

KAORI



®

**The New Evolution of a Heat Exchanger  
KAORI Air Dryer K070AD series**



**Beyond Frontiers!**

**Less than 0.1 bar pressure drop**

**Combined all in one.**

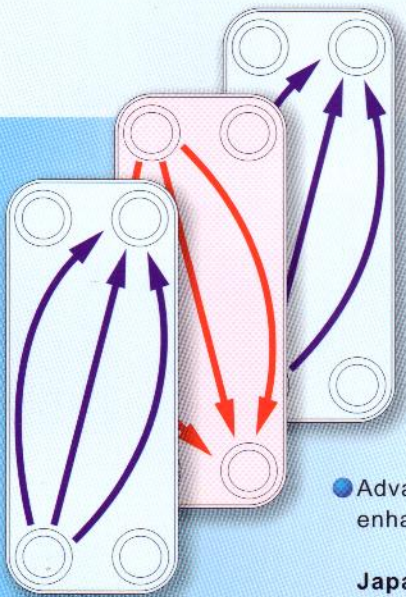
**Precooler, Separator and Dryer**

[www.kaori-taiwan.com](http://www.kaori-taiwan.com)



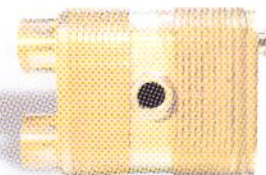
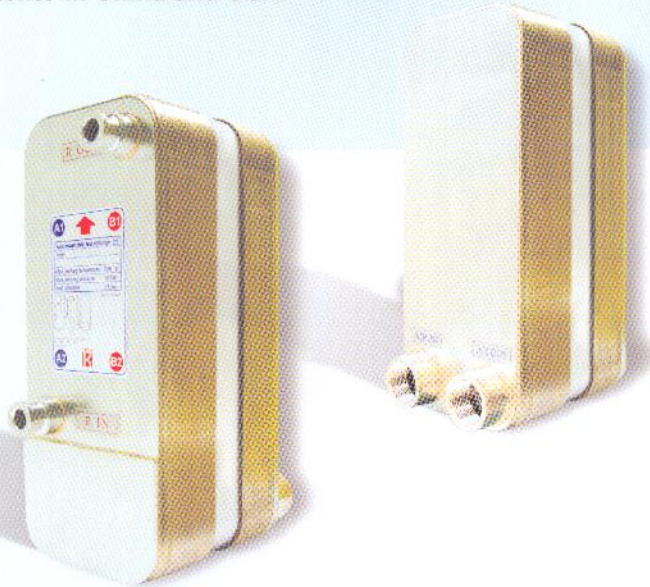
## Innovation

In the compressed air system, to prevent corrosion from condensed water is a very important issue. In order to deal with the task, the commonly used tool is the air dryer. In this kind of equipments, huge volume, high pressure loss, complicated piping design, corrosion and low pressure resistance in traditional types of heat exchangers are the main problems which engineers are trying to overcome. In 2006, Kaori successfully developed plate heat exchangers for air dryer systems with air flow rates between 2.4~5.8m<sup>3</sup>/min (88~206cfm). With completed research and tested data, Kaori proved uniqueness of the new design, and obtained patents in **Taiwan, Japan and Korea, with pending patents in China and USA.**



- Advance counter flow design enhanced better efficiency.

**Japan Patent No. 3117784**  
**Taiwan Patent No. M283985**  
**Korea Patent No.20-0415739**  
Patents in China and USA are still pending.



Drain Separator

## Features and Advantages

### Compact in one set

A multi-functional plate heat exchanger successfully integrates pre-cooling, drying, separating, and heat recovering processes all together.

### Strong frame

The plate heat exchanger is made of stainless steel, and processed by sophisticated brazing process. It is suitable for many different kinds of working conditions, with maximum working pressure up to 16 bar (232 psi).

### High performance

Awarded with patents from many countries and being the leader minimizing pressure loss in the industry, the new design minimized pressure loss in air channels to an incredibly low level of under 0.1 bar(1.45 psi). It saves energy for air compressor, satisfies different air inlet temperature requirements for various system designs, and possesses stable performance in dew point temperature.

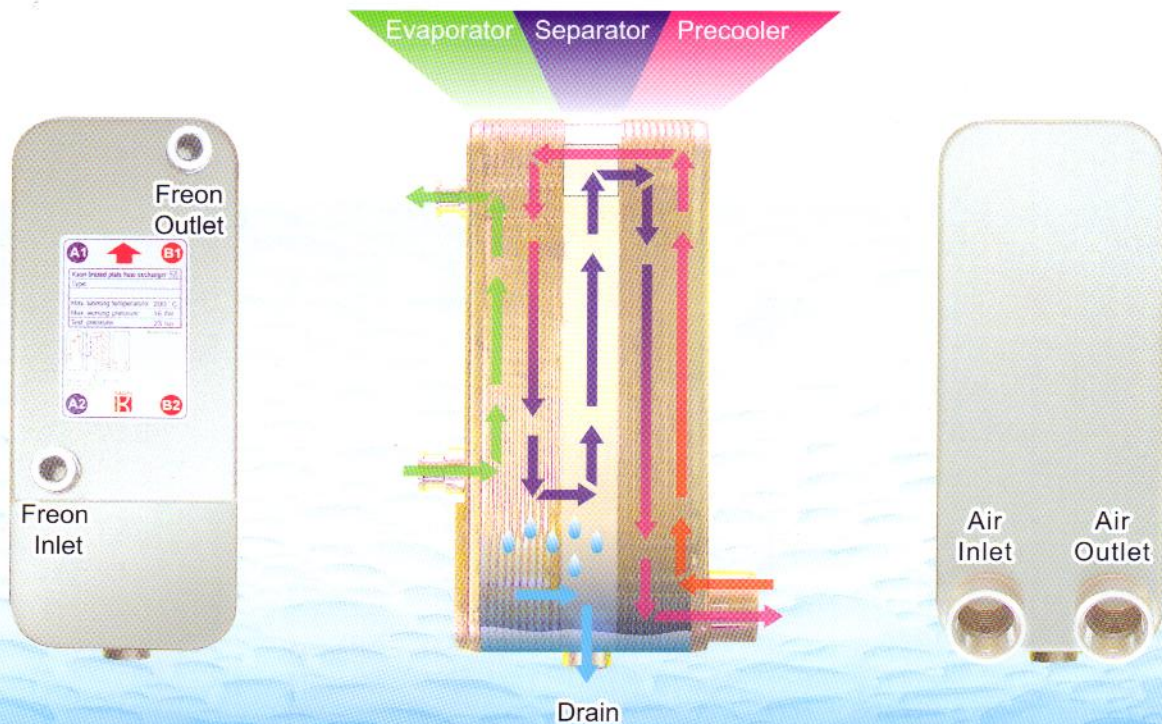
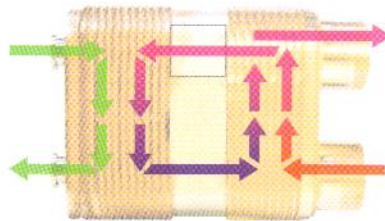
### Simple exterior design

The ports for refrigeration cycle are made on the same side, while the ports for air are made on the other. It is not necessary to apply extra pipings for separator as separator itself is integrated into the unit. It saves cost and space by installing a small compact plate heat exchanger in an air dryer system.



## Process of dehumidification

- Humid air with high pressure enters pre-cooling zone first, and begins heat exchanging process with cooled and dried air which is heading to the outlet.
- Then air enters the evaporating zone, to be cooled and dehumidified by refrigerant. This process utilizes refrigeration cycle for air to reach designed dew point temperature.
- When air passes through the separator, condensed water is collected and drained.
- Before leaving the heat exchanger, the cooled and dried air passes pre-cooling zone to recover heat again. The purpose is to recover air to a higher temperature, and prevents water condensation on the piping surface. Furthermore, this process pre-cools the inlet air and reduces the load of the refrigeration system.





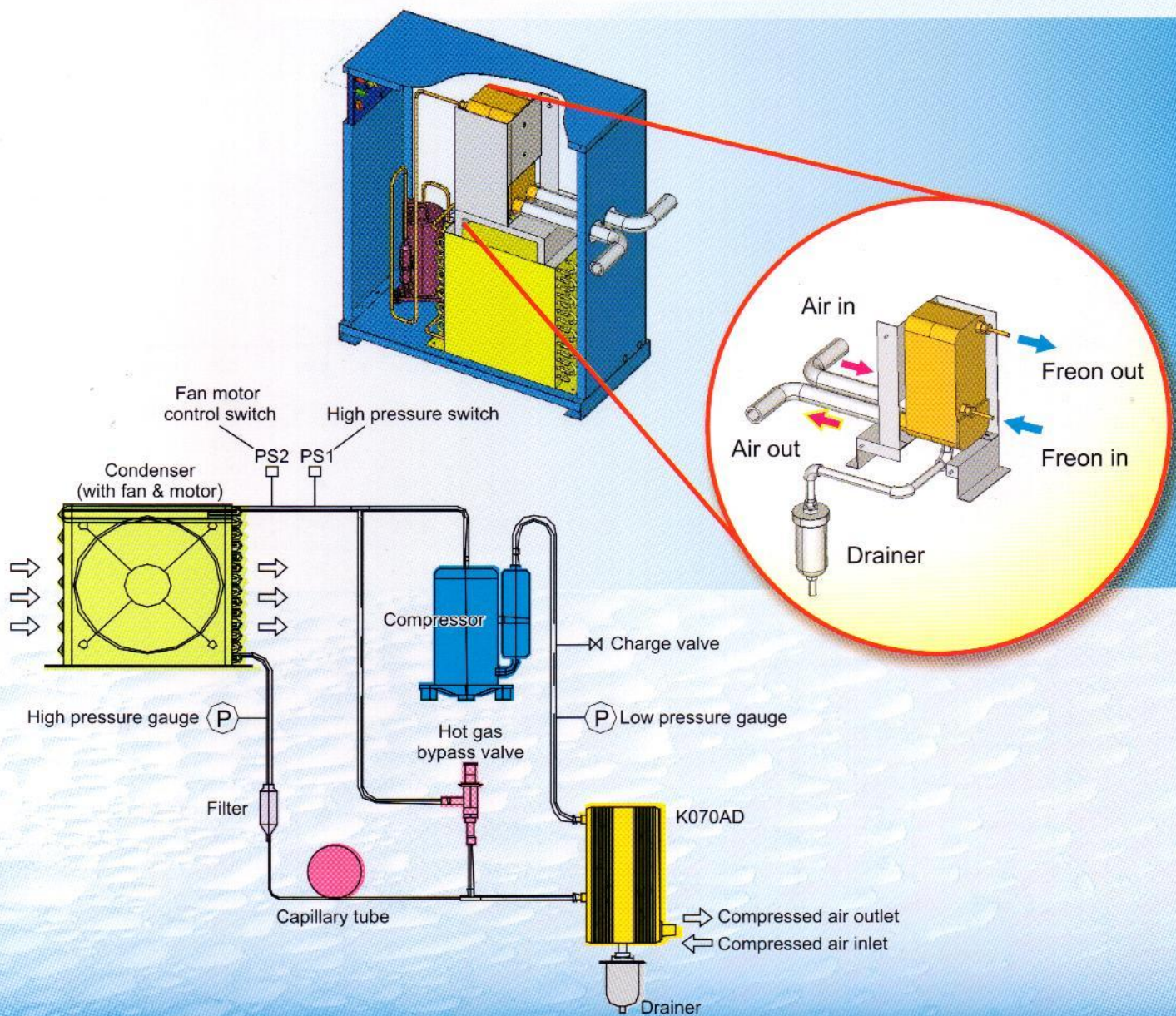


## Working Range

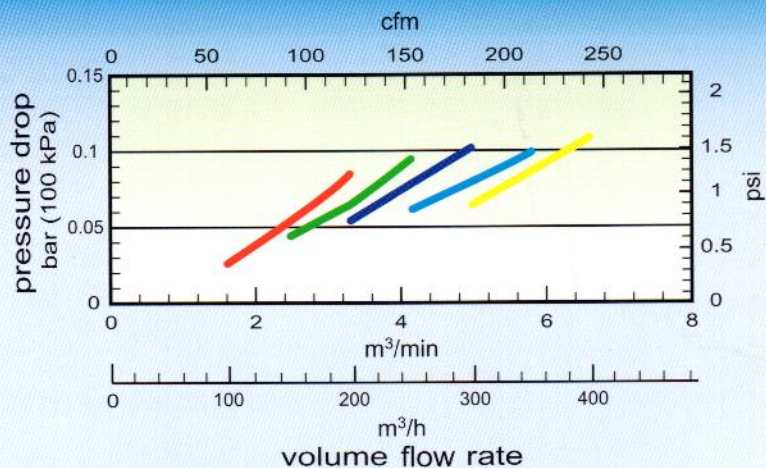
K070AD series are suitable for all types of refrigerants, for example, R22, R134a, R407c, R410...etc.

Model	Max. Working Pressure	Test Pressure	Max. Working Temperature
K070AD series	16 bar (232 psi)	24 bar (348 psi)	150°C

## Piping diagram (reference)

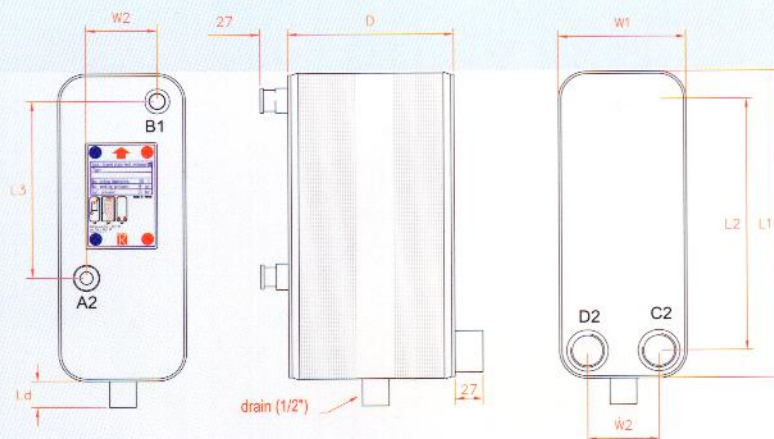






- K070AD\*16\*14C
- K070AD\*20\*16C
- K070AD\*26\*18C
- K070AD\*30\*28C
- K070AD\*40\*32C

Unit conversion:  
 1 bar = 100 kPa = 14.5 psi  
 1 m<sup>3</sup>/min = 60 m<sup>3</sup>/h = 35.3 cfm



model	W1 (mm)	W2 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Ld (mm)	D (mm)	Weight (kg)
K070AD*16*14C	121	70	301	250	175	15	116	8.6
K070AD*20*16C	121	70	301	250	175	15	129	9.2
K070AD*26*18C	121	70	301	250	175	15	161	10.7
K070AD*30*28C	121	70	301	250	175	15	194	12.3
K070AD*40*32C	121	70	301	250	175	15	255	15.2

Flow rate			Model	Air Inlet Temp.	Freon connections	Air connections	Drain connection
m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm					
2.4	144	85	K070AD*16*14C	35°C	Φ 12.9	1"	1/2"
			K070AD*20*16C	45°C	Φ 12.9	1"	1/2"
4.2	252	148	K070AD*26*18C	35°C	Φ 12.9	1"	1/2"
			K070AD*30*28C	45°C	Φ 12.9	1"	1/2"
7.0	420	247	K070AD*40*32C	35°C	Φ 12.9	1"	1/2"

Pressure dew point < 10°C    ΔP < 0.1 bar ( 1.45 psi )    @ 7 bar air inlet





**HEAD OFFICE**

**KAORI HEAT TREATMENT CO., LTD.**

5-2, Chi-Lin North Road, Chung-Li Industrial District, Chung-Li City, Taiwan

TEL: +886-3-4527005

<http://www.kaori-taiwan.com>

FAX: +886-3-4612283

e-mail: [sales@kaori.com.tw](mailto:sales@kaori.com.tw)

**CHINA PLANT**

**KAORI TECHNOLOGY (NINGBO) CO., LTD.**

8, Chuangye 4th Road, Free Trade West Zone, Ningbo, China 315800

TEL: +86-574-86875468

<http://www.kaori.com.cn>

FAX: +86-574-86867208

e-mail: [nbsales@kaori.com.tw](mailto:nbsales@kaori.com.tw)