

## Facts

### Dry Ice Cleaning ...

- Manageable solution to improve and upgrade conditions.
- Non toxic
- Non abrasive
- Non corrosive
- No or less production down time
- For difficult to reach areas
- For in-process maintenance
- Easy to use
- Eco friendly

### Conventional Cleaning ...

- Dismantling of machinery
- Re-alignment of machine parts
- Malfunction of machinery
- Long production down time
- Skilled work force needed
- Labor intensive
- Expensive disposal of cleaning agent
- Unattractive appearance
- Fire hazard ( thinner / solvents )
- Health risk
- Eco hazard

## Machine

### Technical Parameters ...

- Fully pneumatic
- No electrical power supply needed.
- Dimension L20cm x W20cm x H41cm
- Net weight: 5 kg
- Air consumption: 250 - 600 L/min
- Cleaning Power: Adjustable at the handle
- Required Inlet pressure : 6 - 8 bar
- Pellet size: diameter 1.5 - 3mm
- Dry ice consumption: 2 - 6 kg/hrs
- **Ultra mobile : Can be hand carried !**
- Comes with pneumatic quick coupling.
- Ready to connect and use.



Your Distributor :

# DRY ICE CLEANING

SWISS ENGINEERED

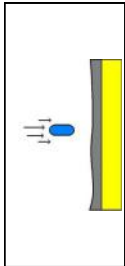
## Model : C1



- Functional
- Reliable
- Affordable

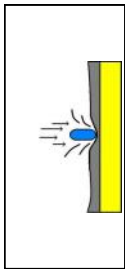
[bono-iceblast.com](http://bono-iceblast.com)

# Theory



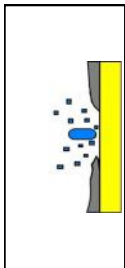
## 1. Velocity

The pre-formed dry ice pellets are accelerated through specially designed nozzles at extreme high Velocity towards the contaminated area



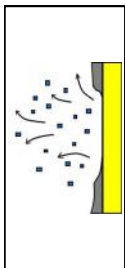
## 2. Kinetic Energy

The mass of dry ice pellets traveling at the set velocity creates high kinetic energy allowing the dry ice pellets to penetrate contaminated area.



## 3. Heat Absorption

The vast temperature difference between the dry ice pellets and the contaminated surface creates high shear stress's resulting in bond failure of the contaminant.



## 4. Expansion

The rapid heat absorption of dry ice pellets result in instantaneous sublimation causing the volume of the CO2 to increase by approx. 700 times creating an area of high pressure.

# Medium

## Dry Ice Pellets ( Solid CO<sub>2</sub> )



## Dry Ice Pellets are ...

- Odorless
- Non toxic
- Non flammable
- Non hazardous
- Soluble in water
- Natural component of air
- Colour : white
- Density : 1.56 gr/cm<sup>3</sup>
- Hardness : ~1.5 (Mohs Scale / Baby Powder ~ 1)
- Temperature of solid CO<sub>2</sub> : -78°C

# Application

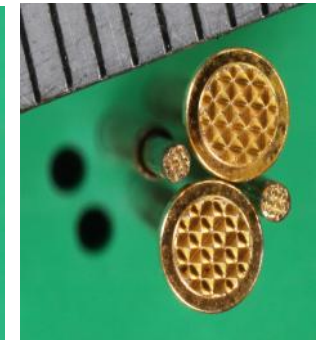
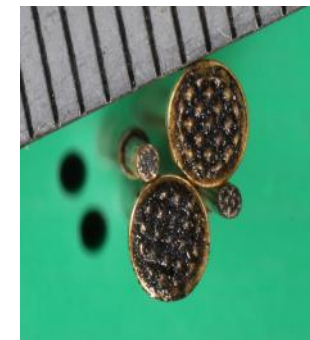
## History ...

Dry ice cleaning was developed for a vast range of industries where production up-time is critical.

It is proven efficient in eliminating solid contamination from countless components.

Before

After



## Industries used ...

- Car Detailing (Interior Cleaning)
- Contract Cleaning Companies (Office Cleaning)
- Public Sector (Removal of Mold)
- Utility Maintenance (Removal of Green Algae)
- Food & Beverage (Dosing / Transport Systems)
- Contract Manufacturing (Jigs / Fixtures)
- Wood & Furniture (Antique Restoration)
- Paper & Packaging (Positioning Sensors)
- Chemical (Fluid Measuring Systems)
- Printing (Ink Jet Printing Heads)
- Plastic & Rubber (High Precision Injection Mold)

Many more ...