

ADVANCED **DRY ICE** CLEANING SOLUTIONS

- Minimizes production downtime
- No water
- No chemicals
- No secondary waste
- No abrasion of treated surfaces
- Enviromentally friendly



ADVANCED SURFACE TREATMENT TECHNOLOGY

ferroecoblast.com

AIR BLASTING | SHOT PEENING | 3D POST PROCESSING | ENAMELING & COATING SOLUTIONS | MEDICAL INDUSTRY SOLUTIONS | WET BLASTING
LASER CLEANING & TEXTURING | DRY ICE & DRY SNOW CLEANING | PAINT STRIPPING | SODA BLASTING | ULTRA HIGH PRESSURE WATER JETTING

FerroČrtalič

is a leading company in
development **solutions**
and **production machinery**
for surface treatment
technologies.

Our philosophy is tracking the novelties and constant development through innovations and research, which enables us to put ourselves on the top of the suppliers of **technological solutions in air blasting, shot peening and industrial surface cleaning technologies.**

We are present on all important exhibitions in the world and we attend and held lectures about surface treatment technologies and solutions, to be as close as possible with our clients.

Reshaping the
surface treatment
industry with
constant R&D

We are
a solution
provider

Dedicated
to a superior
Customer
experience



- Over 55 years of know-how, tradition of innovation and excellence
- More than 1.000 successfully installed custom-made solutions worldwide
- Highly motivated, educated and experienced team
- On-site laboratory and modern research center
- Excellent after-sales activities
- Satisfied customers in the most demanding global companies



What is **DRY ICE**

Dry ice cleaning is indispensable in the modern production process. Cleaning or removing dirt and residues can be done directly on machines, hot tools, etc., without wasting precious time and money dismantling and reassembling.

This type of cleaning technology is very similar to sandblasting, where a medium is accelerated with a pressurized air stream to impact a targeted surface, except that the effect is doubled. With the difference in temperature, dry ice creates tensions and fractures on the surface layer, and with the kinetic energy of its pellets removes deposits without damaging the base material.

Due to its soft means of application, dry ice cleaning is in many ways superior to sandblasting. It does not pit or damage the underlying surface and sublimates quickly into the air. It leaves no secondary residue and does not erode or wear away the targeted surface. Tolerances are preserved and most equipment and machinery can be cleaned while in place, no transport needed.

**Environmentally
friendly
process with
net zero
carbon footprint.**



DRY ICE can be used
for **cleaning**, in the
**food and wine
processing
industry, cooling,
catering, etc.**

DRY ICE advantages:

- Cleans numerous objects with varying complex geometries in one go
- Equipment is cleaned on location, thus minimizing production downtime
- Quick evaporation that leaves no waste - only removed material
- Dry ice transforms into harmless carbon dioxide gas
- No water - no possibility for microorganism growth
- No chemicals
- Non-abrasive, no damage to the surface

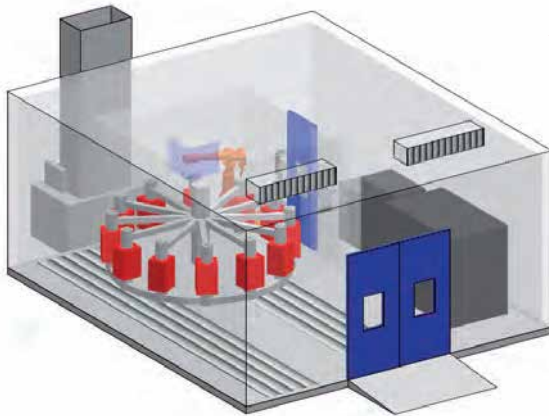
AUTOMATED DRY ICE



IN-LINE ROBOTIZED DRY ICE CLEANING CELL

Fully automatic line with a robotic system for cleaning with dry ice pellets before painting. The system has a lot of unique features. The automatic blaster filling system enables constant and precise dry ice pellets flow for the best cleaning result, the automatic dosing unit with built-in dispensing screw conveyor for in-time dosing and dry ice quality loss prevention, a unique adjustable vertical loader for cold boxes and the whole system is autonomous, there is no operator needed. All the features described above guarantee 100% cleaning results every day.

- In-line automatic cleaning system
- Automatic blaster filling
- Automatic dosing unit
- Insulated dry ice storage
- Adjustable vertical loader
- User-friendly "FerroSmartPanel"



ROBOTIC CLEANING CELL FOR CLEANING ENGINE PARTS

Fully automatic robotized solution for permanent cleaning of engine parts. With all the built-in systems our cell is the most advanced, effective and economical solution for the cleaning of engine parts in the world. Pre-set programs along with the use of a robotic arm ensure 100% clean products each time. The system has dual dry ice blasting nozzles for maximum efficiency of the cleaning process.

- Fully automatic cleaning process
- Completely closed system
- In-sync with other production processes
- Pre-set cleaning programs for 100% clean products
- On-site dry ice production with pelletizer PE80
- Recovery unit RE80 enables big savings in energy costs, cost of liquid CO₂

Each of our dry ice automatic cleaning solutions **is unique and well configured to solve the biggest problems** and satisfy even the most demanding clients.

CLEANING SOLUTIONS

AUTOMATIC DRY ICE CLEANING CELL

FOR SMALL AUTOMOTIVE PARTS

This dry ice cleaning cell is used for cleaning gear pumps and is designed to clean large quantities of products, with full automation for the best cleaning result. The system is cleverly designed to ensure maximum hygiene with a separate entrance and exit for cleaned parts. To maximize efficiency, the operator can adjust the height of the blasting nozzle, its speed and the number of passes over the surface.

- Fast cleaning process for large-scale production
- Cleaning process is 100% controlled
- Clean / unclean compartments for maximum cleanliness
- Maximal efficiency of cleaning with minimal worker input
- On-site dry ice production with pelletizer PE80



DRY ICE CLEANING ROOM

The safe and user-friendly dry ice cleaning room is very useful for cleaning larger components in an enclosed space, which prevents dirt, oils, liquids, etc., from entering the production lines and halls. The room is soundproofed to prevent sound pollution in the production process

- Sound-absorbing insulation panels, soundproof doors
- Sensor and alarm system for measuring CO₂ concentration
- Suction system with filter unit with cassettes and ventilator
- Electronic control panel



The most important task of every automatic or robotic cleaning solution **is the permanent and continuous supply** of a controlled amount **of dry ice** pellets to the nozzle.

► DRY ICE EQUIPMENT

BLASTER IBLmini

IBLmini blaster is the ideal choice for those, who would like to have the opportunity to clean small parts and surfaces, without having the usual constraint for a high air flow compressor. Daily maintenance on processing equipment and electronics or the occasional cleaning of parts is easily carried out with the IBLmini.



BLASTER IBL2500

The IBL2500 has got ¾" Festo air components which will be suitable for almost all types of cleaning applications. Weight and size is smaller than the IBL3000 and more powerful than the IBLmini. The perfect choice for factory air cleaning 3000 -7000 ltr air/min and at 5-7 bar.

BLASTER IBL3000

With an overall width of only 400 mm the machine can easily be moved in and around in narrow spaces and especially in between machines in the production.

Being narrower does not mean a small dry ice hopper. The IBL3000 holds more than 25 kgs of dry ice, which for most applications is more than 30 minutes operation before refilling.



PELLETIZER DIP 120 & DIP 240

With an output of 120 kg or 240 kg per hour the DIP120 and DIP240 will cover the needs of most stand alone, in-house production of dry ice for cleaning or cooling.

Smart engineering with internal tubing for the flow of the liquid carbon dioxide not only reduces production cost, which in return benefits our customers, but also increases the efficiency and make it possible to have a start up of dry ice pellet production in less than 1 minute.



What is **DRY SNOW** blasting

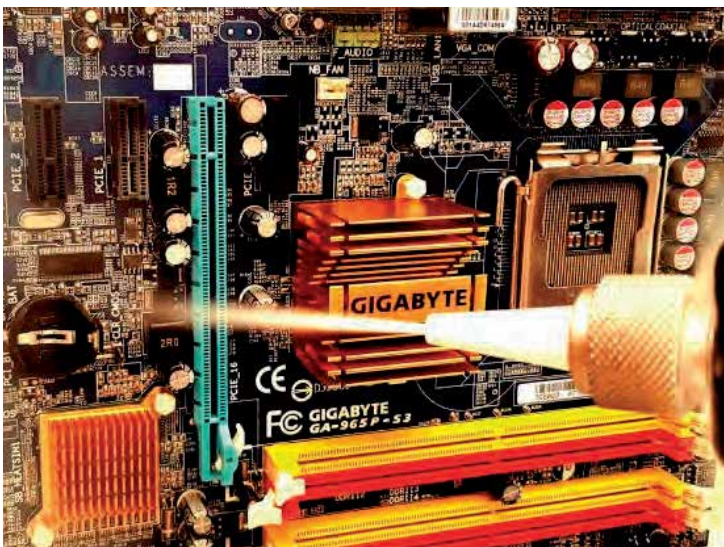


Similar to the dry ice blasting/cleaning process, the special feature of snow blasting is that liquid CO₂ is first **converted into standard pellets** and immediately after to very small **solid CO₂ snow particles** at a temperature of **-78.5 °C**. Uniform micro crystals have **better density** in the airflow and much less kinetic energy, making the impact on the surface of the object being cleaned extremely gentle. **Working pressure** can be **significantly lower** and the consumption of dry snow crystals is easily controlled. Our snow cleaning method is the next step of cleaning very demanding and precise objects that are too sensitive for classic cleaning processes.

WHERE **FerroECOBlast's snow blasting technology** is best applied in the cleaning of demanding and sensitive components, like electronics, fine mechanical parts etc. It is also becoming increasingly popular for **final pre-cleaning** or **activating surfaces** prior to painting metal or plastic parts of any size both in individual and serial production.

do we We offer our own know-how, procedures and equipment for cleaning of very **sensitive and delicate surfaces** with innovative, manual or automated/robotized snow blasting technologies in the mass production of automotive, aerospace or medical instruments and components.

apply it?



DRY SNOW advantages:

- The only system on the market that provides 85% efficiency in obtaining dry ice pellets from liquid CO₂
- Fast, cost-efficient and safe cleaning process
- Easy automation and process monitoring with reproducible features
- High cleaning and pre-cleaning efficiency of a wide range of materials

DRY ICE / SNOW SOLUTIONS

ARE APPLICABLE TO:

FOUNDRY INDUSTRY

Everyday cleaning of dies/molds directly on die-press machines is a necessity for modern-day foundries.

AUTOMOTIVE INDUSTRY

Surface preparation before painting has never been easier than today with dry ice/dry snow cleaning.

AEROSPACE INDUSTRY

From landing gear systems to cargo bays, dry ice blasting has proven to be an ideal solution for many cleaning applications in the aircraft and aerospace industry.

DEBURRING

Dry ice blasting is an effective solution to remove burrs and flash from machined and molded parts.

PLASTIC & RUBBER INDUSTRY

Dry ice cleaning technology provides plastic & rubber manufacturers with a non-abrasive and environmentally friendly method of cleaning their molds.

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