



**Bana
BARN**
RIPENING CHAMBERS

Nature's
ripening
process,
gently supported by Rinac

Rinac's
**MULTI-COMPRESSOR
RACK REFRIGERATION**

Ensures
Energy efficiency in Ripening.

PRESSURIZED RIPENING CHAMBERS FROM RINAC

Bana BARN

RIPENING CHAMBERS

RINAC Pioneered the indigenous, pressurized type Ripening chambers of global standard which is running exceptionally well all over India. With expertise across the full spectrum of fruit ripening chambers, Pre-cooling chambers, cold storage construction & refrigeration system, RINAC India provides focused solutions namely conceptualizing, designing, manufacturing and implementation of cold infrastructure requirements to cater to needs of diverse industries. RINAC India offers Banana ripening chambers available with Pressurized/Reverse air flow evaporators and Humidity controlled rooms.



PRINCIPLE OF RIPENING AND WORKING CYCLE

The plant is generally operated on 4-6 days ripening cycle. This 4-6 days ripening cycle comprises of;

- Operation: 14 to 23 Deg C and >90 % RH . Pull down time (16 – 20 hrs) to 16-18 Deg. C
- Ethylene injection , after 24 hrs at constant room temperature of 18 or 19 Deg. C and >90% RH
- Holding period 16-12 hrs (total 24 hours from start of ethylene injection) temperature held at 18 or 19 Deg. C and >90% RH
- Ventilation after 24 hrs after ethylene injection. Ethylene and CO₂ is expelled out and fresh air is injected in cold room. CO₂ level not to exceed 5000 ppm during ripening process.
- Holding period for 3-4 days till coloration. Temperature can be reduced gradually to 14- 16 Deg. C for enhancing the shelf life of the Fruit.
- Air distribution system for uniform ripening of banana in palletized crates with Suitable air bypass sealing system for the crates

SALIENT FEATURES

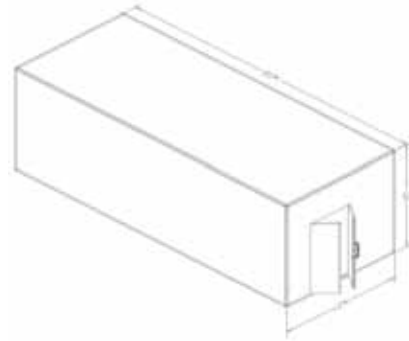
- Air tight chambers with specially designed doors.
- Extreme turbulent air waves across chamber for quick collection and dissipation of field heat.
- High humidity coil cooling unit for an excellent performance in humidification.
- Air path control mechanism for even distribution of chilled air across fruits.
- Power full refrigeration system for Quick pull down of field heat.
- Intelligent Temperature control for enhanced shelf life of fruits.
- Intelligent gas control system for high quality out put fruits.
- Centralized Refrigeration with multiple compressors for high level of flexibility in operation and energy saving with standby compressor.
- Less power, connected as well as consumption hence low operating cost.
- Reduction in weight loss of fruit [5%- 8%] by maintaining excellent humidity level across ripening process.
- Options for Web based monitoring and controlling of Temperature, Humidity, Ethylene and CO₂.
- Fully automatic ventilation and exhaust system & Automatic Ethylene Injection, control and CO₂ exhaust system.

BANANA RIPENING CYCLE



ROOM DIMENSION & REFRIGERATION CAPACITY

Sl. No.	Model	Capacity [MT]	Width [m]	Length [m]	Height [m]	Refrigeration Capacity [kW]	Remarks
1	RRC 5	5	3.8	5.0	3.3	7	
2	RRC10 ver a	10	3.8	9.0	3.3	10	
3	RRC 10 ver b	10	6.2	5.0	3.3	12	
4	RRC 15 ver a	15	6.2	7.0	3.3	16	
5	RRC 15 ver b	15	3.8	13.5	3.3	16	
6	RRC 15 ver c	15	4.5	7.0	6.5	18	2 Tier
7	RRC 20 ver a	20	6.2	9.0	3.3	22	
8	RRC 20 ver b	20	7.0	9.0	6.5	26	2 Tier
9	RRC 25 ver a	25	6.2	12.0	3.3	28	
10	RRC 25 ver b	25	4.5	12.0	6.5	32	
11	RRC 30 ver a	30	6.2	13.5	3.3	32	
12	RRC 30 ver b	30	7.0	7.0	6.5	36	2 Tier

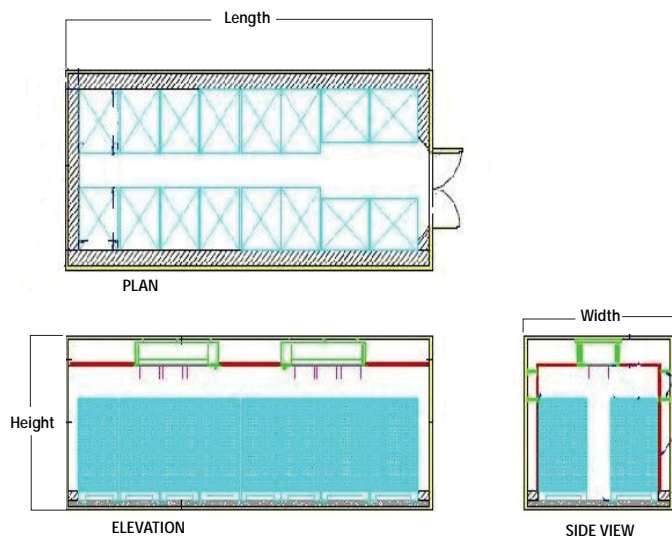


Banana Ripening Chamber – Standard 4 chamber format

Sl. No.	Model	Batch Capacity [MT]	Refrigeration Capacity [kW/Room]	Central Refrigeration unit Capacity [kW]	Connected Power [kW]	Required Power [kW]
1	RRC 5	5	7	20	15	8
2	RRC10 ver a	10	10	32	26	13
3	RRC 10 ver b	10	12	32	29	16
4	RRC 15 ver a	15	16	44	33	20
5	RRC 15 ver b	15	16	44	38	25
6	RRC 15 ver c	15	18	44	47	33
7	RRC 20 ver a	20	22	64	49	38
8	RRC 20 ver b	20	26	64	61	46
9	RRC 25 ver a	25	28	74	56	38
10	RRC 25 ver b	25	32	74	63	43
11	RRC 30 ver a	30	32	86	67	54
12	RRC 30 ver b	30	36	86	74	60

COMPONENTS OF RIPENING CHAMBER & TYPICAL PALLET ARRANGEMENTS

- The Major components of RINAC Ripening chambers are;
- RPUF Insulated Panels suitable for Ripening chambers.
- Insulated leak proof Doors designed for Ripening chambers.
- Refrigeration rack system with energy-efficient components.
- Specially Designed evaporators to ensure High humidity & Uniform airflow inside the ripening chamber.
- Humidifiers are provided to maintain high humidity throughout the ripening process.
- Electrical Control Panel for Refrigeration rack system.
- Ethylene generators & Ethylene Gas-discharge systems suitable for single & multiple rooms for ripening processes.
- CO₂ and Ethylene analyzers to monitor levels of gas in the room.
- Timer-based ventilation systems with dampers & exhaust fans for CO₂.





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; constantly questioning perfection, and leveraging 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.

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For about a decade and half, 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.

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