



Empowering CO₂ Recovery Plants With Greater Energy Efficiency!

Hypro is a privately owned company in India serving industries related to Breweries & CO₂ Recovery. Hypro is a lead supplier of CO₂ recovery plants in India with a market share over 85 % in CO₂ recovery from Breweries.

High quality equipment, reliable plant, consistent high quality output CO₂ are prime features of Hypro CO₂ plants.

We just don't sell a CO₂ plant but we evaluate feasibility and we provide top notch after sale service backup.

Hypro CO₂ plants come with a indigenously developed technology and constant upgradation of features plant after plant. Special focus on energy saving has already lead to innovative solutions by Hypro. Constant improvisation and technology enhancement is the Key to success and Hypro just holds on to it.

Apart from technology, we engineer the plant very well for ease of operation and minimum maintenance to our customers.

Hypro Offers

CO₂ Recovery Plants (Breweries & Distilleries)

CO₂ Recovery from Bio-Gas

CO₂ Revert Recovery System

Lean CO₂ Gas Recovery System (95% CO₂)

**Liquid CO₂ Evaporation Systems
(Energy Recovery & Energy Saving Type)**



CO₂ Recovery In Breweries

Carbon di-oxide gas is generated in a brewery during fermentation of wort. The CO₂ so generated is adequate to cater for requirements of CO₂ in a brewery. In order to be self sufficient on CO₂ supply a brewery shall have a high efficiency and a reliable CO₂ recovery plant. Hypro's reliable and proven technology for CO₂ recovery and purification results in a reliable **MEE CO₂ Recovery** plant with guaranteed output quality of CO₂ 99.998 % v/v, where the MEE stands for **Most Energy Efficient CO₂ Recovery** plant.



CO₂ Plant

All equipments are necessarily produced with St Steel as material of construction. The exception being liquid CO₂ storage tank which is made in low temperature carbon steel. The piping for CO₂ is necessarily in stainless steel. This provides to the plant a long life and often eliminates rust and impurities from corrosion of carbon steel piping. The absorbers, scrubbers, strippers, distillation columns are provided with high efficiency structured packings as a standard.

The layout is made compact BUT enough space is planned for maintenance. Based on the capacity the plant is configured in such a way that expansion is possible by additional equipment. For bigger plants CO₂ gas compressors are configured in such a way that during lean season load is catered by completely shutting down one of the CO₂ compressors thereby providing flexibility of operation and also saving energy.



The challenges put forth to the recovery plant are fine particles of extract getting entrained into the gas especially with high gravity brewing systems. These fine particles pose greater problems of maintenance to the CO₂ compressor. Similarly the by-products of fermentation get carried over as impurities in the CO₂ gas. These impurities necessitates various treatment methods to remove alcohols, moisture, odour compounds and non condensables. Once these impurities are removed the gas needs to be stored. To reduce on the storage volume and to also get rid of non condensables the gas is liquefied. During liquefaction the ratio of volume reduction is @ 530 w.r.t NTP conditions and @ 300 times w.r.t A.T.P conditions. The liquefied CO₂ is then evaporated and fed back to the brewery for consumption to various sections.

Every unit saved on power not only is cost effective BUT also a tribute to a greener and cleaner earth. In an attempt to make systems more and more energy efficient Hypro has focused on energy requirements in a CO₂ Plant and has solutions successfully implemented. Every kilogram of CO₂ vented to the atmosphere is added burden on the earth and we try to minimise this with well designed collection systems. The collection systems are sized for ultra low pressure drops thereby reducing energy requirements.

Hypro has applied for a patent to condense CO₂ using minimum possible energy .



CO₂ recovery In Distilleries

Carbon di-oxide gas is generated in a distillery during fermentation of molasses OR food grains. Hypro's reliable and proven technology for CO₂ recovery in breweries is now extended to distilleries. Hypro offers a reliable CO₂ plant with guaranteed output quality based on the customer needs and @ CO₂ 99.998 % v/v for food grade CO₂ requirements.

For a distillery based CO₂ special odour treatment is essential to produce food grade CO₂ which is essential requirement for carbonation of beverages. The odour treatment system is two stage depending upon the level of impurities at source and is equipped with oxidation unit for nearly complete removal of sulphur compounds.

The liquefied CO₂ is then either bottled in CO₂ cylinders OR is fed to a dry ice production plant. Hypro's rich experience in the field results in a reliable and efficient CO₂ plant.



Lean CO₂ Gas Recovery System (95% CO₂)

Normally brewery CO₂ recovery systems are designed based on a Rich inlet raw CO₂ purity from 99% v/v & above. This means that CO₂ collection for recovery starts may be @ 24 to 36 hours after start of wort fermentation cycle. Indirectly this results in lower CO₂ collection and venting of CO₂ to atmosphere during this initial period. Nevertheless the brewery still remains self dependant on its CO₂ requirement even with normal CO₂ plants. In case the brewery is targeting to sell excess CO₂ which can be collected, Hypro provides a Lean CO₂ Gas Recovery system which can process raw CO₂ with @ 95 % v/v purity. With this system the CO₂ collection can start early and the CO₂ need not be vented to the atmosphere for longer period of time initially.



CO₂ Recovery from BIOGAS

Carbon di-oxide gas is generated alongwith Methane in a Biogas plant, The CO₂ content ranges from 30 to 45 % in Bio gas. The challenge is to separate CO₂ from Biogas and removal of sulphur compounds. Hypro provides a solution to separate CO₂ from Biogas, odour removal and thereby produces pure methane gas for further utilisation. The CO₂ separated is then fed to the Hypro – CO₂ recovery plant. CO₂ is further purified and freed from moisture and odour. Liquefaction of CO₂ is then the next step which completes CO₂ recovery. The product is stored in liquid CO₂ tanks and is ready for sale by conversion of dry ice or filling cylinders or in a bulk tanker.

Expertise of "Hypro" over a decade in CO₂ Recovery assures customers of reliable and efficient system producing high quality CO₂.



CO₂ Revert Recovery System

When dry ice is produced from liquid CO₂, huge amount of revert CO₂ gas is produced, typically @ 55 to 60 % based on the equipment and operation. This gas can be collected, reprocessed and reused back for dry ice production. This plant will pay back very shortly and shall be a essential part of main dry ice production system.



Concise Reference List of Hypro's CO₂ Recovery Plants

- **Sab Miller India - Mysore**
Hypro MEE CO₂ Recovery Plant 800 kg/h
- **Carlsberg India - Kolkata**
Hypro MEE CO₂ Recovery Plant 500 kg/h
- **Molson Coors - India- Bihar**
Hypro MEE CO₂ Recovery Plant 550 kg/h
- **UB Group India- Bihar**
Hypro MEE CO₂ recovery plant 600 kg/h.
- **Carlsberg Group- Myanmar**
Hypro MEE CO₂ recovery plant 370 kg/h.
- **Carlsberg India-Bihar**
Hypro MEE CO₂ recovery plant 600 kg/h.
- **United Breweries - Kalyani**
Hypro MEE CO₂ Recovery Plant 550 kg/h
- **Carlsberg India- Dharuhera**
Hypro MEE CO₂ Recovery Plant 300 kg/h
- **United Breweries - Aurangabad**
CO₂ recovery plant 600 kg/h with energy recovery
- **United Breweries- Golconda**
CO₂ recovery plant 600 kg/h with energy recovery
- **United Breweries - Chennai**
CO₂ recovery plant 600 kg/h with energy recovery
- **United Breweries - Mysore**
CO₂ recovery plant 600 kg/h with energy recovery
- **Adie Broswon-Gurudaspur**
CO₂ recovery plant 300 - 600 kg/h with energy recovery
- **Carlsberg India- Kolkata**
CO₂ recovery plant 200 kg/h. With Energy Recovery
- **United Breweries -Mumbai**
CO₂ recovery plant 600 kg/h. With Energy Recovery
- **United Breweries -Orissa**
CO₂ recovery plant 500 kg/h. With Energy Recovery
- **Lion Breweries -Sri Lanka**
CO₂ recovery plant 300 kg/h. With Energy Recovery
- **Carlsberg India - Hyderabad**
CO₂ recovery plant 600 kg/h. With Energy Recovery
- **Carlsberg India- Aurangabad**
CO₂ recovery plant 300 kg/h. With Energy Recovery
- **Carlsberg India- Alwar**
CO₂ recovery plant 300 kg/h. With Energy Recovery
- **United Breweries- Ludhiana**
CO₂ recovery plant 400 kg/h. With Energy Recovery
- **United Breweries -Goa**
CO₂ recovery plant 300 kg/h. With Energy Recovery
- **Blossom Indutries Ltd- Daman**
CO₂ recovery plant 600 kg/h. With Energy Recovery
- **Millenium Beer Ind Ltd- Aurangabad**
CO₂ recovery plant 150 kg/h. With Energy Recovery
- **AB InBev- Crown Hyderabad**
CO₂ recovery plant 150 kg/h. With Energy Recovery
- **Dewans Rajasthan**
CO₂ recovery plant 150 kg/h. With Energy Recovery
- **Universal Breweries Ltd- Mauritius**
CO₂ recovery plant 100 kg/h. With Energy Recovery
- **Balaji Distilleries Ltd - Chennai**
CO₂ recovery plant 200 kg/h. With Energy Recovery
- **Manav Breweries Ltd- Ghaziabad**
CO₂ recovery plant 100 kg/h. With Energy Recovery
- **Sica Breweries Ltd- Pondicherry**
CO₂ recovery plant 100 kg/h. With Energy Recovery

- **Carlsberg India**
8 x Hypro CO₂ Recovery Plants
- **Carlsberg International**
2 x Hypro CO₂ Recovery Plants
- **UB Group India**
12 x Hypro CO₂ Recovery Plants
- **Molson Coors India**
1 x Hypro CO₂ Recovery Plant
- **SAB Miller India**
1 x Hypro CO₂ Recovery Plant



Our Customers

We will welcome your inquiry for CO₂ plant. Hypro high quality plants, after sale service and backup makes Hypro a preferred supplier and a reliable partner for our customers.

Our Clientele :



Blossom Industries | Adie Broswon | Devans Modern Breweries | Manav Brewries
Universal Breweries | Crown Beers International



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GROUP

An ISO 9001-2008 Company

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Liquid Processing Beverages & Pharma Division | Manufacturing Business Division
Trading Division Keofitt Sampling Systems**