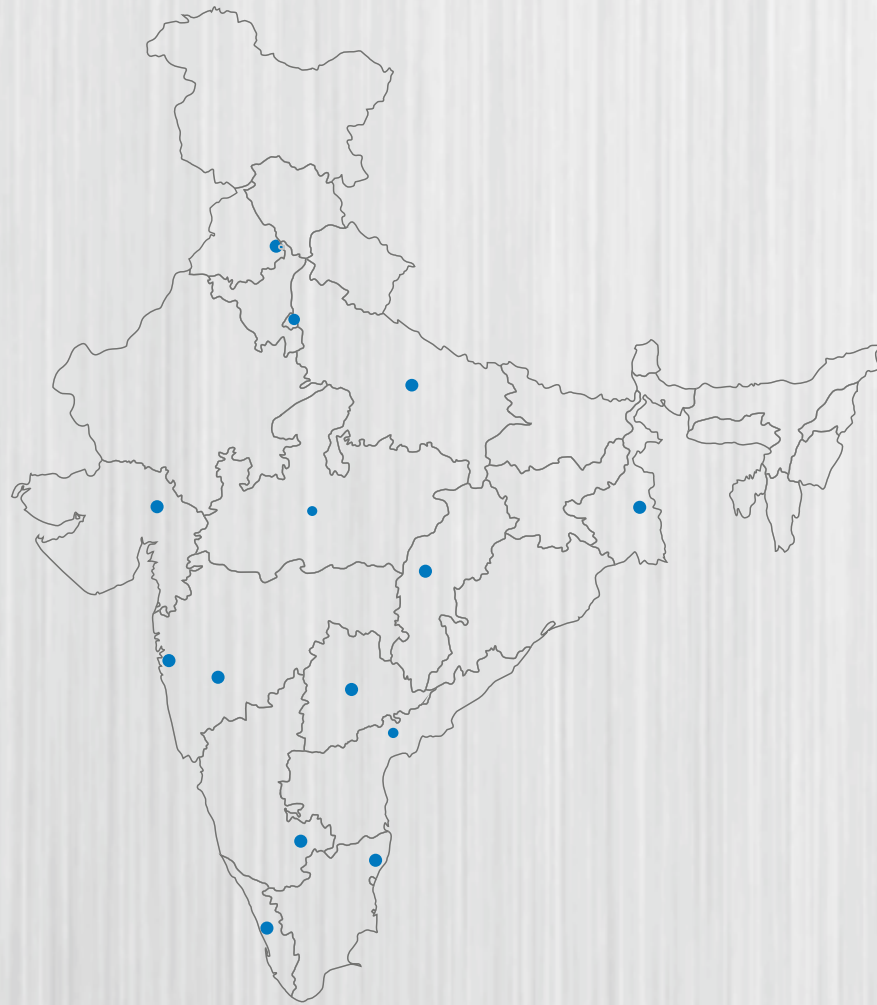


RINAC COLD CHAIN SOLUTIONS

Where freshness come to stay...



We, at Rinac, begin with seamless solutions for cold chain and modular construction. Soon, a relationship develops, empowered by our domain expertise, service excellence, and customising capabilities. As the bond deepens, you will discover that we invest in curiosity, innovation, and ingenuity. We constantly question perfection and leverage our resources to nurture each relationship into a win-win proposition. What's more - warm, pro-active support is always just a call away through RinaCare, our dedicated relationship service group.

For more than two and a half decades, Rinac has been the chosen partner for industry leaders, providing an unrivalled range of solutions and superior value. But that's just the tip of the iceberg.





THE CUTTING-EDGE OF INFINITE SOLUTIONS

Rinac India Limited is an integrated engineering solutions company. Nothing exhilarates us more than engineering end-to-end solutions for the cold chain and modular construction industries. We set no limits to curiosity, innovation and ingenuity. We constantly question perfection and ask ourselves 'What if?' and 'Why not?' every day.

As a result, frontrunners in several industries come up to us for total solutions in the cold chain and construction infrastructure. And they stay on for our domain expertise, technology leadership, service excellence and customising capabilities.

At Rinac, no requirement is too difficult, no challenge too complicated. We believe that each customer needs a solution, unique to his need, environment and aspirations. And we revel in creating new possibilities that address each requirement perfectly.

In these pages, you will discover world-class solutions for cold chain and modular construction. However, we are eager to break the mould and bring to you customised solutions too.

Combi Nest Combination of Chiller & Freezer



Combination of Chiller & Freezer

- Combination of chiller & freezer room
- Freezer chamber with thermal storage features, can hold room temperature [-23 Deg C] for 4 to 5 hours even when there is no power
- Fully equipped with storage racking system, adjustable shelving conforms to NSF or NF standards
- Refrigeration unit with electrical controller panel and microprocessor-based digital temperature controller
- Designed for use up to 42°C ambient

Suitable for:

- Hotels & Restaurants, Dairy & Dairy Products, Canteens, Food Courts, Bakeries, Pharma Products



SAPPHIRE SUITABLE FOR:
Our display-cum-storage cold rooms are the true masterpiece of food preservation. Good food deserves good care. Our refrigeration technology keeps vegetables & fruits fresh and frozen foods in its optimal preservation conditions. Our modular step-in cold rooms are suitable for

- Small restaurants • Food shops • Dairy, Milk shops
- Retail Shops • Supermarkets • Individuals • Hotels
- Micro Brewery • Wine Bar

Cabinet is made of Polyurethane insulated pre-moulded panels of suitable thickness with features for quick assembly at site. Display doors are with low emissivity glass, filled with inert gas and with anti-fog film. Display glass doors are fitted with self-closing hinges. All these doors are well-illuminated with LED lights. LED lights give full-length illumination in the whole display cabinet. There is one lockable panel door at the storage/ replenishing area. Sapphire units are provided with adjustable shelving made of anodized aluminium alloy frames & polyethylene shelf and conform to NSF or NF standards.

SAPPHIRE MODELS:
Rinac's Sapphire range of modular step-in cold rooms are available in the following models

Sapphire P 2D Cooler with 2 Doors	Sapphire N 2D Freezer with 2 Doors	Sapphire P 3D Cooler with 3 Doors
Sapphire N 3D Freezer with 3 Doors	Sapphire P 4D Cooler with 4 Doors	Sapphire N 4D Freezer with 4 Doors

WORLD'S FIRST ECO-FRIENDLY GREEN GOODS HOME DELIVERY SYSTEM Rinac CHILLKART ecoVAN

- Farm -fresh produce to consumers
- Extended shelf life
- Solar-powered
- Eco-friendly and cost effective
- Humidified chilled air circulation
- Ideal for Farm to Consumer, B2C start ups
- Generating employment opportunities
- Conceptualised and designed in support of Indian Government's vision of doubling farmer's income by 2022



A path-breaking innovative mobitruck Powered by a dedicated solar hybrid Refrigeration system maintaining The farm fresh produce.



Step-in Chiller



The performance advantages

- Suitable for high ambient conditions
- Designed for maximum safety and efficiency
- Universal 'Cam Lock Allan Key'
- Insulated cap for cam lock system
- Door handle with key security lock
- Man-trap internal safety release lock
- Internal lighting
- Four-tier adjustable shelving system for maximum utilisation of space
- Fully-functional electronic control
- Single phase power (230 V) – standard 16 A power point
- Energy-efficient equipment
- Best suited for
- Milk and dairy storage
- Fruit, vegetable, meat, and poultry storage
- Floriculture
- Food processing
- Pharmaceutical storage
- Hotels and restaurants
- Food and retail service
- Retail distribution (cold chain)



Unitary Refrigeration System



Step- In friendly



Microprocessor-based digital temp indicator (Programmable)



Latch With Lock and Lock Defeat Mechanism (Man-trap Release)

Clean and Conditioned Process Area Construted out of Sandwich Panels



Features

- Metal laminates: Pre-Painted Galvanised Steel
- Normal Panel width 1000 mm
- Special finishes: Aluminum/SS/ Plastisol/PVC
- Panel length: Transportable Length
- Insulation: Rigid Polyurethane Foam (RPUF)
- Panel Thickness (Wall): 60/ 80/ 1 00/ 1 25/ 1 50 mm
- Panel Thickness (Ceiling): 30/40/50/60/80/100/125/150 mm
- Nominal Density: 35 - 40kg m/m3
- Suspension System: Gripple System
- Panel Joinery: Continuous Slip Lock,
- Beltings: Pre-painted Galvanised Steel Tongue and Groove
- Covings: Food-grade PVC Coving with Accessories
- Dimensional Customisation: Possible as per Customer Specification
- Panel Joinery: Continuous Slip Lock, Tongue and Groove



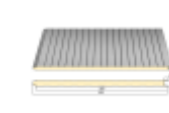
Double Glass View window



PVC Coving



Gripple suspension



Wall and Ceiling Panel

Pre-Cooler



Blast Freezer



Straight Belt IQF/Tunnel Freezer

- Handles your pull-down conditions with ease, completes the cycle quickly and efficiently
- Ideal for cut-vegetables, fruits and marine products
- Food-grade MOC gives high standard of hygiene
- Inbuilt VFD for variable belt speed which gives freedom in handling variety of products
- Fluidized bed to ensure uniform cooling
- Occupies less floor space
- Complete ease of defrost and high degree of sanitation
- Very quick freezing time ensures minimal water loss and high product quality
- Can operate as a complete stand-alone unit



Spiral Belt IQF

- Ideal for RTE food, poultry and meat
- Variable belting option depending on the application, with long belt life
- Very compact and occupies less floor space
- VFD for belt motor enables handling of variety of products
- High degree of sanitation



Technical Data

Cap Based on peas	500kg/hr	1000 kg/hr	2000kg/hr	2500kg/hr	3000kg/hr
Product in C	10 C	10 C	10 C	10 C	10 C
Product out C	-18 C	-18 C	-18 C	-18 C	-18 C
Model No	IQFN39 05	IQFN39 10	IQFN39 20	IQFN39 25	IQFN39 30
Appx.size(M)	4x3x4.5	6x6x4.5	7x6x4.5	8x6x4.5	9x6x4.5
Ref.loadTR	28	60	75	95	115
Insulation	150mm RPUF	150mm RPUF	150mm RPUF	150mm RPUF	150mmRPUF

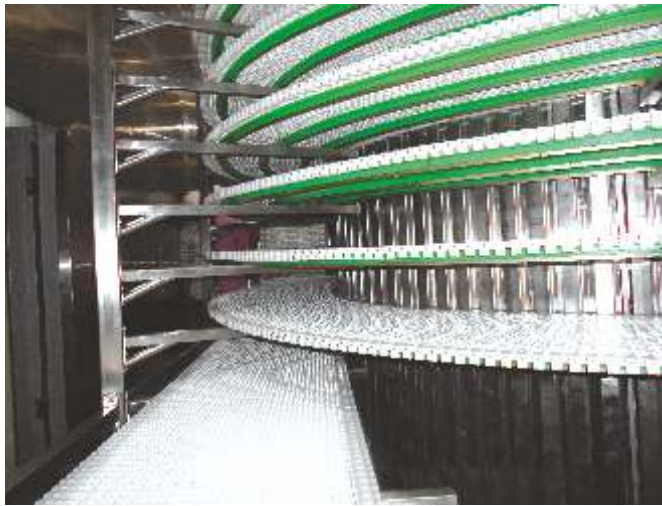
- Single or multiple belt units
- Module of capacity - 500,1000,2500&3000 kg/hr of peas
- Enclosure made of energy efficient 150mm thick sandwich panels with RPUF core and stainless steel, pre-painted GI metal lamination
- Access doors
- High static fans
- Freezer conveyor belts of SS/PE
- Cooling coil of SS tubes/Aluminium fins suitable for ammonia
- Automatic defrost arrangement

Equipment Description

The IQF package fluidized belt tunnel freezer comprising of motors. Coil section that includes the coils ,belt washerand enclosure includes walls, floor, doors, lightings, in-feed and discharge.

Conveyor System

The conveyor system consists of two conveyor sections: the pre-cool section and the freeze section. The conveyor frame is made of alumimium side panels consisting of UHMW roller belt and supports the pre-cool section and UHMW herring bone design on the freeze section. The product guards are made of stainless steel and UHMW wear strips against the belt.



Conveyor Drives

Each belt is electrically driven. The electric motors are directly coupled through heavy duty high ratio gear motors. The speed is controlled by remote speed dials at the control panel. The freezing time and temperature are monitored by electronic digital meters.



Refrigerated Trucks



Features

- No fuel or energy required for refrigeration during transport
- Eutectic plates provide necessary cooling, thereby nullifying use of fan-cooling type evaporator unit
- Temperature maintained for 10-12 hrs
- Use of roll container system and side service doors
- Rigid Polyurethane Foam used as insulation for body
- GRP Sheets bonded to insulation

Benefits

- Economical transport with savings on fuel, energy and labour
- No moving parts while refrigeration system is in operation
- Easy unloading of products from roll containers through side service doors
- RPUF ensures good thermal insulation properties with conductivity as low as 0.022 W/M-K
- GRP sheets ensure lowered weight hence higher payload capacity and effective area for merchandising



Standard Specifications

Body Length	:	2200 to 7100 mm
BodyWidth	:	Up to 2400 mm
Body Height	:	Up to 2400 mm
SideWalls	:	GRP sheet lamination with standard polyurethane foam thickness of 100mm Panel
Front-end Walls	:	GRP sheet lamination with standard polyurethane foam thickness of 100mm Panel
Floor	:	Slip-resistant GRP sheet lamination with standard polyurethane foam thickness of 100mm Panel with provision for water drainage
Roof	:	GRP sheet lamination with standard polyurethane foam thickness of 100mm Panel
Door	:	Two-panel full opening type
Sub-frame	:	Suitable beams with cross members are provided for direct fixing onto chassis
Lights	:	LED lights with fully-sealed, plugged-together wiring



Mobile Racking

- Products are completely selective
- Easy tracking
- Thin walled sections with heavy duty omega profile sections help in optimum steel contents required for heavy duty storage
- Suitable for multiple, wide range of temperature applications varying from -25 to +50 deg c
- Productivity and efficiency increases since retrieving goods is easy
- Order picking by means of FIFO/FEFO
- Suitable for Pharma, Food, 3PL, Dairy, Marine and general applications
- Designed as per EN 15512 standards

ASRS – Automated Storage and Retrieval System



Salient Features

- Products are completely selective
- Easy tracking by in-house WMS
- Increased storage capacity by increasing storage heights, saving overall footprint
- Suitable for multiple, wide range of temperature applications varying from -25 to +50 deg c
- Productivity and efficiency increases since retrieving goods is easy
- Order picking by means of FIFO/FEFO
- Suitable for Pharma, Food, 3PL, Dairy, Marine and general applications
- Designed as per EN 15512, FEM 9.831 standards.

Energy Savings

- Maximum use of floor space – only one operating aisle
- Save up to 60% of the space required by conventional pallet racking
- Alternatively increase your storage capacity by up to 80%
- Good occupancy rates helping to reduce energy bills in cold stores
- 100% individual pallet access
- No lights required while loading/working
- Reduction in power consumption by up to 50%
- While cooling saves up to 60% on electricity



Sales Efficiency:

- WMS can label high to low priority on goods
- Easy overview of stock
- No need to deal with charge-backs and penalties from customers
- Reduction in lost sales due to items returned
- Improved inventory control , thus reducing potential write-off of inventory
- Loss/theft of parts reduced as stacks are guarded with rails



Flake Ice Machine



- Directly formed at low temperature. Ice flakes are as cold as below -8°C.
- Once formed, ice flakes are dry, clean, sanitary convenient and not likely to lump
- Relatively big contact area and good mobility can ensure their full contact with refrigerated objects to realize good preservation effect
- Without any acute edges and corners, ice flakes cannot damage the surfaces of refrigerated objects and extremely benefit storage and delivery
- Small size, lightweight and convenient for use

Tube Ice Machine



- Special ice making method to remove water impurity. The ice is hard and powder-less
- The tube ice in hollow tube shape is transparent, sanitary and environment-friendly
- Several dimensions available. Outer diameter: 22, 29, 38 and 41 mm and can be customised to meet your requirement
- Compared with flake ice, tube ice has longer melting time.
- Suitable for storing and transport

Freezer and Chill Storage



Every component of Rinac's cold room is designed and strategically placed for reliability and robust operation throughout its life span. Refrigeration equipment, chosen from Rinac's own range, enables quick temperature pull down. Insulation panel systems are manufactured in Rinac's factories under stringent conditions and offer great power savings by ensuring of fewer 'ON' cycles.

Responding to the growing needs of the cold chain globally, Rinac has developed a comprehensive and new range of cold rooms, based on application and user-friendly operation. This enables proper monitoring of equipment, accurate temperature control, faster recovery, and more 'OFF' cycles to give quicker Return on Investment (ROI) and lesser Total Cost of Ownership (TCO). What's more, Rinac's team guides you through the selection process, enabling you to freeze on a cold room solution that suits your requirements optimally.

Cold Room Doors (Swing / Sliding / SOH)



Open-Type Single-Stage and Compound Two-Stage Refrigeration Screw Compressor Units



- Focus on screw technology for one hundred years
- More than 3 million screw compressors all over the world
- are technologically licensed by SRIVI

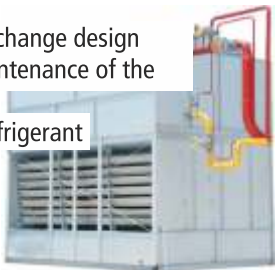
SRMTEC open-type single-stage screw compressor unit has 16 models in 5 series, which were developed based on good reliability & high COP. The speed ranges from 1000~6000 rpm with gas discharging from 215~6035 m³/h. Regular refrigerants like R717, R404 and R507A are all suitable for our compressor unit. Meanwhile, these compressor units are easy to operate with the computerized intelligent control and high automation. The standard scope of supply: Compressor, Open-type Motor, Controller, Oil separator, Oil cooler, Economizer, Filter, Prelube oil pump, Automatic components and other accessories.

Working Conditions	Single Stage	Two Stage
Item	Range	Range
Evaporating temperature (°C)	-45~20	-65~10
Displacement temperature (°C)	≤110	≤110
Oil supply temperature (°C)	40~65	40~60

Series SEC Evaporative Condenser

Advanced patented technology, classic heat exchange and mechanical performance

- Innovative combination of double heat-exchange design
- Has non-clog air inlet louvers for easy maintenance of the water splaying system in big diameters
- Fewer coil connections, less recharge of refrigerant
- Low-HP Axial Fans
- Corrosion-resistant construction
- HDGAF Condensing Coil



Ammonia and Freon Refrigeration Skids



Compak SC Compressor Package

- Single screw technology and balanced compression
- Built-in variable volume ratio
- Generously dimensioned bearings
- High quality shaft seals and metal bellows
- Efficient oil separation through coalescent filters
- All the precision valves, control and instruments are of Danfoss make
- Flexible operation parameters by variable frequency drive



Freezolor Liquid Over Feed System

- All the precision valves, control and instruments are of standard make
- Self-sufficient in every aspect
- Construction as per codes

COLD WAREHOUSING RACKING SOLUTIONS

- Selective Racking - Double Deep
- And Single Deep Racks
- Drive In Racks
- Multideep Shuttle Racking System
- ASRS
- Mobile Racking



- Less floor space utilisation
- Products are completely selective
- Easy tracking
- Thin sections with heavy duty profile which reduces civil works
- Easy and quick installation
- Suitable for multiple, wide range of temperature applications varying from minus 40 to plus 50 deg c
- Productivity and efficiency increases since retrieving goods are easy

Rack-assisted Warehouse



Mezzanine Assisted Storage (MAS)



- Modular and optimized construction, built on Mezzanine columns
- Eliminates the use of heavy duty structures
- Omega-profiled, roll-formed sections to achieve better load bearing capacities
- Easy and quick installation
- Suitable for multiple, wide range of temperature applications varying from -25 to +50 deg c
- Reduced civil footings and foundation requirements
- Uniformly-distributed loads
- Reduced erection time
- Suitable for Pharma, Food, 3PL, Dairy, Marine and general applications