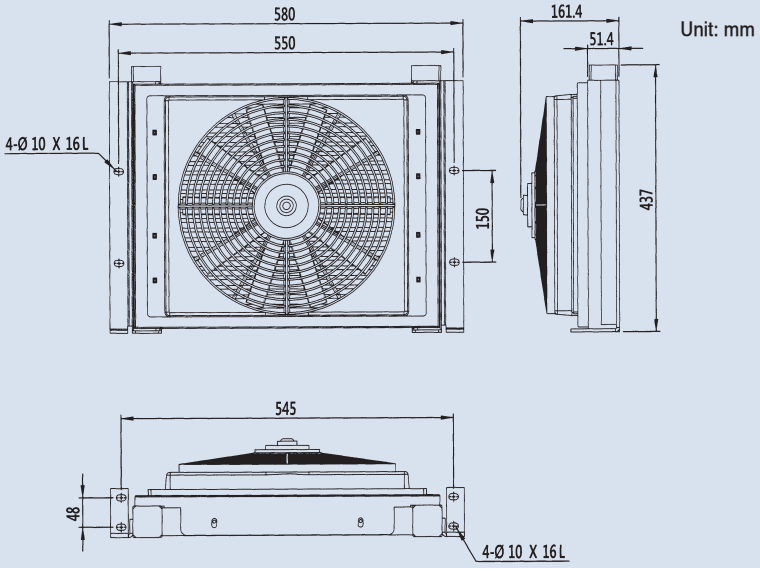
1 2 3 4 5 6 7 8

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 8T: PT 1" |
| 4 | Fan diameter 14: 14" |
| 5 | D: With small fan case |
| 6 | Voltage D1: DC12V D2: DC24V A1: AC110V A2: AC220V (50/60HZ) |
| 7 | Motor phase P: Single phase |
| 8 | E: CE approved |

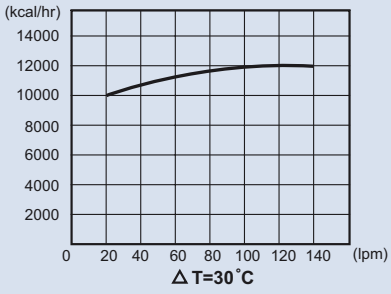
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m±5%) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30~110 | 12000 | 15 | DC12 | - | 4.5 | 54 | 2495 | 1360 | 54 | 70.6 | 10 |
| | | | DC24 | - | 2.25 | 54 | 2272 | 1097 | | 74.3 | |
| | | | 110 | 50/60 | 0.36/0.45 | 40/50 | 1450/1650 | 2700/3300 | | 62/65 | |
| | | | 220 | 50/60 | 0.18/0.23 | 40/50 | 1450/1650 | 2700/3300 | | 62/65 | |

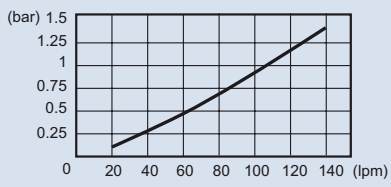
## Dimensions/Performance curves



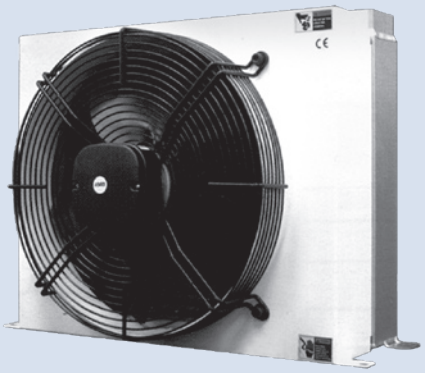

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER



## How to order

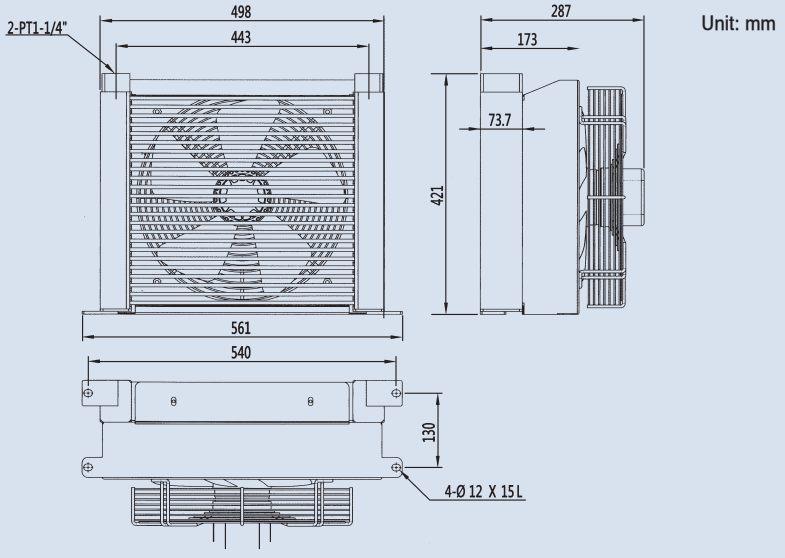
| S3 | - | 39 | - | 10T | 14 | C | A※ | P PP | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 10T: PT 1-1/4" |
| 4 | Fan diameter 14: 14" |
| 5 | C: With fan case |
| 6 | Voltage A1: AC110V A2: AC220V A3: AC380V A23: AC220/380V (50/60HZ) |
| 7 | Motor phase P: Single phase PP: 3 phase |
| 8 | E: CE approved |

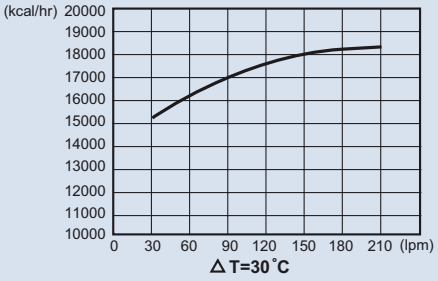
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m±5%) | Air Flow (m³/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30~150 | 18000 | 20 | 220 | 50/60 | 0.80/0.70 | 150/180 | 1380/1550 | 3170/3420 | 54 | 62/65 | 18.3 |
| | | | 380 | 50/60 | 0.40/0.36 | 150/180 | 1380/1550 | 3170/3420 | | 62/65 | |

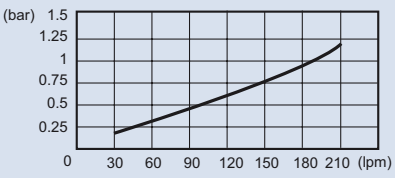
## Dimensions/Performance curves



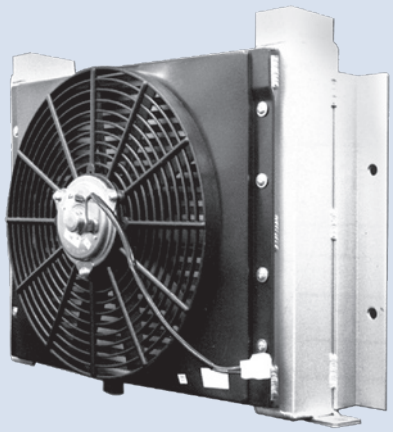

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER



## How to order

**S3 - 39 - 10T 14 D A※(D※) P E**

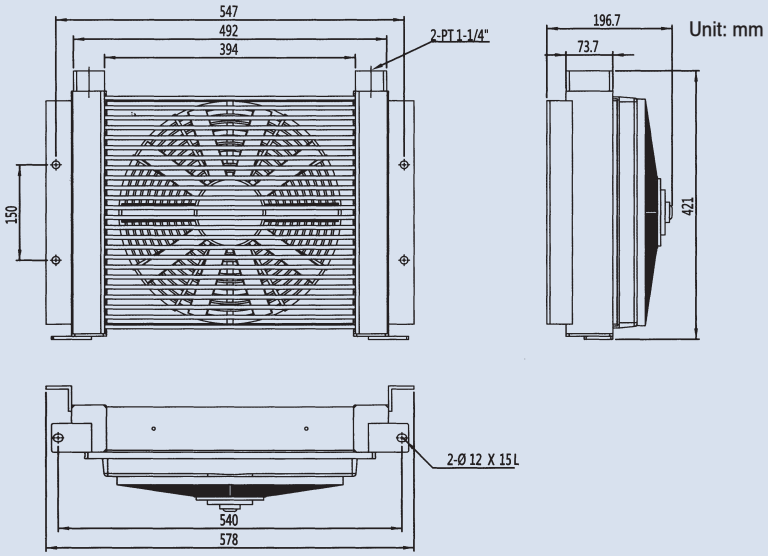
1 2 3 4 5 6 7 8

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 10T: PT 1-1/4" |
| 4 | Fan diameter 14: 14" |
| 5 | D: With small fan case |
| 6 | Voltage D1: DC12V D2: DC24V A1: AC110V A2: AC220V (50/60HZ) |
| 7 | Motor phase P: Single phase |
| 8 | E: CE approved |

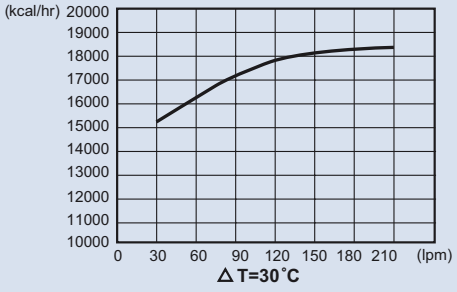
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m±5%) | Air Flow (m³/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30~150 | 18000 | 20 | DC12 | - | 4.5 | 54 | 2495 | 1360 | 54 | 70.6 | 12.4 |
| | | | DC24 | - | 2.25 | 54 | 2272 | 1097 | | 74.3 | |
| | | | 110 | 50/60 | 0.36/0.45 | 40/50 | 1450/1650 | 2700/3300 | | 62/65 | |
| | | | 220 | 50/60 | 0.18/0.23 | 40/50 | 1450/1650 | 2700/3300 | | 62/65 | |

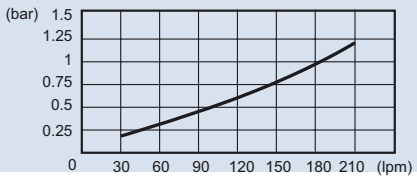
## Dimensions/Performance curves



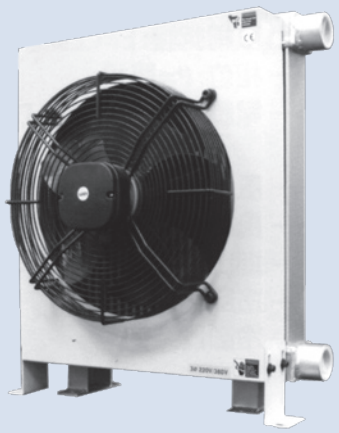

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER



## How to order

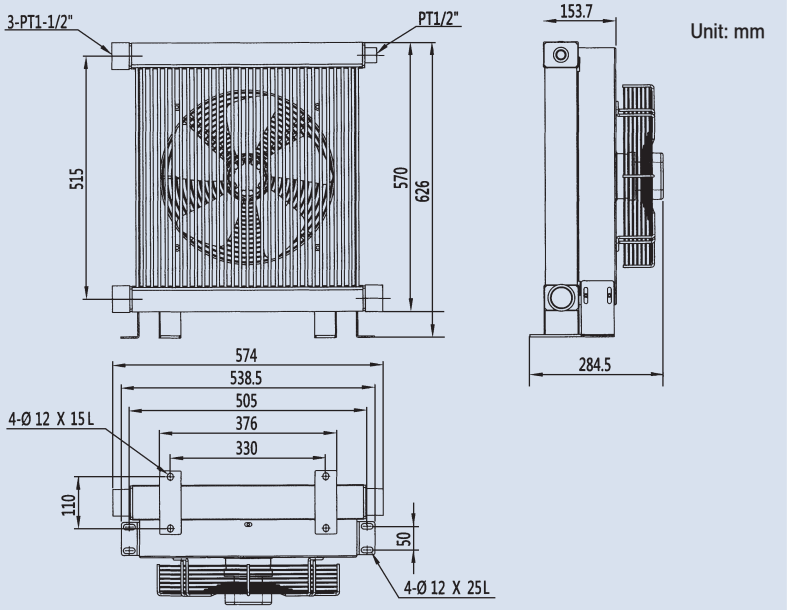
| S3 | - | 47 | - | 12T | 14 | C | A※ | P<br>PP | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 12T: PT 1-1/2" |
| 4 | Fan diameter 14: 14" |
| 5 | C: With fan case |
| 6 | Voltage A2: AC220V A3: AC380V A23: AC220/380V (50/60HZ) |
| 7 | Motor phase P: Single phase PP: 3 phase |
| 8 | E: CE approved |

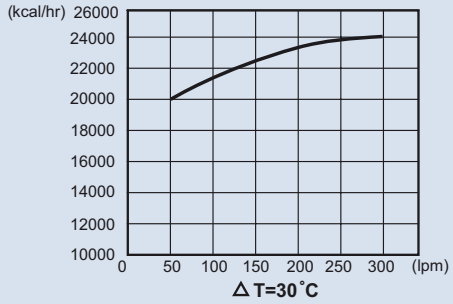
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m±5%) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30~200 | 23000 | 20 | 220<br>380 | 50/60 | 0.80/0.70<br>0.40/0.36 | 150/180 | 1380/1550 | 3200/3800 | 54 | 62/64 | 24.2 |

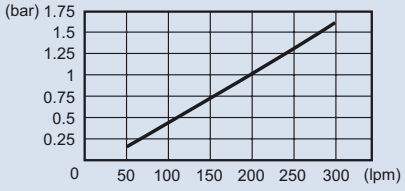
## Dimensions/Performance curves



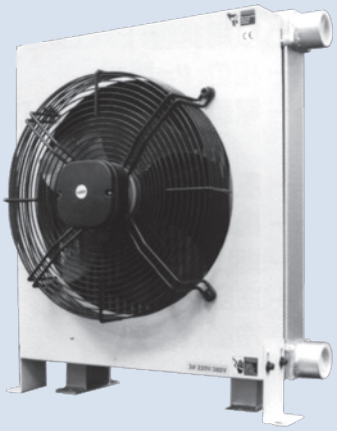

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER



## How to order

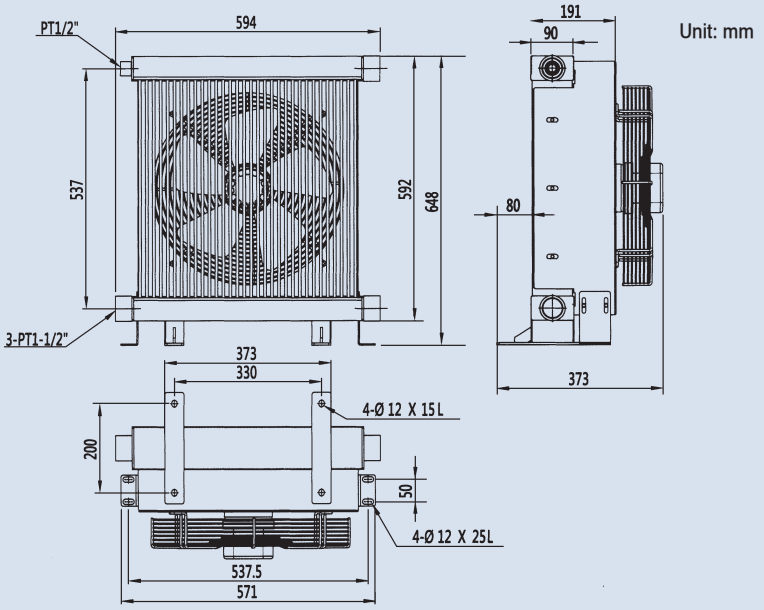
| S4 | - | 48 | - | 12T | 16 | C | A※ | P PP | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 12T: PT 1-1/2" |
| 4 | Fan diameter 16: 16" |
| 5 | C: With fan case |
| 6 | Voltage A2: AC220V A3: AC380V A23: AC220/380V (50/60HZ) |
| 7 | Motor phase P: Single phase PP: 3 phase |
| 8 | E: CE approved |

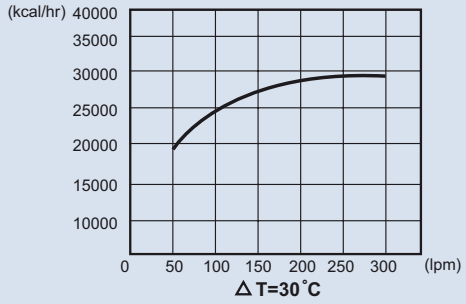
## Specifications

| Oil Flow (lpm) | Capacity Δt=30 °C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (Watt) | Rated Speed (r.p.m±5%) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30~250 | 28000 | 20 | 220<br>380 | 50/60 | 0.90/1.0<br>0.50/0.53 | 145/250 | 1380/1550 | 4000/4800 | 54 | 62/64 | 29.4 |

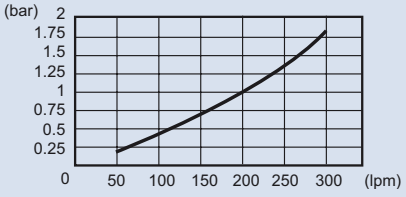
## Dimensions/Performance curves



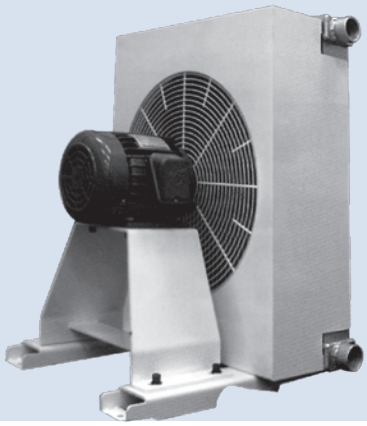

### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER



## How to order

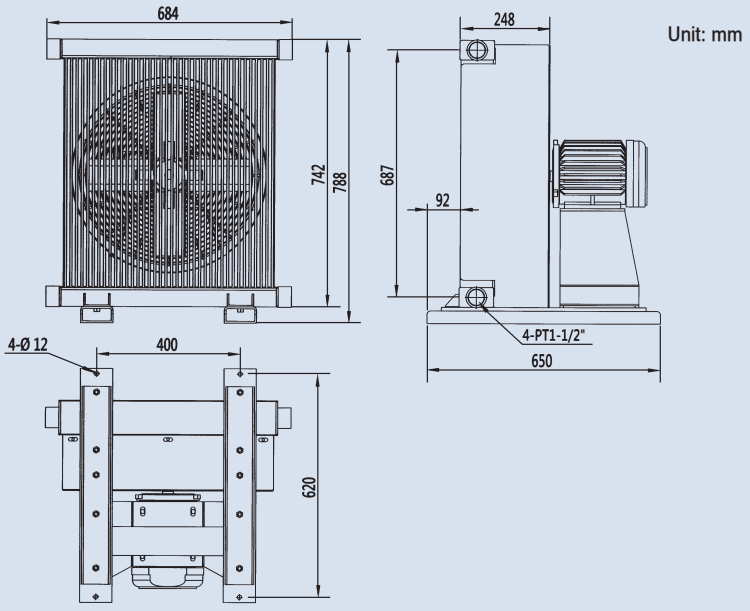
| S4 | - | 63 | - | 12T | 18 | C | A23 | PP | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 12T: PT 1-1/2" |
| 4 | Fan diameter 18:18" |
| 5 | C: With fan case |
| 6 | Voltage A23: AC220V/380V (50/60HZ) |
| 7 | Motor phase PP: 3 phase |
| 8 | E: CE approved |

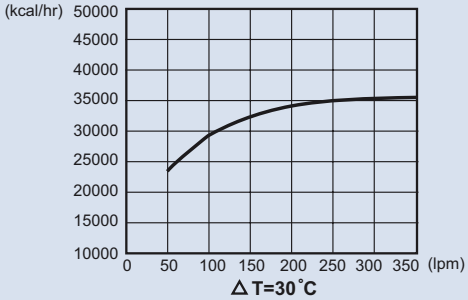
## Specifications

| Oil Flow (lpm) | Capacity Δt=30°C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (kw) | Rated Speed (r.p.m±5%) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50~300 | 35000 | 20 | 220<br>380 | 60 | 5.7<br>3.3 | 1.25 | 1720 | 7600 | 55 | 78 | 52 |

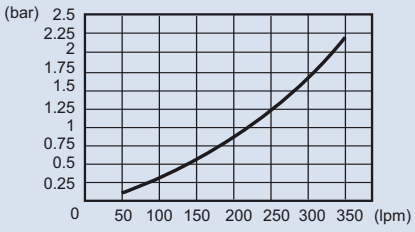
## Dimensions/Performance curves




### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)



# PLATE-FIN HEAT EXCHANGER

## How to order

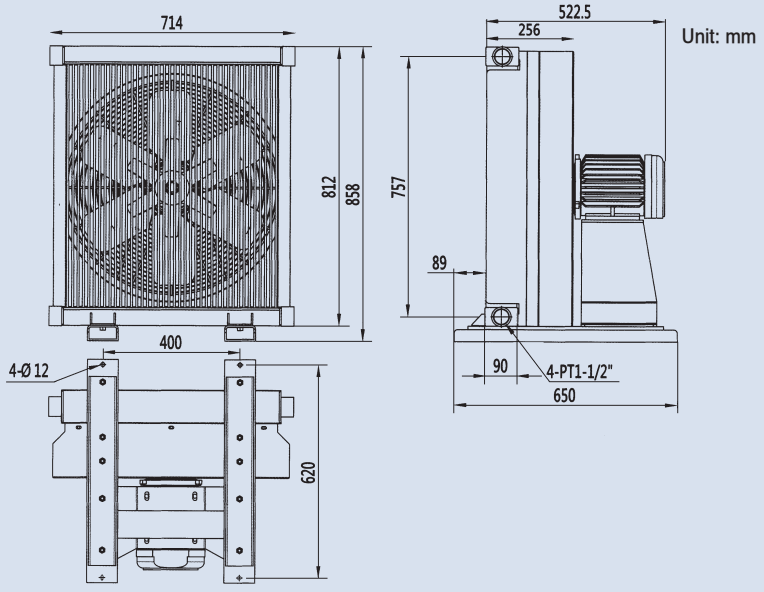
| S4 | - | 70 | - | 12T | 23 | C | A23 | PP | E |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | 4 | 5 | 6 | 7 | 8 |

| | |
|---|---|
| 1 | Series no. |
| 2 | Model |
| 3 | Port size 12T: PT 1-1/2" |
| 4 | Fan diameter 23: 23" |
| 5 | C: With fan case |
| 6 | Voltage A23: AC220V/380V (50/60HZ) |
| 7 | Motor phase PP: 3 phase |
| 8 | E: CE approved |

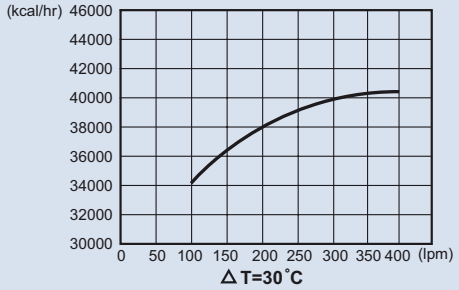
## Specifications

| Oil Flow (lpm) | Capacity Δt=30°C (Kcal/hr) | MAX. Pressure (bar) | Voltage (V±10%) | Frequence (Hz) | Current (A) | Power (kw) | Rated Speed (r.p.m±5%) | Air Flow ($m^3$/hr) | Motor (IP) | Noise (dB (A)) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50~350 | 40000 | 20 | 220<br>380 | 60 | 5.7<br>3.3 | 1.25 | 1720 | 8560 | 55 | 90 | 80 |

## Dimensions/Performance curves




### PERFORMANCE DIAGRAM




### LOSS OF PRESSURE (at 32 Cst)