

INTELblast
INTELLIGENT CLEANING

enICEco



PROFESSIONAL SOLUTIONS

CLEANING TECHNOLOGIES FOR EVERY SURFACE

We offer a solution to every surface!

How Does Dry Ice Blasting Clean?

Dry Ice Pellets are propelled at a supersonic speed by compressed air. Upon impact, the dry ice creates a micro-thermal shock (caused by the extreme cold temperature of -79°C) which breaks the bond between the coating and the substrate. The high pressure air stream removes the dirt from the surface, while the Dry Ice Pellets vaporize (sublimate) before your eyes.

A Greener Clean

Dry Ice Blasting is quickly becoming favoured among all industries because of environmental and production processes, standards, and certifications along with a growing consciousness of the environmental impact of production practices. This method of natural cleaning uses pellets made through a process of taking Liquid Carbon Dioxide (CO_2) and expanding it to produce a snowlike substance, that is compressed through a die to make hard Dry Ice Pellets. Environmental benefits include cleaning with a natural substance, replaces chemicals and minimizes the need for specialty waste disposal.

Our service serves many benefits

1. **Cleaning with a Natural Substance** Dry Ice Blasting uses Dry Ice Pellets made from the same substance used to carbonate beverages. This method does not generate secondary waste as does sand, soda, water, or grit cleaning. Dry Ice Blasting also replaces chemical and solvent based cleaning.
2. **Safe on Electrical** This versatile process cleans heavy buildup without damage to sensitive areas like electrical components, switches, wiring, photo electric sensors, and more.
3. **No Damage** Dry Ice Blasting is completely dry, non-abrasive, non-toxic and non-corrosive. It quickly removes most contaminants without damage to switches, panels, lines, tubes, wiring or belts, HVAC equipment and is safe to use on electrical.
4. **No Down Time** The process is very fast and dry. The dry ice disappears on contact and can be performed on-line without disassembly and without need for drying time.



IBLmini

IBL3000

| Gun | Light weight safety | Standard safety |
|---------------------|---|--|
| Nozzles included | 2 nozzle of choice: 3 mm - airflow from 1m ³ /min 4 mm - airflow from 1,5 m ³ /min 5 mm - airflow from 2,5 m ³ /min | 1 short nozzle with 3 inserts of choice: 4-5-6-7-8-9-10 mm |
| Hose standard | 5 meter (1/2") technical rubber without silicone | 7 meter (3/4") technical rubber without silicone |
| Pressure | 2-12 bar | 2-16 bar |
| Dry ice consumption | 10-30 kg/hr | 25-90 kg/hr |
| Hopper size | 8 kg | 25 kg |
| Width | 480 mm | 400 mm |
| Depth | 550 mm | 780 mm |
| Height | 610 w/o handle/895 mm | 1110 mm |
| Weight | 32 kg | 86 kg |
| Vibrator | Electrical | Electrical |
| Pressure regulator | Festo 1/2" | Festo 1" |
| Chassis | Stainless steel | Stainless steel |
| Cover | Stainless steel | Stainless steel |



Dry ice is the solid form of CO₂, which is well known and often used in the food industry. It is completely waterless and eliminates the need for use of chemicals.

We offer dry ice blasting solutions both for larger industries with a daily use to smaller machines with low air consumption for scheduled cleaning.



Food processing

Cleaning with dry ice of food processing equipment has widely been accepted as an effective and environmental friendly method to remove grease, grime, leftover food, caked-on dust, flour, oil, baked-on carbon, yeast etc. And also important.

- Reduction in labour cost = lower OpEx
- Reduces wear on tooling and give longer lifetime of machines = lower CapEx
- Reduced use of chemicals = better environment

Equipment and parts can be cleaned while in operation.

This 100% cleaning will prevent bacteria growth – even in hard-to-reach areas like.

- Conveyors
- Switches
- Slicers
- Packaging lines
- Panels
- Mixers
- Motors
- Ovens



All automated equipment benefits from a “NO CONTACT CLEANING SYSTEM”.

Lightweight materials used to manufacture Gun Heads, Grippers, and Tooling Stations are damaged by traditional methods of Slag and Debris removal. Dry Ice provides for the removal of problem causing contaminants without damage to the equipment.

Dry Ice Cleaning eliminates scraping, chiseling, hammering, and the use of toxic chemical cleaners.

Efficiency is increased due to Grippers, Welding guns, locating pins and tooling stations working as if new, also as and when break downs occur, engineers can isolate and repair defective equipment quickly without having to remove difficult weld slag.



Welding cells and robot cleaning

Critical process cleaning to automotive manufacturing industry

Regular maintenance of automated production equipment increases the volume and quality required from manufacturing industries. To that end it is essential that a bespoke integrated cleaning and preventative maintenance program is in place and monitored, to extend the life and service of your assets.

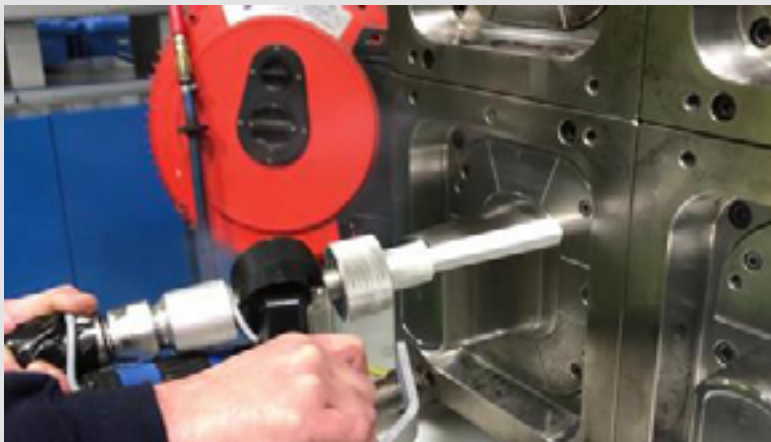
Difficult contaminants produced during production could be, but not limited to, Grease, Carbon, Weld slag, Weld spatter, Resin, Glue and chemicals.

All of the above if not regularly removed will build up in and around automated equipment damaging wrist axis joints, clamps and grippers, locating pins and part present sensors and when the equipment fails your very expensive technician will have to remove the build up of slag/dirt before any repair work can be completed. (extended equipment down time).



Regular cleaning reduces the time needed for each cleaning operation and more important reduces the rejects to a minimum.

No dust, water or chemicals used to get superior finish and quality.



Plastic injection industries

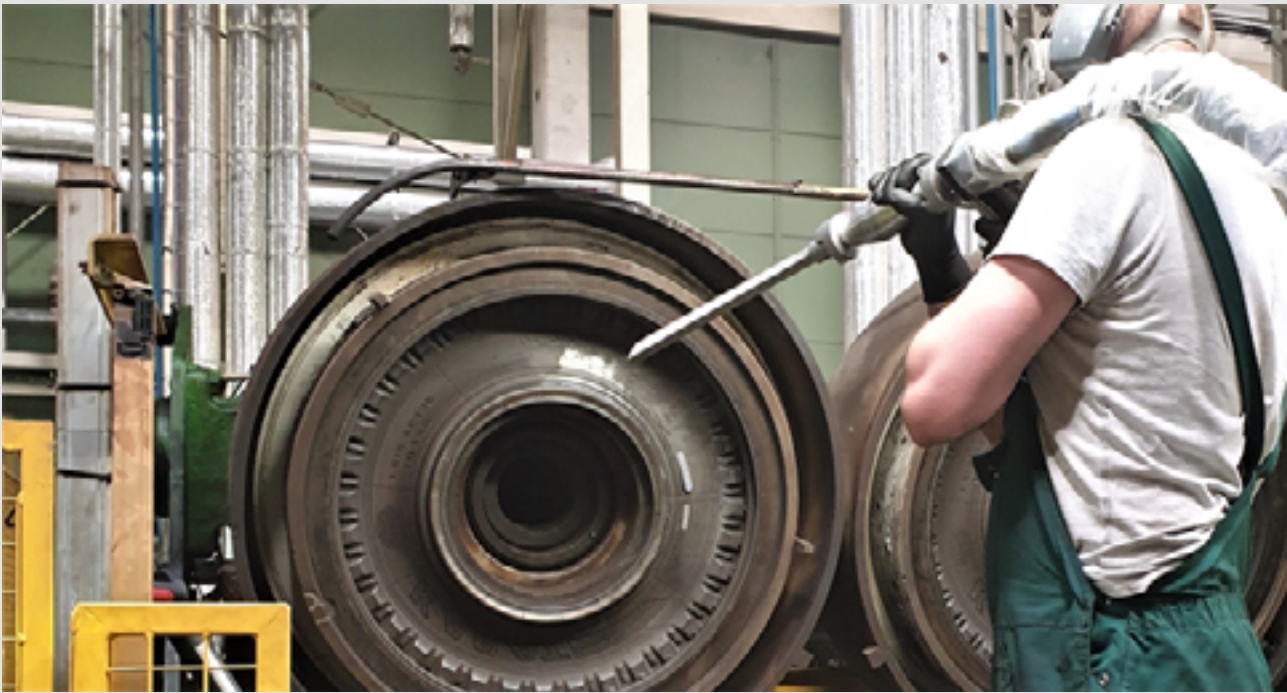
Cleaning with dry ice of moulds, screws, mixers ect. in plastic and styropor injection industries can benefit from dry ice cleaning, which gives them advantages such as:

- Reduction in labour cost
- Reduces wear on tooling
- Decreases scrap rates

In situ on site cleaning without having to remove the moulds from the plastic injection moulding machine. Cleaning when hot is an advantage to the cleaning with dry ice. Quick return of equipment back into production. No need to cool down and reheat.

What normally could take hours can be done in minutes.

Removing of antislip material, grease and residues from production material without any damage to the mould or equipment.



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CLEANING WHILE HOT - Less down-time

IN-SITU CLEANING - Less down-time

100% CLEAN - Less rejects

ENVIRONMENTALLY FRIENDLY - No chemicals

Reduces labor cost - safe to use - No secondary waste

With a high investment cost of each tire making mold, a long life is a must. Dry ice blasting has for the last 30 years been the preferred cleaning methods for tire molds because it is fast, efficient, dry and absolutely without any damage to the valuable mold.

The impact speed and expansion of CO2 on impact makes it possible to clean the important vent holes in molds.

Dry Ice Blasting removes the matter that can promote mould growth along with removing existing mould with high pressure blasting at - 78 °C freezing temperatures.

Restoration of contaminated materials is successful for industries like residential building, construction and processing plants and will save time and money without the need for disassembly, reducing secondary waste clean up and restoring rather than replacing materials.



Mould remediation

Mould and Bacteria can cause a great amount of health issues when found in everyday living and working spaces.

Common causes and habitats for mould growth include floods, leaks, plumbing problems, elevated humidity, and inefficient cleaning. Allergies are on the rise, fungal infections have become common and contamination has become a risk in production facilities, restaurant kitchens and product and food storage facilities.

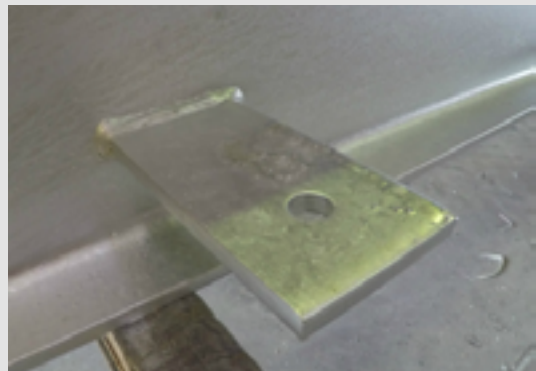
You are benefitting from Dry Ice Blasting, because:

- 60% to 80% faster job completion
- Safer, cleaner, easier and faster
- Superior detail cleaning in tight spots and around obstructions
- Complete removal of mold from tight angles in trusses, joists and corners
- Enables cleaning around wiring and plumbing without damage
- Thorough mold spore removable
- Easy clean-up, with reduced waste disposal
- Surface left completely dry, contaminant free and structurally intact.



Removal of spots with zinc ashes is done in seconds without any damaged to the surface. We supply mobile units that can be used at several locations.

No water or chemicals used to get superior finish and quality.



Zink ash removal Removing of zinc ash from hot dip galvanization

- Reduction in labour cost
- Reduces aftertreatment issues.
- Avoid scratching from tools

Dry ice blasting offers a completely dry and non damaging cleaning process.

- Quickly removal of zinc ashes and other unwanted particles
- Can be cleaned while surface is hot
- No water spill in production area
- Quick turnaround
- Perfect result can be achieved with only little air supply

An essential part in the trouble-free operation of a railway is a well-maintained system and technology.



Transport

Cleaning electrical control panels, air-conditioning/heating system, seats ect. with dry ice offers many advantages such as:

- Reducing risk of short cuts and break-downs.
- Reduces risk of damage to components.
- Cleaning of electrical control systems
- Quick pre-clean before inspections.
- Cleaning of Air conditioning / heating systems.
- Cleaning of springs and shock absorbers.
- Cleaning of brakes and undercarriage
- Improve air quality in trains, buses, airplanes etc.

Cleaning of exhaust hoods and exhaust fans to reduce risk of fire.





Shoe-mould cleaning and maintenance

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Protecting and securing long life of a mould is key to all manufactures. Using dry ice blasting the regular cleaning of shoe moulds provide the perfect asset management and thereby reducing cap-ex.

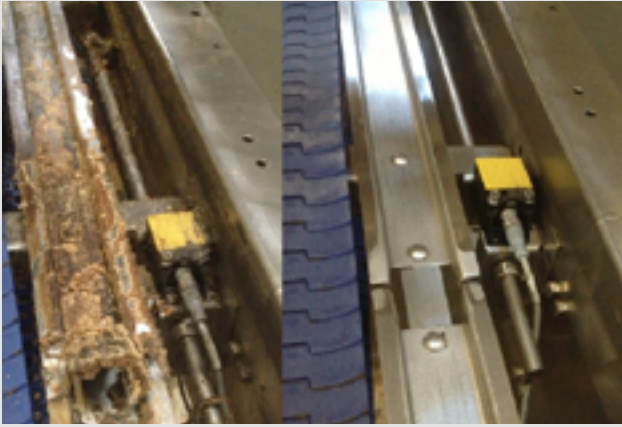
Moulds for any kind of shoes or boots requires a perfectly cleaned mould to secure highest quality of performance and appearance.

Dry ice blasting enables a dry and dustless cleaning without having to remove the mould from the process line.

A gentle and non-abrasive removal of deposits on the mould secures a long life of the mould and thereby reduces capital expenditures cost for new process equipment.

The reduction in use of chemicals or other harmful processes can be replaced with the environmental friendly dry ice blasting solution.





Dry ice (solid form of liquid carbon dioxide) is very well known in the food industry for cooling. It is accepted as an environmentally friendly technology that can replace use of chemicals and the excess use of water.

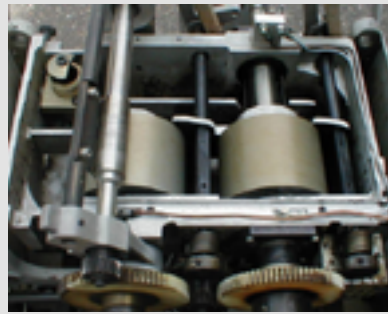
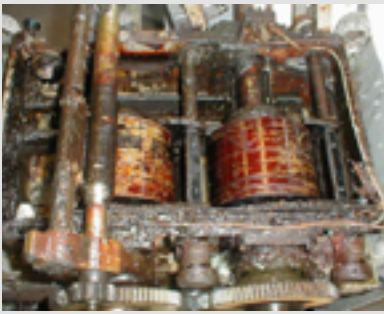
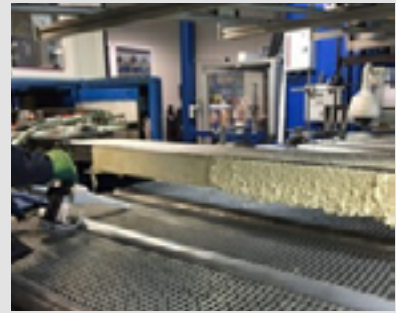
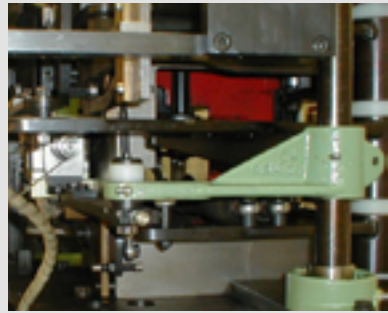
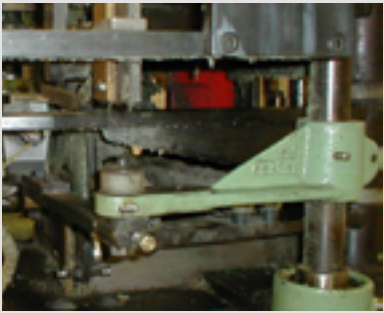
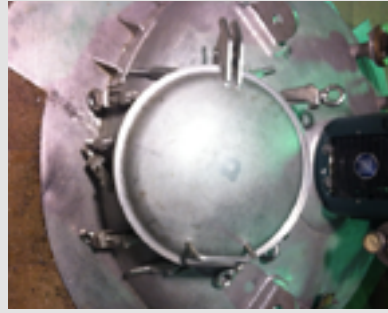
No moisture = no bacteria/mold

Bakery

Reasons for Bakeries to decide on dry ice cleaning:

- Process line always dry and ready to produce (NO DOWN TIME)
- Remove labels and glue from conveyors and machines
- Partial cleaning without shutting down
- Roof to floor cleaning (lamps, cables etc.) without covering up (DRY)
- Cleaning of machines inside, around bearings, motors, electrical etc

Dry ice blasting does benefit many different industries. Besides the presentations in this folder we also offer to work with you in a close co-operation to find solutions for you industry.



enICEco dry ice pelletizer DIP100

In house production of high density dry ice pellet offers many advantages.

- Delivery/production with short notice
- Reduction in losses, by manufacturing only what is needed
- Fresh pellets for better cleaning or cooling

The important factors, when considering purchasing a dry ice pelletizer is, besides the obvious fact that you want lowest capital investment cost, also that you get a machine with well-known reliable components, with the minimum of maintenance cost.



Besides a durable 100% stainless steel cabinet, we only use components from Danfoss, Siemens and high performance hydraulics power unit as key components for the operation of the enICEco DIP100 pelletizer.

When manufacturing dry ice the conversion of liquid CO₂ to dry ice is about 2,5 kg of liquid CO₂ to make 1 kg of dry ice.

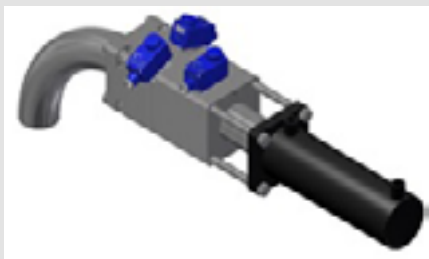
The special design for supplying liquid CO₂ to our press chamber, brings the conversion closer to 2,2. That of course also requires that the installation of the LCO₂ tank and supply piping from the tank to the pelletizer is done according to our guidelines.

The stainless-steel cabinet is designed so that it easily can be moved around with a fork lift, which facilitate regular, easy cleaning around and under the machine. Larger removable panels give a spacious access to all parts inside the pelletizer and makes routine maintenance time and cost efficient.

The control of the pelletizer can be accessed from the large display. Remote control applications are available to start/stop of the pelletizer.

Who can benefit from having in house production of dry ice?

- Customers and users of dry ice with long transport time and distance to supplier.
- Customers who require short response time from ordering to use.
- Customers where the pay back calculation shows significant savings. Production cost calculation can be found on our home-page.



Technical data and specifications:

| | |
|----------------------------|-------------------------|
| Production capacity: | 100 kg/hour @ 16-18 bar |
| Standard extruding plates: | 3 mm |
| Voltage: | 400V-50 kHz (16 Amp) |
| Power consumption: | 5,5 kW |
| Dimension: | LxWxH: 110x70x170 cm |
| | Weight: 450 kg empty |

The pelletizer can operate with LCO₂ tank pressure from 13 to 25 bar. The piping from tank to pelletizer must be cryogenic insulated piping, so a minimum distance from tank to pelletizer is ideal.

OUR COMPANY

We are a company founded 2012 in Denmark, with office and production also in Spain and with distribution to more than 25 countries.

The design of our dry ice blasters came as a response to the need of our customers in the automotive industries, who needs machines which can be moved around in narrow spaces around the production lines. The result is our IBL3000 which is a 24/7 workhorse with outstanding cleaning power and with the lowest dry ice consumption on the market, still giving best cleaning result.

For two equally larger industries (food and plastic injection) we have developed the IBLmini, which besides a very attractive price also stands out as using very little compressed air.

Latest development is our dry ice pelletizer, which allow users to manufacture their own dry ice.

All our machines are made in stainless steel and all components are from top international suppliers like FESTO and SIEMENS.

Our equipment and machines have made us a market leader both at the technological level and in our capacity for innovation.



Our innovative equipment and machines are developed, designed, produced and tested prior to operation in both Denmark and Spain. Our highlights are high quality, highest level of functionality and with a very important feature - easy maintenance.

We seek always to have solutions for all industries. And we constantly search for the most suitable technology and specialized cleaning solutions for every need and for each customer.

For that reason, we also manufacture and supply a range of ultrasonic cleaning equipment and steam cleaners. Equipment that are complementary in use and will optimize the maintenance program for most of our highlighted industries.

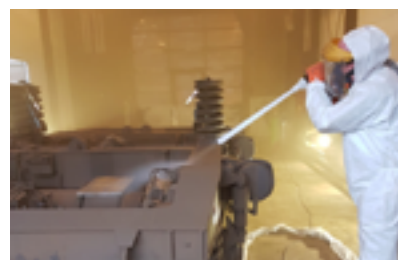
You can read more about all we offer and watch videos showing solution from our primary industries by visiting

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