



Dry Ice Cleaning - Cleaning Without Effluent

Dry ice blasting is a cleaning process, which uses solid carbon dioxide (CO₂) pellets (known as dry ice), to provide gentle, effluent free, impact cleaning.

Dry ice or CO₂ cleaning works by propelling rice size pellets of dry ice onto the surface to be cleaned. On impact, the cold temperature of the dry ice, causes the material to be removed to shrink and loose adhesion. When the dry ice penetrates the material to be removed, it impacts upon the warmer base material, and turns back into gas, thereby expanding and speeding up the removal.

Dry Ice Cleaning Benefits

Benefit #1 - Decreased Downtime

Typical cleaning procedures require that equipment be disassembled and moved to an assigned area for proper cleaning. That is not the case with dry ice blasting. Equipment can be cleaned in-place and at operating temperature in most situations. Because of that, many time-consuming, labour-intensive steps which were required with other methods can be eliminated including: Cool down, Disassembly, Transport to and from a dedicated cleaning area, Reassembly and Reheating time. Dry ice blasting can shorten the downtime for cleaning from days down to hours.

Benefit #2 - Faster and More Thorough Cleaning

With dry ice blast cleaning, a superior clean can be achieved while reducing hours when compared to manual cleaning. In addition, the CO₂ method cleans in crevices that can't be reached by hand.

Benefit #3 - Elimination of Equipment Damage

Dry ice blasting often eliminates equipment damage. Cleaning methods can have an aggressive and abrasive effect on the surface. They can actually remove part of the surface, changing the surface structure considerably. Dry ice is non-abrasive to the surfaces and does not change a surface's structure. It lifts the contaminants away.

Benefit #4 - Reduction or Elimination of Solvents

Dry ice blasting uses no solvents, but instead uses harmless CO₂ pellets. There are no issues pertaining to toxicity.

Benefit #5 - Reductions in Waste Disposal

With many cleaning methods, the cleaning agent becomes a secondary contaminant and must be disposed of as such. However, with dry ice blast cleaning the only waste created is the contaminant itself.

Benefit #6 - Increased Safety

Dry ice blasting pellets are non-toxic, non-hazardous and environmentally friendly.

Industrial Sectors

Dry ice cleaning can be used in many sectors, with particular benefits offered to the following industries:

- * Pharmaceuticals
- * Food Processing
- * Airlines/Aerospace
- * Automotive
- * Disaster Recovery
- * Electrical
- * Foundries
- * General Maintenance
- * Hazardous Waste
- * Historic Restoration
- * Marine
- * Mass Transit
- * Plastics
- * Printing/Plating
- * Pulp & Paper
- * Rubber
- * Utilities

Examples

The following photographs show a typical food industry application.



Ribbon mixer before Dry Ice cleaning



Ribbon mixer after Dry Ice cleaning

CIP and Hygienic Processing advise and assistance available 24/7



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Processing Applications

Conveyors, Dryers, Molds
Mixing equipment - uncooked residues
Packaging equipment - paper dust
Freezers
Glue heads - glue residues
Ovens - baked on residues
Mixing equipment
Dry ice blast cleaning can be used to clean physical plants:
Ventilating equipment
Electric motors
Floors, Ceilings, Walls
Transportation equipment
Storage equipment

Pharmaceutical Applications

Stainless steel containers
Reactors
Mixers
Tablet molds
Separators

Automotive

Robotics, Body panel assembly
Manfans, Spray booths
Coreboxes, Permanent molds
Tire molds, Seats and gasket molds
Sealing system molds
Engine blocks and accessories
Pistons, Coils, Cylinder heads
Alloy wheels
Sensors and computer components
Urethanes and Plastic Molding
Fire wall, Acoustic mats
Dashboards, Door panels
Seats and carpets

General Maintenance

Manfans, Tools, Assembly lines
Extruders, Production tools
Oven bands, Mixers, Hoppers
Ovens, Hydraulic power equipment

Other Applications

For a more applications please visit our website.

DryIce Product Range

The following table details the standard DryIce product range. In addition we offer a custom design and manufacture service for special requirements.



Machine Comparison			
	IS-35	IS-35H	IS-60
Dimensions			
Width (mm)	500	500	550
Length (mm)	600	600	650
Height (mm)	825	825	1025
Empty Weight (Kg)	28	28	34
Full Weight (Kg)	63	63	94
Supply Air			
Min Bar	4	4	4
Max Bar	16	16	16
Blasting Pressure			
Min Bar	4	4	4
Max Bar	10	16	16
Airflow			
Min m ³ /min	3.4	3.4	4
Max m ³ /min	7	7.6	7.6
Compressor Required	25 kW	37kW	37 kW
Dry Ice Consumption			
Capacity (Kg)	35 (3mm)	35 (3mm)	60 (3mm)
Min Kg/Hr	25	25	25
Max Kg/hr	75	75	75
Accessories			
Hose Length (m)	5	7	7
Blasting Gun Assembly	Incl.	Incl.	Incl.
Nozzle 1 (10 Bar)	250 mm AL	250 mm AL	250 mm AL
Nozzle 2 (10 Bar)	N/A	250 mm CU	250 mm CU
Nozzle 3 (16 Bar)	N/A	250 mm AL	250 mm AL

CIPProcess Introduction

The CIPProcess organisation is run by a team of professional engineers who have been involved in supplying, designing and developing different cleaning technologies for nearly 30 years. Our ranges include a number of different types of cleaning technologies, to allow us to recommend the cleaning method which is best for your specific requirement.

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