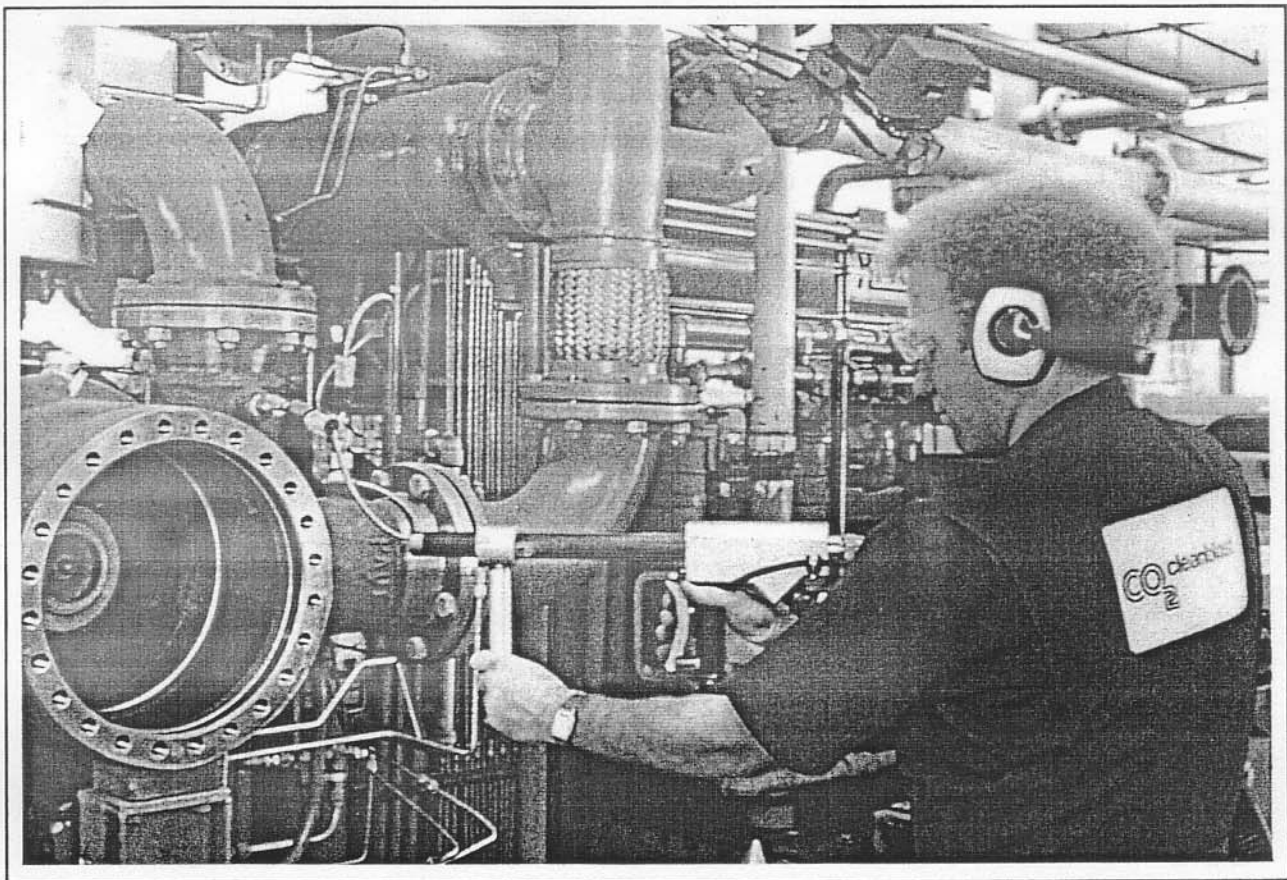


**Blast cleaning with
dry ice pellets:
THE CO₂ CLEANBLAST™
SOLUTION**



**THE CLEAN TECHNOLOGY
FOR YOUR UNSOLVED
CLEANING NEEDS**

THE CHALLENGE

Rapid developments in material and equipment have created a new challenge in the areas of cleaning and maintenance in many high-tech applications.

If your industrial processes present one or more of the following surface cleaning problems:

- Sensitivity to Deformation
- Contaminant Intolerance
- Labor Intensiveness
- High Downtime Penalties
- Environmental Hazards
- Extensive Disassembly Needs

THEN... THE CO₂ CLEANBLAST™ SYSTEM IS YOUR SOLUTION

IN TODAY'S INDUSTRIAL ENVIRONMENT

Paints, adhesives, rubber, rust, lubricants, tars and process residues can be easily removed from a wide variety of substrates including:

- metal alloys
- ceramics
- plastics and composites.

Blasting with solid dry ice pellets allows tremendous operational flexibility.

The performance parameters of the system (e.g. pellets size, velocity, quantity) can be adjusted to provide a range of cleaning capabilities unmatched by conventional systems.

Nearly every industry has a cleaning problem where dry ice blasting will provide a much-sought-after solution. Examples of the wide range of industrial segments where the CO₂ CLEANBLAST technology can be advantageously applied include:

- Composite Molding and Tooling
- Process Machinery
- Nuclear Decontamination
- Robotics, Welding Operations
- Aircrafts Maintenance
- Conveyors
- Power Utilities (turbines...)
- Bulk Chemical Transport
- Paints, Coatings.

CRYOGENIC PAINT-STRIPPING AND INDUSTRIAL CLEANING SYSTEMS USING DRY ICE

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The problems related to paint-stripping and industrial cleaning have so far been faced using traditional systems such as: mechanical shotblasting, chemical paint removers, high pressure hydro-washing, pyrolytic furnaces, silica fluid beds, cryogenic paint-stripping through liquid nitrogen, etc.

Cryogenic shotblasting systems using CO₂ are alternative methods, with little environmental impact, to prolong the life of the supports and to cut down the costs of waste treatment and disposal in a very safe way both for the operator and for the environment.

The cryogenic shotblasting systems use dry ice pellets that are thrown against the surface to treat, and therefore removing dirt, painting residuals, films, oils and grease, etc. without abrasion of the support. The pellets immediately sublime into the atmosphere as gaseous carbon dioxide (CO₂).

Such gas, which is a natural component of air, widely used for industrial purposes, above all in the food industry, has some special features: it is a not inflammable, nonconducting, anti bacterial dry gas, which is nondangerous for all the mechanical parts and electrical equipment, with a 5000 ppm. TLV. Its action is based on three factors, that can be independently set:

- 1 Impact speed of the pellets (kinetic energy)
- 2 Flow of the pellets
- 3 Generated thermal shock

The low temperature of the CO₂ pellets (which is a constant at - 78,5°C), hasn't got any stripping or cleaning effect if the kinetic energy and the quantity of thrown pellets are properly dosed.

SOME OF THE FIELDS WHERE CRYOGENIC PAINT-STRIPPING THROUGH CO2 PELLETS IS USED

It is impossible to think that the cryogenic paint-stripping systems using CO2 pellets can actually wholly replace the normally used traditional systems.

There are certain fields of application where such systems are successfully used becoming a standard.

In the aerospace field, for example, that was their initial target of application, the cryogenic shotblasting systems through CO2 have now been approved for paint-stripping and are imposed as a standard by the most important manufacturers of aircrafts (Mc Donnell, Douglas - Boeing - Lockheed).

The system is really successful where the following requirements are to be met:

- paint-removing and/or cleaning are directly and indirectly very expensive. For example referring to painting, that is to clean the chain and the bearings of the air-conveyers of the painting plants themselves; to wholly clean the painting booth for liquid paintings, for all the large products that cannot be treated in a different way but by sandblasting, which however has many wastes that have to be disposed of.

(Such as bridges, metallic frames, ships, interior of tanks, holds, generating-stations, as well as monuments, façades, etc.)

If a hot die can be better cleaned aboard without disassembling it while the production can restart within a shorter period of time, this turns out to be a great advantage in the field of injection moulding and casting.

- the surface to be treated is delicate and cannot undergo abrasive treatments, such as paint-stripping of glass products, cleaning of precision mechanical components, (aeronautics), removing protective coatings from automatically printed circuits or in-situ paint removal from signs, aluminium frames, graffiti on plasters, etc. microtrimmings of light alloys such as magnesium, titanium, and special aluminium alloys