

# Dry Ice Machines

Blocks | Pellets | Nuggets | Blasting

**Freeztech Innovations**

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# About Us

We Freeztech Innovations, are global manufacturers of Dry Ice related machineries operating Since 2010. We have wide range of products related to Dry Ice and Liquid CO2 which is later elaborated in our Products section.

With a team of qualified persons we at Freeztech are dedicated to deliver quality products supported with 24/7 service support to our valuable customers worldwide.

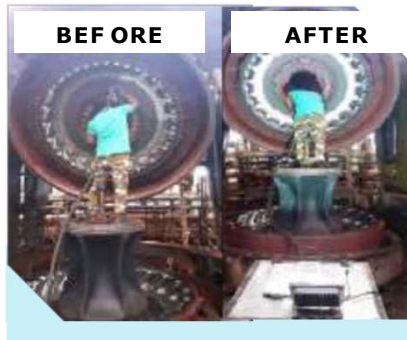
We assure that our products are designed in such a way that it fulfils the need of any type of customers, with our innovative designs and wide range of models.

Each machine has its own advantages and is used in specific industries for different purposes.

## Freeztech Innovations Involved With



**Aerospace**



**Automotive**



**Hydro-Power Project**



**Generator Cleaning**



**Food and Beverage**



**Rubber Mould**

**FreezTech Innovation: Pioneering Solutions with Dry Ice Machines.**

# Dry Ice Production Requirements

## To set-up a new dry ice production factory or dry ice production machine, following items are required:

- To produce dry ice, you need a storage tank with liquid CO<sub>2</sub> that is connected to the dry ice production machine. You can find more detailed information about the dry ice production process on our website.
- Optional Revert Gas Liquification system, where the revert gas can again be liquefied and sent to storage tank with the help of Gas Holder, Compressor, refrigeration and condensing system to minimize discharge to the lowest extent possible.
- And finally, to keep the dry ice pellets of quality, we offer our customers the possibility to purchase insulated containers.

## Dry ice is produced for diverse applications.

- Dry Ice Blasting
- Food/Catering Industry
- Medical/Labs
- Transportation
- Show Effects (DJ Performance)
- Process Cooling
- Wine Production
- Pest Control
- Airline Catering
- Cold Grinding
- Freeze Blending
- Freeze Drying



## Our Product Range

- Dry ice block or slice machine mini- 100 kg/hr (Air catering size)
- Dry ice block machine - 450 kg/hr
- Dry ice block machine double chamber - 1000 kg/hr
- Dry ice pelletizer - liquid to pellets
- Dry ice pelletizer - block to pellets
- Dry ice blasting machine (pellets to blasting)

**MODEL NO:  
FTDIB 100**



## Dry Ice Slice Machine Mini 100kg/Hr

### SPECIFICATIONS From Liquid to Block

**System control:**  
All function PLC control

**Quick start-up:**  
Instant push start button

**Conversion Ratio:** (LCO<sub>2</sub> to DryIce)  
With Revert: 1.5 kg to 1kg  
Without Revert: 2.5 kg to 1kg

**Production Capacity:**  
80 - 100Kg/hr

**Chamber:**  
Complete SS 304  
10mm teflon sheet insulated  
side wall

**Block Size:**  
210 mm x 140 mm  
(Block Height Adjustable 20-80mm  
Approx.. 0.8 to 2.4 kg)

**I/O Controls:**  
PLC HMI Based Inbuilt Manual  
Telemetry in HMI SCREEN

**Power Pack:**  
Inbuilt 3.5kW with  
24 LPM gear pump

**Production:**  
Fully Automatic - Built in sensor with  
screen protection guard for hand  
safe

**Hydraulic oil:**  
200 ltr tank capacity

**Dry Ice Density:**  
1.4 To 1.5 kg/ltr

**MODEL NO:**  
**FTDIB 450 | 1000**



## Dry Ice Block Machine

**450kg/Hr** (Single Chamber) | **1000kg/Hr** (Double Chamber)

### SPECIFICATIONS From Liquid to Block

**System control:**  
All function PLC control

**Quick start-up:**  
Instant push start button

**Conversion Ratio:** (LCO<sub>2</sub> to DryIce)  
With Revert: 1.5 kg to 1kg  
Without Revert: 2.5 kg to 1kg

**Production Capacity:**  
400-450 Kg/hr  
900-1000Kg/hr

**Chamber:**  
Complete SS 304  
10mm teflon sheet insulated  
side wall

**Block Size:**  
250 mm x 200 mm  
(Block Height Adjustable Max  
200mm- Approx. 11to 14kg)

**I/OControls:**  
PLC HMI Based Inbuilt Manual  
Telemetry in HMI SCREEN

**Power Pack:**  
Inbuilt 5.5/11 kW with  
40/11 Lpm Dual Pumps

**Production:**  
Fully Automatic - Built in sensor with  
screen protection guard for hand  
safe

**Hydraulic oil:**  
200/400 ltr tank capacity

**Dry Ice Density:**  
1.4To 1.5kg/ltr

**MODEL NO:**  
**FTDIP**  
**100/150/200**



## Dry Ice Pelletizer Machine Liquid To Pellets

### SPECIFICATIONS From Liquid to Pellets

**System control:**  
All function PLC control

**Stainless steel enclosure:**  
For Noise Reduction

**Quick start-up:**  
Instant push start button

**Die change over:**  
As and when required

**Conversion Ratio:** (LCO<sub>2</sub> to DryIce)  
With Revert: 1.5 kg to 1kg  
Without Revert: 2.5 kg to 1kg

**Production Capacity:**  
100/150/200 kg/hr

**Motor Capacity:**  
5.5/ 7.5/ 11.5kW  
h 3 Ph power

**Die Change over Model:**  
3mm, 9mm, 12mm, 16mm, 20mm  
upon requested size

**Hydrolic oil:**  
200/400 ltr tank capacity

**I/O Controls:**  
PLC HMI Based with Inbuilt  
Manual Telemetry in HMI SCREEN

**Dry Ice Density:**  
1.4 To 1.5 kg/lit

**Production:**  
Fully Automatic

**MODEL NO:  
FTDIBP100**



## **Dry Ice Pelletizer Machine Block To Pellets**

### **SPECIFICATIONS From Block to Pellets**

**System control:**  
All function PLC control

**Quick start-up:**  
Instant push start button

**Die change:**  
As and when required

**Production Capacity:**  
100 Kg/hr h 150 Kg/hr

**Motor Capacity:**  
5.5 kW h Three Phase power

**Hydraulic oil:**  
200 ltr tank capacity  
Complete set of hydraulic valves

**I/O Controls:**  
PLC HMI Based With Inbuilt Manual  
Telemetry in HMI Screen

**Dry Ice Density:**  
1.4 To 1.5 kg/lit

**Die Change Over:**  
3 mm to 16mm

**MODEL NO:  
FTDIBL 15 | 30**



## Dry Ice Blasting Machine

### **Stainless steel enclosure**

Designed with superior performance nozzles. Suitable for applications demanding extra zeal.

### **Machine Dimensions:**

Length x Width x Height:  
1200X600X 1000 mm

### **Material body:**

SS 304

### **Hopper capacity:**

15Kg and 30 Kg

### **Machine system:**

Single/Double hose.

### **Dry Ice Feed Rate:**

15 – 80 kg/ltr

### **Power Source:**

Electrical- Single Phase

### **Adjustable Velocity:**

700-900 mtrs/sec

### **Motor capacity:**

1.5hp h 3 phase

### **Blasting Pressure:**

0-10 Bar h 0-15 Bar

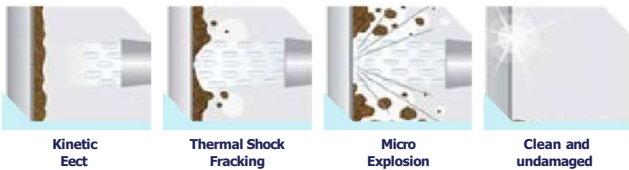
## Why Dry Ice Blasting Is Required?

Dry Ice Blasting employs high-velocity dry ice particles propelled by compressed air for efficient surface cleaning, resembling sandblasting minus the cumbersome cleanup. With temperatures at -109°F, thermal shock breaks substrate-contaminant bonds, and the dry ice vaporizes on impact, eliminating secondary waste.

This non-abrasive, non-conductive method caters to various industries, from heavy slag removal to delicate electronics, reducing waste and time. Conventional methods pose issues like water treatment and part damage, whereas Dry Ice Blasting, with its non-conductive and non-corrosive properties, cleans fragile components without disassembly. It addresses diverse contaminants, from glue to graffiti, offering an environmentally friendly solution.

The Dry Ice Blasting process involves a Dry Ice Blasting machine using 3 mm dry ice pellets at 6-10 bar air pressure, causing unwanted contaminants to freeze, fracture, and undergo an energy explosion, ensuring thorough removal.

### How Dry Ice Blasting Machinery works?



### What Surface can be cleaned?



### What Equipment can be cleaned?



**Ducts and Chambers**



**Power Generators**



**Printing Machines**



**Food processing machines**

### Advantages of Dry Ice Blasting:

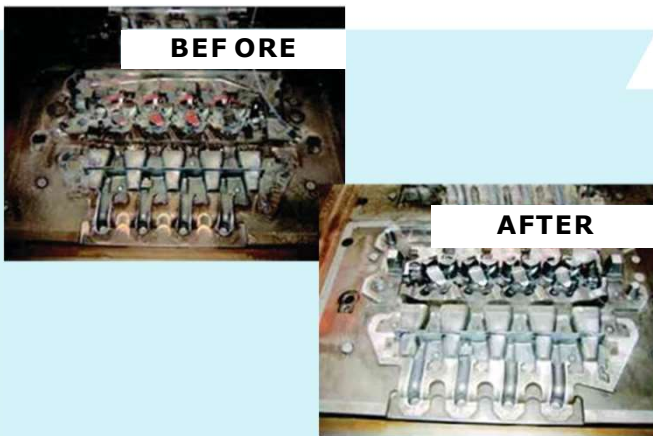
1. Nonabrasive, leaves no residue or surface damage.
2. Adaptable hardness, suitable for various substrates.
3. No negative thermal effects, safe for equipment.
4. No laborious post-cleaning needed, efficient de-burring.
5. Low-temperature Embrittlement reduces cutting force.
6. Removes burrs at any depth.
7. Safe, clean, and environmentally friendly.
8. Low-temperature hardness, effective against tough coatings.
09. Zero CO2 emissions.
10. Highly flexible for diverse materials and contaminants.
11. Can be mixed with abrasive for enhanced cleaning.
12. Suitable for automation and mobile in-place cleaning.
13. Safe in confined areas, no dust, fines, or fumes.
14. Cost-effective for industrial cleaning.
15. Generates only primary waste, no secondary waste.
16. Temperature-dependent, works on delicate and sensitive surfaces.

# “Return On Investment Using Dry Ice Blasting Pays the Cost Of The Equipment Extremely Quickly.”

## Dry Ice Blasting - Efficient Foundry Cleaning

**Challenges with Traditional Methods:** Traditional foundry cleaning, involving processes like cool down and disassembly, leads to equipment damage and unproductively.

**Critical Foundry Issues:** Foundries face downtime during cleaning of permanent molds, core vents, semi-solid castings, and die casting machines.



### Applications:

Dry Ice Blasting suits various foundry needs, including:

- Permanent aluminum molds
- Refractory coatings
- Core boxes and vents
- Die cast tooling
- Shell core molds
- Semi-solid castings/forging
- Resin and release agent removal
- General equipment and facility cleaning
- Conveyors
- General part cleaning

### Benefits Overview:

Dry Ice Blasting guarantees:

- Reduced production downtime
- Elimination of disassembly requirements
- Enhanced cleaning in hot and in-place conditions
- Zero waste disposal costs
- Increased production time
- Non-abrasive, no tooling damage
- Environmentally responsible practices
- Superior as-cast finish

## Dry Ice Blasting - Electrical Equipment Maintenance

**Operational Excellence:** Dry Ice Blasting excels in the Electrical Industry, restoring rotating and stationary equipment efficiently. Its non-conductive nature ensures safe cleaning.

**Addressing Industry Challenges:** Growing electricity demand leaves vital equipment without maintenance, causing inefficiency and outages. Dry Ice Blasting combats these issues, maintaining reliable operation.

**Versatile Cleaning Solutions:** From motors to electronic components, it offers a simple, safe, and fast cleaning process without disassembly or solvent use.

**Economic Benefits:** Enabling online cleaning reduces production downtime significantly. No waste disposal cost, as dry ice vaporizes on contact. Its efficiency and quick Return on Investment make it indispensable for industry applications.

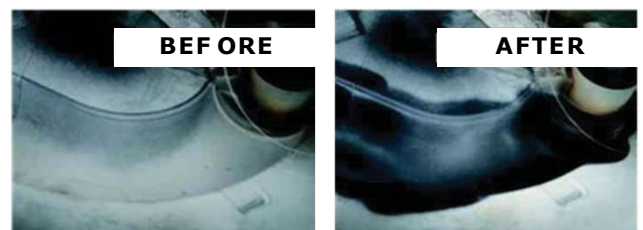
### Applications:

- Dry Ice Blasting serves various electrical equipment, including motors, generators, turbines, insulators, switches, cable ways, trays, and electric switchboards

### Benefits Overview:

Dry Ice Blasting guarantees:

- No chemicals, water, or blasting media
- Reduced cleaning time and labor costs
- On-site equipment cleaning
- Non-abrasive, gentle surface cleaning



“The outage time typically needed for cleaning can be reduced up to 65%.”

## Dry Ice Blasting - Power Engineering

**Industry Challenge:** Power Generation relies on clean electrical equipment for optimal performance, but deferred cleaning leads to maintenance issues and potential outages.

**Efficient Solution:** Dry Ice Blasting, the most effective method, offers chemical-free, non-conductive, and environmentally responsible cleaning, reducing outage time by up to 65%.

**Contaminant Removal:** Dry Ice Blasting removes carbon, grease, and dirt, improving meg readings and restoring machine efficiency.

**Return on Investment:** Highly efficient and gentle, it ensures a quick ROI, reducing project costs for contract cleaners. Equipment is available for purchase, lease, or rent.

### Applications:

Dry Ice Blasting is suitable for various power generation equipment, including turbines, compressors, generators, AC/DC motors, circuit breakers, switch gears, transformers, rotors, stators, insulators, field frames, and substation isolators and bushings.



### Pay Back on Performance:

- Reduce catastrophic failure
- Improve megohm readings
- Increase polarization indices
- Improve thermal dissipation
- Reduce outage time for cleaning by 65%
- Eliminate secondary waste
- Non-conductive, non-abrasive, and environmentally responsible

## Dry Ice Blasting - Polyurethane Industry Cleaning

**Clean Mould Cavities:** Dry Ice Blasting ensures high-quality plastic part manufacturing with a nonabrasive, environmentally responsible solution. It removes residues and flash without water or chemicals, reducing cleaning time and increasing preventive maintenance cycles.

**Polyurethane Industry Challenges:** Build-up in production facilities poses risks, but traditional cleaning methods are delayed to avoid downtime.

**Efficient Solution:** Dry Ice Blasting optimizes cleaning in a fraction of the time, allowing in-place cleaning without equipment removal. It's electrically safe, preventing short-circuits, and produces no flammable or explosive by-products.

### Applications:

Dry Ice Blasting is effective for various applications in the polyurethane industry, including blow moulds, compression moulds, extrusion moulds, injection moulds, thermoform moulds, plastic injection screw barrels, urethane moulds, and more.



### Pay Back on Efficiency:

- Better cleaning
- No chemicals, water, or blasting media
- Minimal downtime
- On-site equipment cleaning
- Non-abrasive, gentle to the surface
- Reduced overall cleaning time



## OUR CLIENTELE



## SAMSUNG



### Our Factories at

Coimbatore | Perambalur | Cochin | Davanagere | Bagalkote

### Our Group of Companies

Sri Venkateswara Carbonic Gases Pvt. Ltd. | Rasi Engineering Works | Swathi Air Products  
Super Gas Co. | Vencar Speciality Gases h Equipment Pvt. Ltd

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