

PascalAir·FC

Refrigeration System

MAYEKAWA
MYCOM



**Air Cycle
Refrigeration System**

<https://mayekawa.com/americas/mna>

Pascal Air Air Cycle Refrigeration System

Ultra-low temperature created by Air

Realizing the world of -100°C/-150°F degrees using only air as the primary refrigerant

Pascal Air and Pascal FC is a refrigeration system using the ultimate natural working fluid, Air. It compresses air, removes the compression heat, and expands the air adiabatically to cool a cold storage room or low temperature heat transfer fluid.

ADVANTAGES

- Eliminate evaporators, air coolers and fans from the freezer
- No defrosting of freezer space or in-room equipment required
- Reduce power usage by up to 40% compared to cascade systems
- Eliminate additional heat load from auxiliary equipment
- Vastly simplified installation using air ducting only
- Improved safety through elimination of traditional refrigerants
- No piping of primary or secondary refrigerants required*

* For Pascal Air system. Pascal FC system requires secondary brine piping.

APPLICATIONS

- Cold storage for tuna/oceanic bonito
- Chemical cooling processes
- Food product rapid freezing
- Vacuum Freeze-drying
- Home appliance recycling (cryogenic grinding)
- Semiconductor manufacturing processes
- Industries requiring ultra-low temperatures
 - Pharmaceutical
 - Hospitals
 - Physics/chemistry fields

DIMENSIONS & SPECIFICATIONS

Dimensions are for reference only. Please contact MYCOM for more detailed drawings.

PascalAir

Model	PAS15-R	PAS30-R
Refrigerant	Not required	
Cooling Power*	15kW / 4.26TR	30kW / 8.53TR
Compressor Power*	30kW / 40.2 HP	60kW / 80.4HP
Max. allowable pressure	0.2MPa / 29Psig	
Min. operating temperature	-100°C/-148°F	
Compressor Type	Integral turbine compressor	
Expander type	Integral turbine expander	
Heat exchanger	Fin type aluminum plate	
Primary cooler material	Fin type SUS aluminum tube	
Length (mm/inch)	6,111 / 240	5,500 / 216
Width (mm/inch)	2,300 / 90	2,450 / 96
Height (mm/inch)	2,800 / 110	2,800 / 110

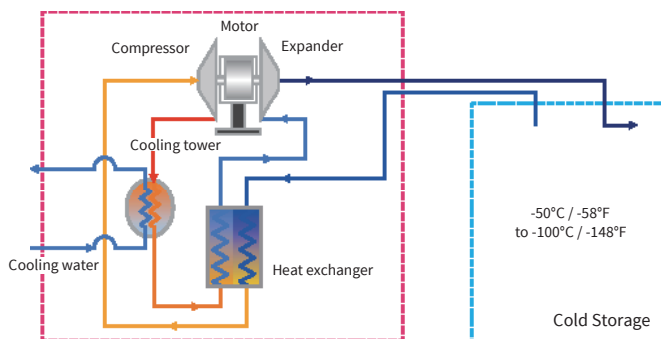
* @ -60°C / -76°F internal temperature

Pascal FC

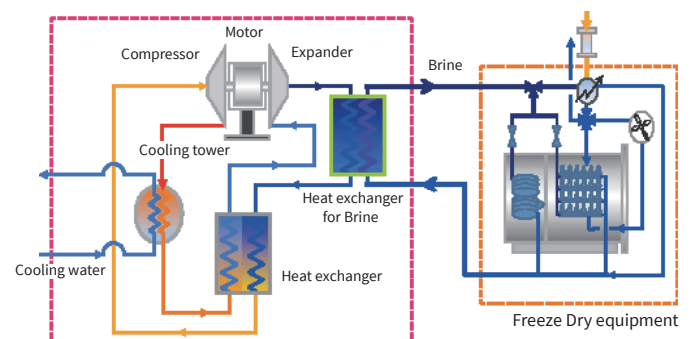
Model	PAS15-B	PAS30-B
Refrigerant	Air, Nitrogen	
Cooling power**	15kW / 4.26TR	30kW / 8.53TR
Compressor power**	30kW / 40.2 HP	60kW / 80.4HP
Brine supply temperature	~-85°C/-121°F	
Power supply	3ØxAC200/220Vx50/60Hz	3ØxAC400/440Vx50/60Hz
Control power supply	3ØxAC200/220Vx50/60Hz	3ØxAC200/220Vx50/60Hz
Compressor type	Turbine compressor	
Motor type	High frequency inverter type motor	
Length (mm/inch)	5,800 / 228	7,000 / 275
Width (mm/inch)	2,200 / 86	2,500 / 98
Height (mm/inch)	2,275 / 89	2,800 / 110

** @ -50°C / -58°F brine temperature

Flow Chart



Flow Chart (for freeze-dry applications)



MAYEKAWA USA, INC.
<https://mayekawa.com/americas/mna>

Tel: +1 (615) 773-2859
 24 Hr Service: +1 (800) 836-9266
 Email: info@mayekawausa.com

MAYEKAWA CANADA, INC.
<https://mayekawa.com/americas/mna>

Vancouver: +1 (604) 270-1544
 Calgary: +1 (403) 250-1554
 Toronto: +1 (905) 564-0664