

Blast Cleaning

Dry Ice

SOLID CARBON DIOXIDE



What is dry ice blast cleaning?

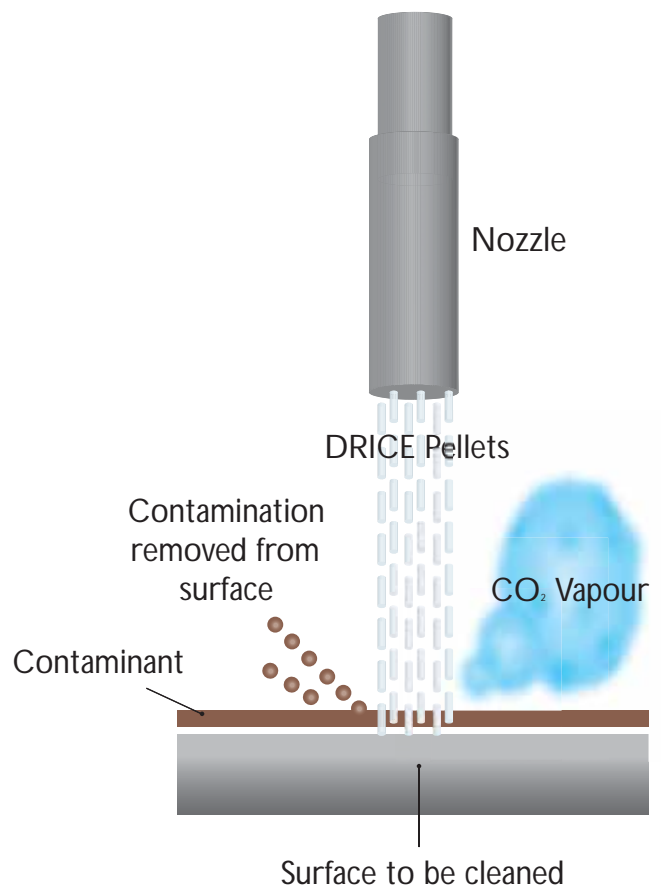
Dry ice blast cleaning is a non-abrasive, non-conductive cleaning process using 3mm dry ice pellets, known as DRICE. It is more efficient than traditional blast cleaning using steam, water, solvent, grit or beads because DRICE leaves no contaminated residues.

DRICE pellets are accelerated to supersonic speeds through a blasting gun onto the surface to be cleaned. The process significantly reduces downtime since you don't have to disassemble any machinery. Because DRICE cleaning is moistureless, it also removes the need for drying out before re-use.

How does it work?

Dry ice blasting features three unique actions which make the process especially effective:

- The initial force of the DRICE pellets impacting the surface provides the primary cleaning action, removing much of the contaminant without surface damage. This is known as **kinetic energy transfer**
- DRICE has a temperature of -78°C which causes the surface and contaminant to rapidly cool down and contract at different rates, thus weakening the bond between the two materials. This is known as creating a thermal differential or **micro-thermal shock**
- As the DRICE sublimates and converts to CO_2 vapour it expands between the surface and contaminant forcing the two apart. The CO_2 evaporates to the atmosphere and the contaminant falls to the floor. This is known as **reverse fracturing**



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What are the benefits of dry ice blast cleaning?

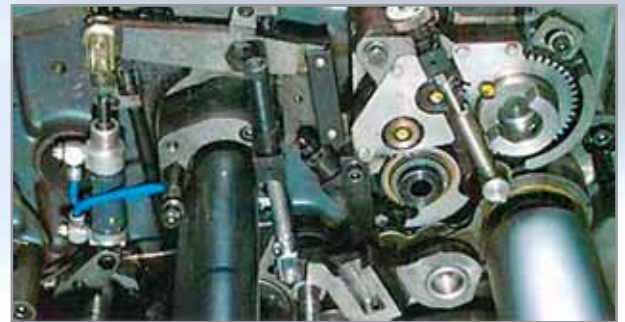
- Dry ice blast cleaning significantly reduces down time by eliminating the need to disassemble machinery
- Because DRICE cleaning is moistureless, there is no need for drying out before re-use
- It is bacteriostatic, which means it not only provides an effective cleaning mechanism but also a sterilisation process, making it particularly attractive in food and scientific applications
- It produces no secondary contaminant to be removed, as can often be the case with water and solvent-based processes.

Before



Photos courtesy of Cryogenesis (UK) Ltd

After



Where is it most commonly used?

Practically everywhere! See the list below for some of the applications:

Automotive	Cleaning of engine blocks, moulds and dies, spray booths
Brewing	Removal of fermentation residue from vats and vessels
Electrical	Cleaning of electrical motor housings, stators and windings, control panels, circuit breakers, substations and line insulators
Electronics	Removal of flux and resin build-up in PCB process equipment and curing ovens
Food	Cleaning of process equipment, conveyors, mixing vats, ovens, floors, moulds and extrusion dies
Foundries	Coreboxes, moulds, die-cast machines, mixers, hoppers, cooling fans
Local Authorities	Cleaning of drains, chewing gum removal, surface refurbishing of buildings and monuments
Marine	Removal of slime, algae and barnacles from aluminium and fibreglass hulls without damage Cleaning of engines and tanks
Paper	Removal of paper and wood pulp from processing machinery
Pharmaceuticals	Cleaning of reactors, mixers, storage vessels and tablet moulds
Plastics	Cleaning of moulds, extrusion dies, ovens and mixers
Printing	Removal of inks, coatings and paper-dust build up

How do I find out more?

BOC can put you in contact with a national blast cleaning contractor. Simply call our Customer Service Centre on 0800 111 333 for further information.

For more information call 0800 111 333 or visit:

www.bocindustrial.co.uk

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