

Freezers

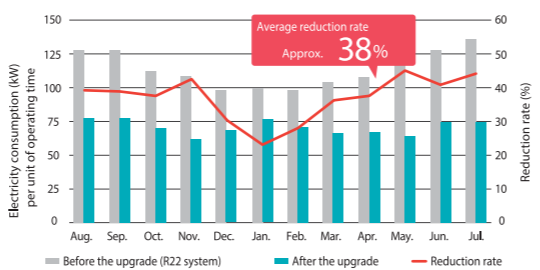
NH₃/CO₂ systems are available for both freezing and cooling temperature zones. NH₃/CO₂ delivers energy-efficient freezer operation at a wide range of temperature zones to support improved productivity at food factories.

For freezing
NH₃/CO₂F

An efficient response to load change by controlling the speed of rotation

An effective response to variations in product switching, production volume changes, and production line modifications, as well as fluctuations in freezer load, through optimal operational control, thereby achieving energy-saving effects.

Comparison of electricity consumption before and after the upgrade to a NewTon system



inside the cooler, no smell or oil would adhere to the frozen products.

	NewTon F-300		NewTon F-600		NewTon F-800		NewTon C	
Room temperature	-35°C	-40°C	-35°C	-40°C	-35°C	-40°C	-5°C	-10°C
CO ₂ supply temperature*1	-42°C	-47°C	-42°C	-47°C	-42°C	-47°C	-12°C	-17°C
Cooling capacity*2	71.7kW	51.4kW	143.4kW	102.8kW	170.0kW	134.4kW	182.5kW	144.1kW
Motor kW	43.0kW	39.7kW	86.0kW	79.4kW	100.0kW	94.7kW	67.2kW	63.0kW
C.O.P	1.67	1.29	1.67	1.29	1.70	1.42	2.72	2.29
Power source	For motor AC200~240V 50/60Hz		AC380~480V 50/60Hz		AC200~220V 50/60Hz		-	
Refrigerant	For control		AC200~220V 50/60Hz		-		-	
Refrigerant	Type		Primary: Ammonia (R717) Secondary: CO ₂ (R744)		Semi-hermetic compound screw		Semi-hermetic single stage screw	
Compressor	Drive method		400V class 200V class		Matrix Converter		VFD	
Compressor	Motor type		IPM motor		-		-	
Ammonia charge	19kg		38kg (19kg x 2sets)		60kg		50kg	
Outer dimensions (L x W x H mm)	2,780 x 1,800 x 2,050mm		5,000 x 1,900 x 2,100mm		5,050 x 2,050 x 2,250mm		3,630 x 2,050 x 2,300mm	
Net weight	2,990kg		6,390kg		6,900kg		4,450kg (type without receiver)	

*1 CO₂ supply temperature of -47°C is available as an optional feature.
*2 in the case of cooling water at 32°C

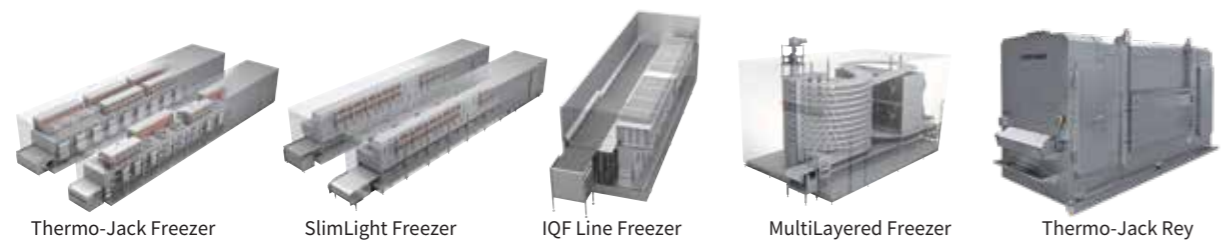
Our customers



AJINOMOTO FROZEN FOODS CO., INC. Nissui Corporation Nipponham Delicatessen Ltd. NIPPON CORPORATION

Higher performance for the entire cooling system with the best chiller and freezer combination

NH₃/CO₂F x **CHORUS**



Thermo-Jack Freezer SlimLight Freezer IQF Line Freezer MultiLayered Freezer Thermo-Jack Rey



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Bangna-Trad Road, Bangkaew, Bangplee, Samutprakarn 10540
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NH₃/CO₂ cooling system

NH₃/CO₂

Forwarding to the future refrigeration systems

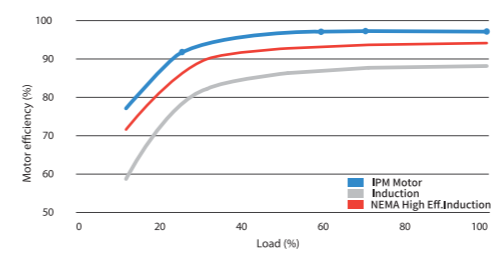


Realizing more advanced economics and energy-saving

The world's first introduction of semi-hermetic IPM motor to be mounted on ammonia screw compressor

Interior Permanent Magnet (IPM) motor

In order to improve the drive efficiency the system employs IPM motor, achieving higher efficiency by 5 to 10 % than conventional induction type.



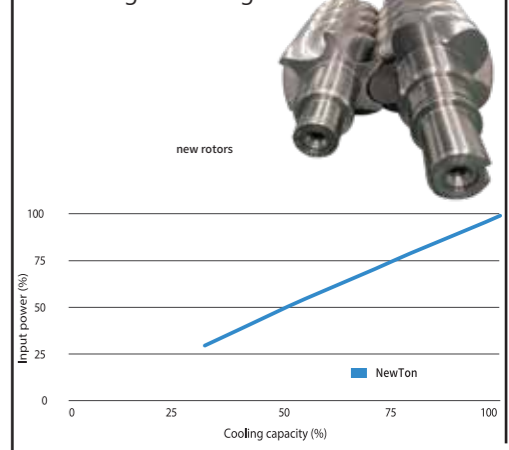
Compressor

The semi-hermetic compound screw compressor utilized in NewTon's low temperature packages, offers high performance in a compact size and comes with the world's first low-stage economizer port*. The compressor delivers a high refrigeration capacity with less electricity use.
*According to research by Mayekawa



Rotor

The RJ-profile rotor design has new low-power teeth shape which reduces internal leaks. The rotor achieves high COP through Mayekawa's original advanced machining technologies.

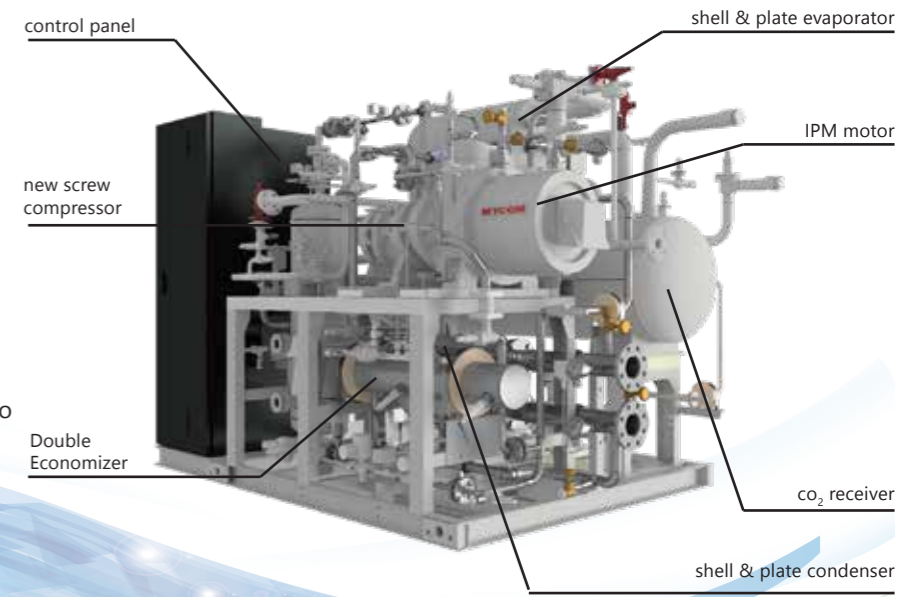


Adopted shell & plate type heat exchanger

We employed compact and high performance shell & plate heat exchangers on both condenser and evaporator to enable them to exchange heat even with a small differential temperature.

Minimizing ammonia charge

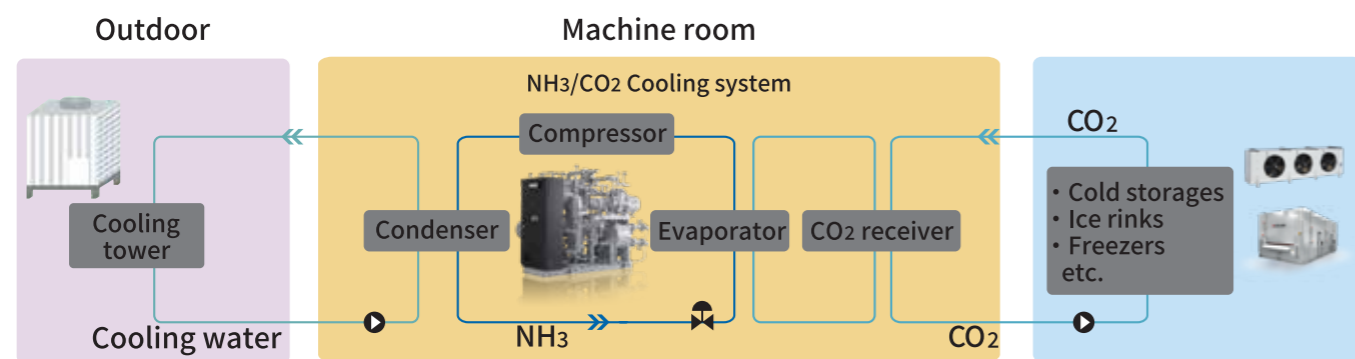
Employing indirect cooling method enables ammonia to be contained only in a machine room, plus ammonia charge volume in this product 19kg to max.



shell & plate condenser

Natural refrigerant cooling system

Ammonia / CO2 indirect cooling method

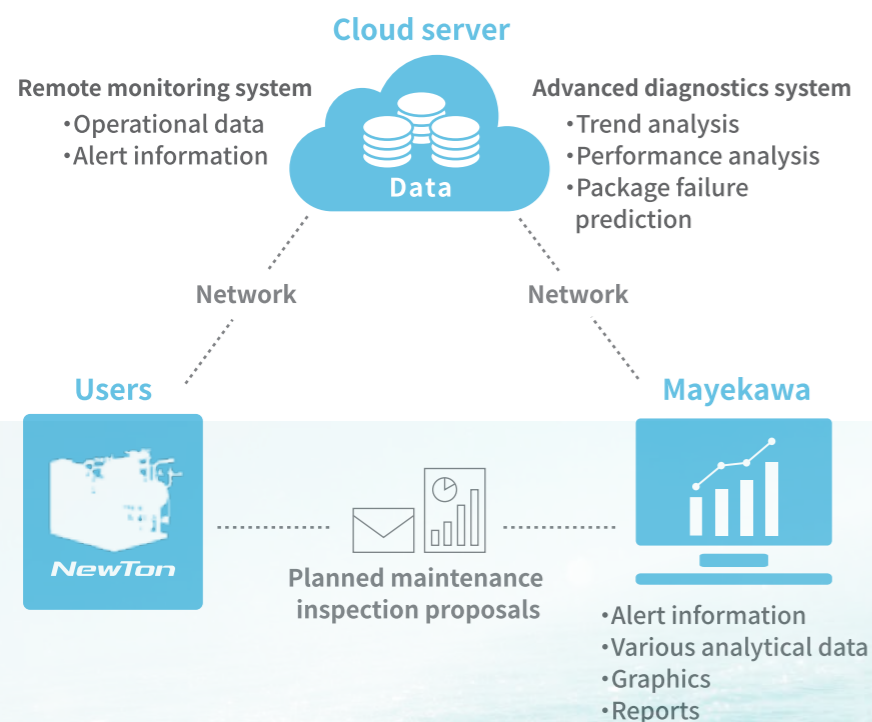


- Ammonia refrigerant stays within the machine package (machine room for indoor installations), and only CO2 refrigerant flows through cooling-side equipment.
- By design, the system promptly stops operation when severe vibration or a refrigerant gas leak is detected and can activate an ammonia scrubber device when necessary.

Next-generation support

Predictive maintenance through AI-driven diagnostics uses deep learning based on performance analysis informed by large amounts of data automatically collected through remote monitoring performed 24 hours a day, 365 days a year.

Remote monitoring system



Compressor diagnostics system (V-DOC2) using vibration sensors is standard equipment

NewTon comes equipped with Mayekawa's original vibration sensors and amplifiers for predicting bearing deterioration in the compressor as standard. Combined with the remote monitoring and advanced diagnostics systems, long-term deterioration trends are understood while planned equipment maintenance is performed. When connected to a computer, more detailed measurements and precision diagnostics can also be conducted on site.



For Cold storages and Ice plants

An optimal environment for each type of use and item stored. NewTon flexibly and efficiently creates the required temperature.

For F class cold storages

NH₃/CO₂R

For C class cold storages and ice plants

NH₃/CO₂C



Control technologies

All control elements are highly integrated. This delivers a stable operation as well as the optimized functionality and performance that customers require.

An overall reduction of around 50% in electricity consumed by the cooling equipment

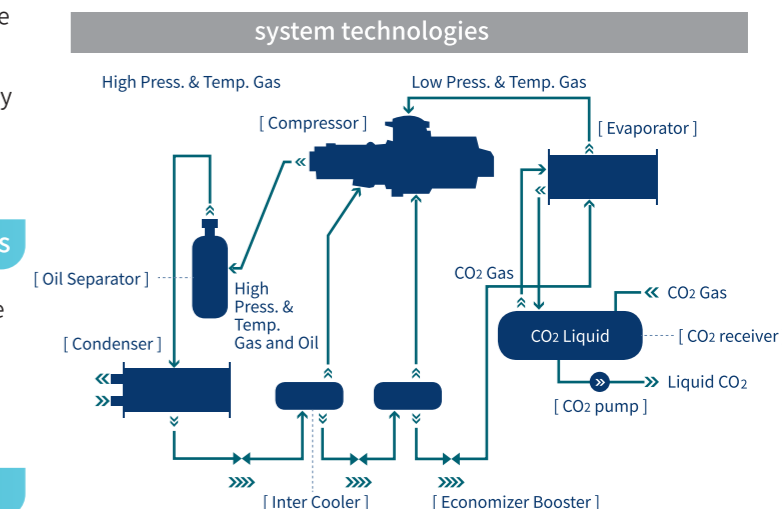
More than 70% of electricity used in cold storage is used by the cooling equipment. By replacing to NewTon, you can greatly reduce your electricity consumption.

Install new equipment without stopping operations

Because this cooling equipment is so compact, it can easily be transported in a cargo elevator, and you can switch it over without needing to shut down your cold storage.

Scheduled operations become possible

You can monitor operations remotely from an office or observation room, via a computer or touch panel. Centralized control and scheduled operations are also supported.



	NewTon R-3000	NewTon R-6000	NewTon R-8000	NewTon C	NewTon CH	NewTon CHM
CO ₂ supply temperature		-32°C		-5°C		-2°C
Cooling capacity*	99.0kW	198.0kW	270.0kW	237.0kW	123.6kW	247.2kW
Motor kW	45.0kW	90.0kW	120.0kW	70.4kW	32.5kW	65.0kW
C.O.P		2.20	2.25	3.37		3.80
Power source	AC380~480V 50/60Hz					
For motor	AC200~240V 50/60Hz					
For control	AC200~220V 50/60Hz					
Refrigerant	Primary: Ammonia (R717) Secondary: CO ₂ (R744)					
Type	Semi-hermetic compound screw			Semi-hermetic single stage screw		
Compressor	Matrix Converter					
Drive method	400V class			200V class		
Motor type	VFD					
Ammonia charge	IPM motor					
Outer dimensions (L x W x H mm)	19kg	38kg (19 x 2sets)	60kg	50kg	28kg	56kg (28 x 2sets)
Net weight	2,780 x 1,800 x 2,050	5,000 x 1,900 x 2,100	5,050 x 2,050 x 2,250	3,630 x 2,050 x 2,300	2,750 x 2,000 x 2,120	5,085 x 2,000 x 2,170
	2,630kg (type without receiver)	6,160kg (type without receiver)	6,900kg	4,450kg (type without receiver)	2,700kg (type without receiver)	5,650kg (type without receiver)

*in the case of cooling water at 32°C