



An ISO 9001 : 2008 Certified Company

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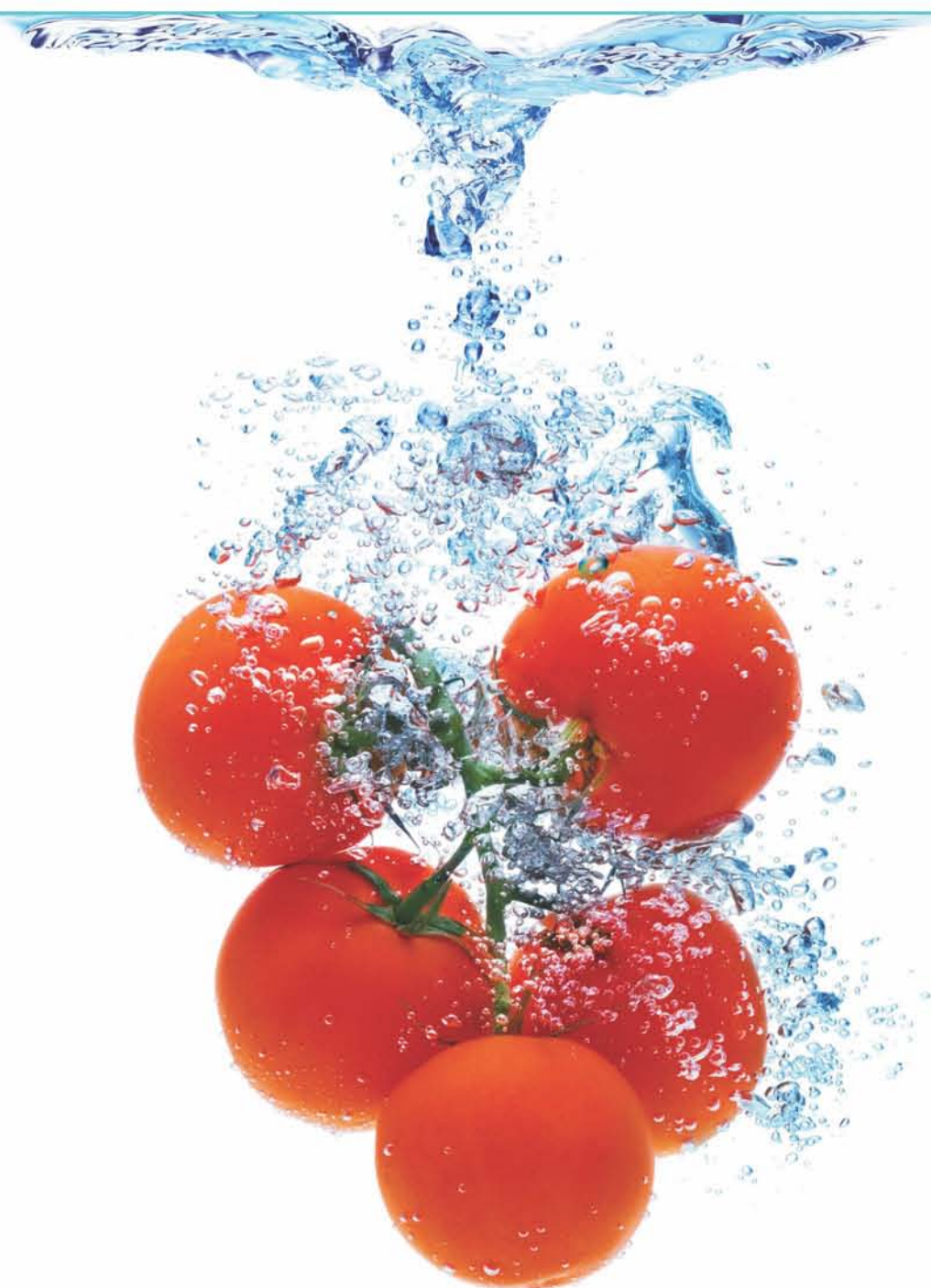
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# Farm to Fork

TURNKEY SOLUTIONS FOR  
FOOD PROCESSING • COLD CHAIN MANAGEMENT

## Same Freshness, Same Taste



## Turnkey Solutions

Our turnkey services are designed to cater to a wide span of industry segments right from small scale to large scale businesses, institutions and government agencies. Our team of industry professionals having over 50 years of collective experience in operational, project and technical management define the complete plan and execute the job efficiently in a timely manner. Our objective is to be an end to-end integrator of services right from inception, facilitation of resources and providing technical expertise to guidance and supervision.

### A Typical Turnkey Project Flow





## Perspective that considers all parts

### Cold Chain Solutions

An essential component of post harvest infrastructure, a cold chain provides uninterrupted series of storage and distribution facilities while maintaining a suitable environment through the control of temperature, humidity and other parameters. Some of our cold storage equipment are:

#### Control Atmosphere Storage

A process in which fresh perishable commodities such as certain fruits, vegetables, cut flowers, seeds, nuts and feedstock are stored under specifically defined environmental conditions to extend their useful marketing period after harvest.

#### Precooling Rooms

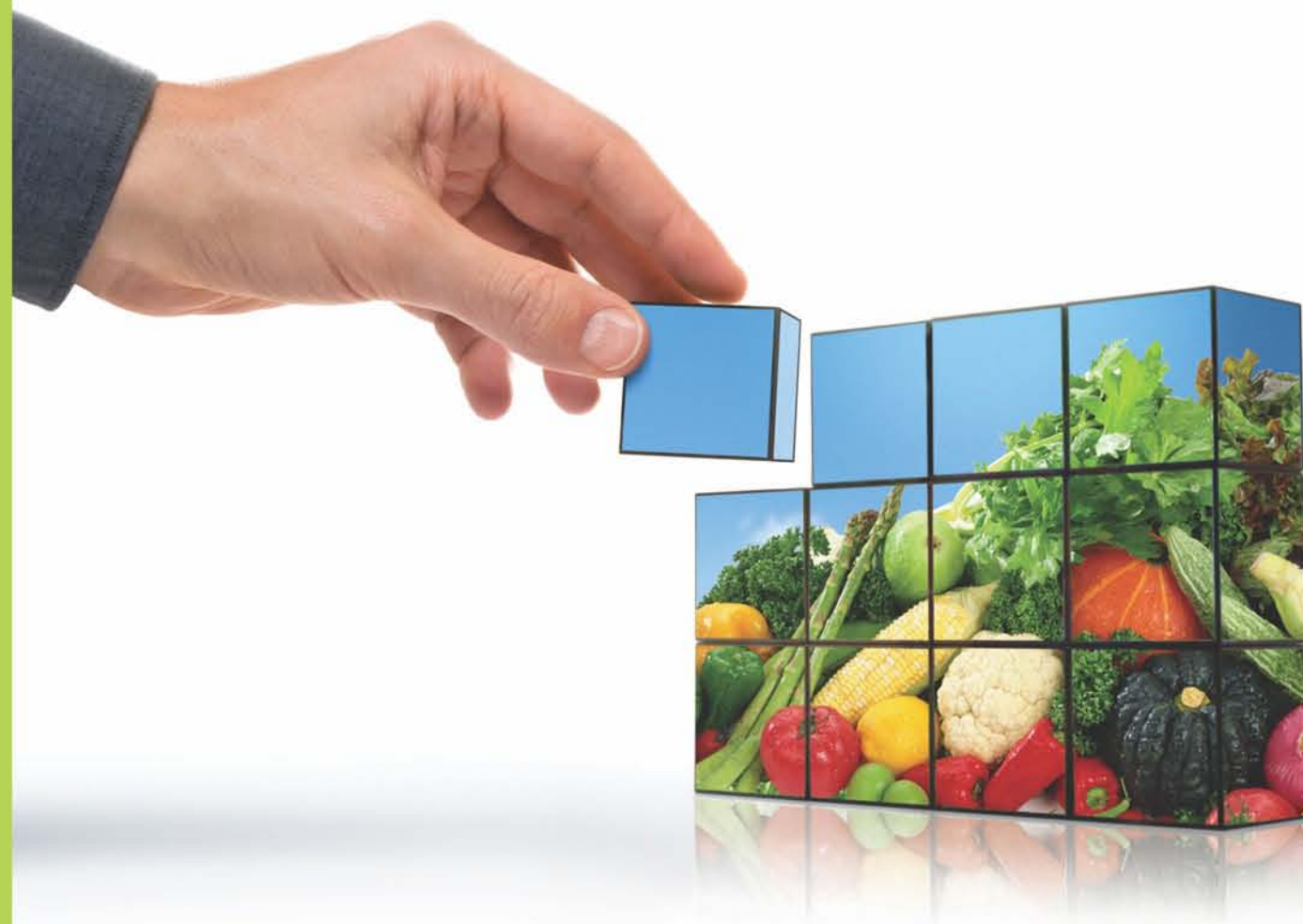
Specifically used for removing farm heat from crops after their harvest in order to increase the products' shelf life. It requires reduction in the product temperature from 30°C to -1°C, within a span of 4 hours.

#### Low Humidity Chambers

These chambers are useful for storing vegetables, dry fruits and vegetable seeds with room temperatures ranging from 8°C to 20°C and humidity from 30% - 50% R.H. Our fully automatic system carries out both high cooling & de-humidification with substantially low power consumption.

#### Modular Cold Rooms

Cold rooms are available in both pre-fabricated PUF panels and conventional panels. The cold chain logistics infrastructure consists of pre-cooling facilities, cold storage & refrigerated carriers.





# Customised Cold Chain Solutions



## Cold Chain Solutions

Continuous technology upgrades allow us to offer the most sophisticated and advanced solutions in cold chain systems. All aspects of design, engineering, manufacture, supply, erection, commissioning and training are carried out in-house, making the company a one-stop window for any cold storage system requirements.



## Cold Chain Products

Products		Applications
1	Precooling chambers	For fruits, vegetables, flowers, egg & mushroom products, fish & meat products
	a. Forced air precooling	Cap. 2 MT to 10 MT and more
	b. Mobile container type precooler	40 ft. & 20 ft. container, cap. 2 MT to 5 MT
	c. Hydrocooler	1. Continuous flow shower type : 200 kg/hr. to 5000 kg/hr. 2. Batch type with product in bins : 200 kg/hr. to 5000 kg/hr. 3. Continuous flow immersion type : 2000 kg/hr. to 5000 kg/hr.
2	Blast freezer chiller	For fruits & vegetables, marine products, dairy products, blood plasma and more
3	Walk-in cold room	1. Milk products 2. Ice-cream 3. Beef, pork & lamb 4. Flowers 5. Meat 6. Fruits & vegetables 7. Dry fruits 8. Frozen foods 9. Wine & beer 10. Marine products 11. Chemical & pharmaceutical products and many more
4	Ripening chamber	For banana, mango, guava, papaya, tomato, capsicum, citrus fruits, melons, plum, peach, green chillies, pharmaceutical industries
5	De-humidified storage	For vegetable seeds (Breeder, germ plasm, carry over, field crops) (Low humidity chambers), gelatine capsules, pharmaceutical industries
6	Speciality items	1. Onion storage 2. Vacuum freeze drier 3. Ethylene generator & centralized ripening system 4. Hot & cold room for curd / yogurt storage.



Diverse solutions that are more than charts and numbers.  
We call them relationships.

## Turnkey Solutions

Our expertise and acumen are at their strongest with respect to the management of turnkey food projects right from planning and commissioning to full operations. We have successfully planned and executed over 300 projects on a turnkey basis for multiple industries including food industry consultations.



Successfully planned and executed  
**over 300 projects**  
on a turnkey basis

## Turnkey Projects

- Design, engineering, construction & commissioning of post harvest cold storage facility
- Cold chain management from farm to fork
- Spice processing plants
- Food processing plants
- Fruit & vegetable packing and pack house design
- Fruit grading & packaging
- Project management, factory design & commissioning
- Product development and process development
- Food parks & distribution centres
- Industrial refrigeration
- IQF for fruits & vegetables
- Cardamom processing plants
- Sesame seeds, turmeric, ginger, coriander, ajwain & jeera processing plants
- Food freeze dryers
- Black pepper processing plants
- Garlic & onion dehydration plants
- Mango & banana processing plants
- Custard apple, peas & amla processing plants
- Multi-commodity & multi-temperature storages
- Forced air precoolers
- Hydro precoolers
- Mobile precoolers
- Fruit ripening chambers
- Dehumidified storages & onion storages
- Fruit & vegetable washing, waxing, grading & packing
- Fruit & vegetable dehydration plants
- Seed germination & growth chambers

## Applications of Modular Cold Rooms

### Horticulture

Flowers require specific temperature ranges, humidity levels, correct airflow speed & direction, and appropriate handling methods for preservation. We design storage rooms keeping these parameters in mind and ensure an increase in their vase life.

### Pharma

The critical nature of these products requires minute evaluation & analysis. Our processes and techniques ensure that heat-sensitive biological products such as vaccines, sera and antibiotics do not deteriorate in transit.

### Hotels

The hospitality sector needs preservation rooms with different dynamics and practicalities in handling foods of different aromas and flavours. We also provide guidance on details like how to manage and check walk-in coolers regularly.

### Seafood

Separate temperature levels are required for fresh catch and processed seafood and the retaining of innate qualities of seafood from the time of catch is of prime importance. Mech-Air provides modern-day solutions in environment control for the transportation of fresh, perishable and heat sensitive products.

## Specifications

### TECHNICAL DETAILS FOR REFRIGERATION UNITS

Description/Model	MEC-120	MEC-220	MEC-400	MLH-250
Condensing units	MEC-120 C	MEC-220 C	MEC-400 C	MLH-250 C
Compressor H.P.	1.5	3.2	6.5	3
Compressor	Emersons	Emersons	Emersons	Emersons
Refrigerant	R-22	R-22	R-22	R-22
Power Supply	415V/50Hz/3Ph	415V/50Hz/3Ph	415V/50Hz/3Ph	415V/50Hz/3Ph
Dimensions WxDxH (mm)	710x425x575	1570x425x575	1660x505x780	1020x450x525
Weight in Kgs.	63	120	130	80
Evaporators	MEC - 120 E	MEC - 220 E	MEC-400E	MLH -250E
No. of evaporators	1	1	1	1
Air flow (CFM)	1600	3200	9324	1600
Power supply	415V/50Hz/3Ph	415V/50Hz/3Ph	415V/50Hz/3Ph	415V/50Hz/3Ph
Dimensions WxDxH	1245x380x380	2210x380x380-01 No. or 1245x380x380-02 No.	1965x515x715	930x430x480
Cooling cap. 4 °C	10,000 Btu/hr	20,000 Btu/hr	62,100 Btu/hr	16,000 Btu/hr
Cooling cap. 12 °C	15,000 Btu/hr	28,000 Btu/hr	75,100 Btu/hr	24,300 Btu/hr

All technical details given are approximate • Subject to technical alterations and improvements



## Fruit Ripening

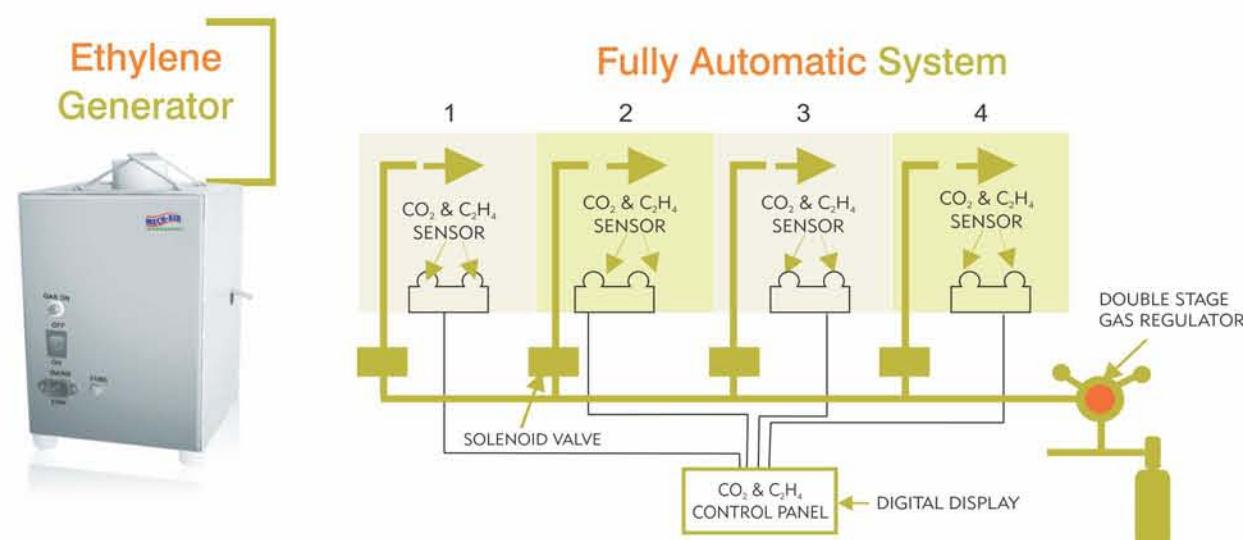
Our fruit ripening solutions follow the best practices in the world and drastically save time for you. Our extensive knowledge and expertise in the field of fruit ripening ensure that you get high-quality and tasty ripe fruits. This in turn helps you get these fruits to the market before others.

Fruit ripening is possible through two methods, first by Ethylene Generator and second by a fully automatic centralized ripening system with Ethylene Gas Cylinder.



## Integrated Solutions Personalised Approach

For over two decades, we have been a trusted name in delivering turnkey solutions for both, food processing & cold chain industries. Value and innovation are the parameters which keep us, a step ahead of others. Our strength lies in a proficient team of engineers and technicians who make solutions easily available to clients from these industries. A pro-active management ensures timely delivery of optimal solutions keeping in sync with the client's core team.



## The Fruit Ripening process



## Ideal for ripening

- Banana • Mango • Papaya • Apple
- Tomato • Lemon • Orange • Pear
- Melon - A) Water melon B) Honey Dew (Sweet) Melon
- Pepper – A) Bell Pepper b) Chilli Pepper
- Stone Fruits – A) Plum B) Peach C) Nectarine
- Yellowing of Cucumber



## The Company

We are an ISO 9001-2008 certified company and specialize in food processing, refrigeration equipment and turnkey solutions. We at Mech-Air understand the client's requirements, analyse the nature of their business in depth and identify customised solutions that meet their specifications. Our team of skilled

professionals, industry experts and in-house manufacturing unit, enable us to execute any and every job efficiently and on time. A rigorous testing and quality control procedure ensures that highest quality of standards is maintained. And our strong after-sales service helps us further in building long-term relationships with clients.





## The Clientele



### Fruits & Vegetables

- APMC (Nandurbar)
- Anand Agricultural University (Vadodara, Gujarat)
- Ashapura Nursery (Bhuj, Gujarat)
- Navsari Agricultural University (Navsari, Gujarat)
- Sanchi Exports (Dharampur, Gujarat)
- Jabalpur Agricultural University (Jabalpur, M.P.)
- Junagadh Agricultural University (Junagadh, Gujarat)
- Udaipur University (Udaipur, Rajasthan)

### Cold Room / Ripening Room

- Vimal Agro (Bardoli, Gujarat)
- Navsari Mandli (Navsari, Gujarat)
- Poonam Agritech (Hubli, Karnataka)
- Navsari Agricultural University (Navsari, Gujarat)
- Sanchi Exports (Dharampur, Gujarat)
- Baroda Dairy (Vadodara, Gujarat)
- Sunripe Agro (Vishakhapatnam, Andhra Pradesh)
- Kailash Cancer Hospital (Vadodara, Gujarat)
- Sugam Dairy (Vadodara, Gujarat)
- Jabalpur Agricultural University (Jabalpur, M.P.)
- Ajarai Mandali (Ajarai, Gujarat)
- BAIF (Lachakadi, Gujarat), and
- Udaipur Agricultural University (Udaipur, Rajasthan) and many more in cities like Amreli, Rajkot, Jalgaon, Surat, Bhavnagar, etc.

### Floriculture

- Sheetal Floritech, Tundi (Surat, Gujarat)
- JNKVV (Jabalpur, Mandasaur, Indore & many more)

### Vegetable Seed Industries

- Krishidhan Seeds (Jalna, Maharashtra)
- Nirmal Seeds (Pachora, Maharashtra)
- Navbharat Seeds (Nadiad, Gujarat)
- NSRTC (Varanasi, Uttar Pradesh)
- Unicorn Seeds (Secunderabad, Andhra Pradesh)
- Director of Seed Certification (Coimbatore, Tamil Nadu)
- Bejo Sheetal Seeds Pvt. Ltd. (Jalna, Maharashtra)
- Western Agri Seeds (Gandhinagar, Gujarat)
- MSSCL, 'Mahabeej' (Akola, Maharashtra)
- Golden Seeds Pvt. Ltd. (Bangalore, Karnataka)

### Hospitals & Pharma

- Siemens Solutions (Vadodara, Gujarat)
- Kailash Cancer Hospital (Vadodara, Gujarat)
- Astral Pharma (Vadodara, Gujarat)

### Dairy Products

- Mahanand Dairy (Mumbai & Nagpur, Maharashtra)
- Haldiram Foods (Nagpur, Maharashtra)
- Kolhapur Dairy (Kolhapur, Maharashtra)
- Rajhans Doodh (Sangamner, Maharashtra)

### Specialty Projects

- Kailash Cancer Hospital (Vadodara, Gujarat)
- 10,000 MT Onion storage facility, Jain Irrigation System Limited (Jalgaon, Maharashtra)
- CA (Controlled Atmosphere) storage, Navsari Agricultural University (Navsari, Gujarat)
- Onion Dehydration Plant of 2000Kg/day cap. for Navsari Agricultural University (Navsari, Gujarat)
- Seed germination chamber (NSRTC, Varanasi)

### Turnkey Projects

- Cardamom processing plants
- Black pepper processing plants
- Garlic & onion dehydration plants
- Mango & banana processing plants
- Multi-commodity multi-temp storages



## Ideation to Execution



## Industry Segments Served

Our mission is to improve productivity and increase profitability for our clients. We partner our clients right from the design and implementation to the improvement of established setup. Our strong principals of cost reduction, ergonomic factory design and constant yield improvement programmes help us achieve this. We have a vast span of experience in the food and cold chain management industry which has earned us the respect of many industry stalwarts. We consult for major industry segments like:

- Milk & dairy
- Fruit & vegetable storage
- Floriculture
- Seafood
- Meat & poultry
- Spice processing
- Food processing
- Pharmaceutical storage
- Hotels & hospitality

