

# *Dry Ice Cleaning in the Foundry Industry*



 **Cold Jet**<sup>®</sup>  
*the force of nature*

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**Cold Jet**<sup>®</sup>

*the force of nature*



*Leading the way in dry ice innovation  
since 1986*

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*the force of nature*

# Less downtime. High quality products.

## Permanent mold, core boxes, die cast cleaning and surface preparation with dry ice MicroParticles

Welcome to Cold Jet!

Innovative foundries are constantly looking for ways to increase the productivity of their equipment and the quality of their parts, while also being more reactive to customer needs.

Die cleaning remains a critical component for the production of quality products in foundries. Deposits on core box vents or openings and cleaning of die cast tooling can cause a number of problems. To ensure the quality of products, foundries must have a process to regularly and reliably remove residues of the cold-box binder from the core boxes and permanent molds.

Traditional cleaning methods that are well known on the market like sand/soda/water blasting, chemical cleaning and hand tools generate delays in mold cleaning and cause longer downtimes. Cleaning with Cold Jet dry ice blasting is a more effective technology compared to the traditional methods. As an example, cleaning core boxes is often done with our unique dry ice MicroParticle technology, due to the very complex geometries that require a precise and consistent clean that only Cold Jet dry ice cleaning can provide. We offer a significant improvement in cleaning times (up to 60%), as well as a reduction of damage to equipment and resulting scrap product. It allows for a nonconductive, in-place method to clean parts.

Today, technology goes even further by providing robotic automation for a wide range of applications, including cleaning equipment, parts and surface preparation. With the integration of an automated dry ice MicroParticle blasting system within the existing production line, manufacturing operations are seeing further reductions in downtime, improvements in part quality, as well as a quicker ROI. Integrated cleaning systems are cost effective solutions with a superior cleaning performance and minimal space requirements. They provide continuous, uninterrupted and completely automated operation. Cold Jet provides systems which combine dry ice production and dry ice blasting into one system (Combi System), which is able to integrate with a robot.

The custom-built, integrated Combi System helps to improve quality and lower operating costs. It enables customers to focus on their production needs on a 24/7 basis and saves them a lot of time, trouble and money. Intelligent dry ice cleaning and production systems communicate with the customer via Cold Jet Connect, which enables the monitoring, diagnosing, and implementation of corrective actions and maintenance programs, and enables them to track all information and settings that are required for a modern foundry production facility.

We look forward to assisting you in your next project.

Yours sincerely,



Dietmar Juchmes



Senior Vice President  
Commercial Director EMEA



# We are Cold Jet

**The global experts in environmentally sustainable cleaning, surface preparation and cold chain management solutions.**

## **Dry Ice Cleaning**

Cold Jet has developed the most efficient dry ice blast cleaning technology available. Our environmentally responsible systems are used for cleaning, surface preparation and parts finishing. Designed with unrivaled innovation, unmatched performance and based on years of customer input, our systems let you clean better and with less effort, thus increasing productivity and profit.

## **Dry Ice Production**

Our dry ice manufacturing technology offers the greatest level of reliability and the highest quality of extruded dry ice. Dry ice production systems are fully automated, provide the best output to footprint ratio, offer dry ice on demand and pass UL, USDA, FDA and CE standards.

## **Integrated Dry Ice Cleaning**

Our dry ice cleaning systems are ideal for production integration. Cold Jet's integrated systems combine a pelletizer unit with one or more blasting system for continuous or fully automated use. They are custom-engineered to meet our customer's specific requirements.

## **Distinct Solutions in Diverse Industries**

- Aerospace
- Automotive
- Composites
- Contract Cleaning
- Disaster Remediation
- Electric Motor
- Food & Beverage
- Foundry & Metal Forming
- General Maintenance
- Historic Restoration
- Oil & Gas
- Medical Device Manufacturing
- Packaging
- Plastics
- Power Generation
- Printing
- Restoration
- Textile
- Transportation

*the force of nature*

## Local Company with a Global Presence

We are local. Everywhere. With 13 service centers located in 10 countries - and with the largest install base of human technical resources - when you need us, we will be there. The Cold Jet customer support team is available 24/7 to provide the personal service your business demands.

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Columbia

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Russia

Bulgaria  
Iberia  
Serbia

Czech Republic  
Italy  
Slovakia

Finland  
Ireland  
Slovenia

Great Britain  
Norway  
Sweden

Greece  
Romania  
Turkey

#### Asia Pacific

Australia  
New Zealand

India  
Philippines

Indonesia  
Thailand

Japan  
Vietnam

Malaysia

Singapore

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## The Cold Jet Advantage

Since 1986, Cold Jet has been the leader in dry ice technology and has set the industry standards for product development. We manufacture the most reliable, durable and technologically advanced dry ice cleaning machines on the market.

### Cold Jet CONNECT™

Cold Jet, with its Industrial Internet of Things (IIoT) solution, has designed smart dry ice blasting machines that monitor, diagnose and implement corrective action and maintenance programs.

Get the right information at the right time, whether it is predictive maintenance, machines exchanging data or machines adapting their behavior to changing operating conditions.

The ability to remotely monitor and track real time parameters improves the manufacturing process, saves operational costs and improves machine serviceability.

#### **Predictive Maintenance**

Monitoring the health of equipment and predicting when maintenance is needed is possible via Cold Jet CONNECT.

#### **Process Diagnosis & Tracking**

Irregularities are detected in early stages, so corrective actions can be made prior to negative effects on production.

#### **Preventative Maintenance**

Production downtime and costly repairs are avoided when machine conditions are monitored and operators are alerted of negative conditions.

#### **Energy Optimization**

Energy usage is tracked and an alert is sent when the machine exceeds normal operation or sits idle.

#### **Machine Utilization**

Maximize factory productivity by monitoring production levels and performance of machines.

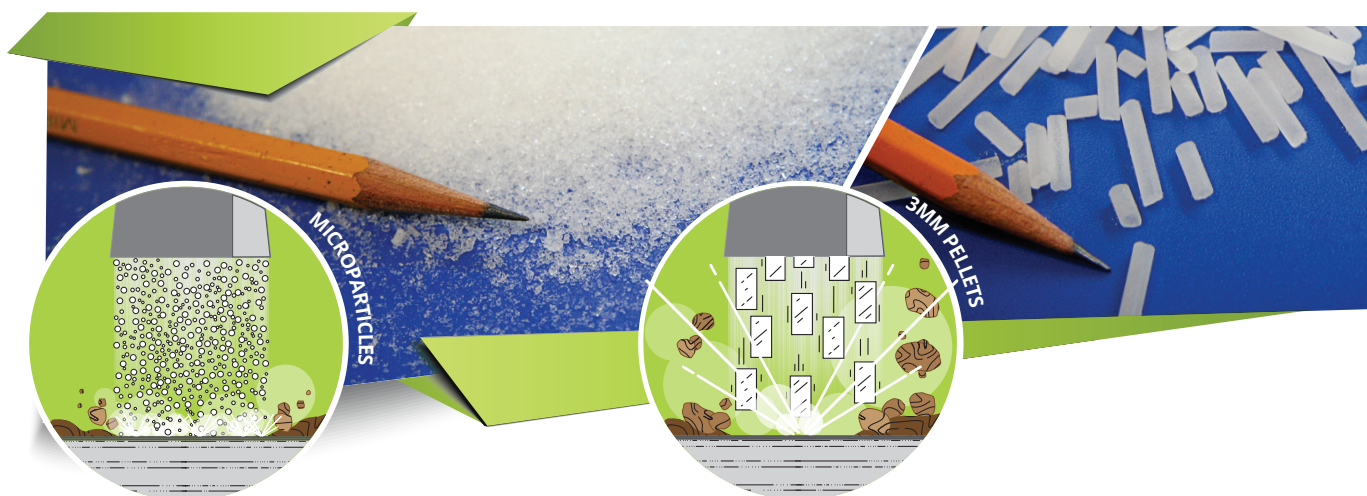




## Dry Ice MicroParticles

Cold Jet's patented MicroParticle technology shaves dry ice into sugar-sized particles. This leads to more media striking the surface per second than with pellets, which results in an increased coverage area and more particle strikes per square inch, resulting in a faster and more even clean.

The particles are less aggressive than pellets and are delicate enough to thoroughly clean sensitive materials without damaging the surface. The particles can enter the hardest to reach places that pellets and conventional methods cannot.



## Advanced Nozzle Performance

*Cold Jet's Patented Nozzle Technology for Superior Cleaning Results*

Cold Jet has the widest selection of nozzles with advanced performance. With patented MERN (Multiple Expansion Reflection Nozzle) technology and variable fragmenting technology, you have the power to control the aggression of a nozzle for a full range of performance and maximum effectiveness.

### Variable Fragmenting Technology

#### **0 = PELLET**

Maximum aggression for removing the toughest contaminants

#### **1 = MEDIUM FRAGMENTING**

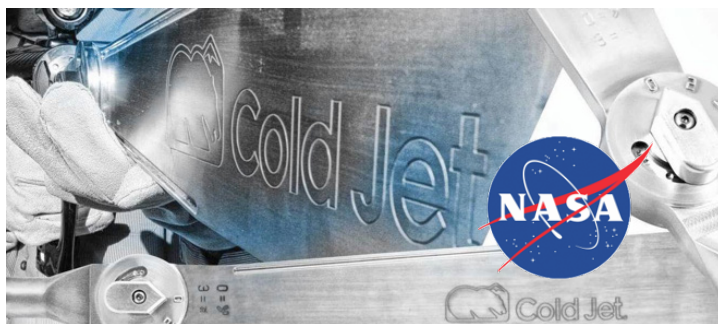
Aggression with control

#### **2 = FINE FRAGMENTING**

Power and precision

#### **3 = EXTRA FINE FRAGMENTING**

Gentle cleaning on delicate substrates



### MERN: Multiple Expansion Reflection Nozzle

The patented MERN nozzle makes it possible to define the size of the pellets during blast cleaning. Whether pellets or fine particles – you select the correct settings during the cleaning process without any time delay. A technology used in similar form in the aviation industry to achieve optimum energy efficiency with maximum performance enhancement. MERN ensures full pellet integrity throughout the nozzle and full, even blast coverage.

## Cold Jet Innovation

Innovation at Cold Jet is driven by our customers increasing demands for efficient, environmentally responsible, safe and controllable dry ice blasting machines.

### **Enhanced SureFlow System**

Allows for consistent and continuous blasting

### **Sealed Lid**

Eliminates moisture and clumping of dry ice

### **Stainless Steel Insulated, Isolated Hopper**

Reduces sublimation and ensures reliable feed rate

### **Tilt-out Hopper**

An automatic tilt-out hopper to quickly and easily unload and preserve unused dry ice



### **Hopper Vibrators**

Keeps dry ice fluidized

### **Advanced Radial Feeding System**

Aerodynamic loading reduces wear on pads and rotor



## SureFlow System

Cold Jet's patented SureFlow System ensures uninterrupted cleaning performance by preventing clogging and pellet sublimation. Particle integrity is maintained throughout the blasting process, allowing for maximum performance. The components that make up the SureFlow System are:

- Isolated and insulated hopper
- Multi-layer insulation (MLI)
- Radial feeder
- Sealed lid
- Advanced agitation technology

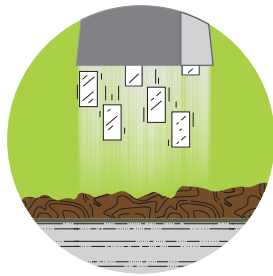


# What is Dry Ice Cleaning?

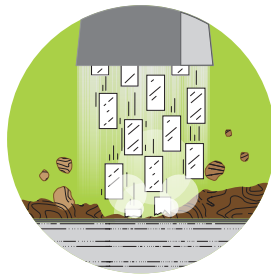
## Environmentally Responsible Cleaning & Surface Preparation

### How it Works

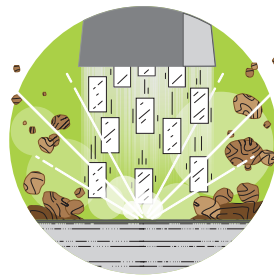
Dry ice cleaning is similar to sand, bead and soda blasting in that it prepares and cleans surfaces using a media accelerated in a pressurized air stream. It differs in that dry ice cleaning uses solid CO<sub>2</sub> pellets or MicroParticles, which are blasted at supersonic speeds and sublime on impact, lifting dirt and contaminants off the underlying substrate.



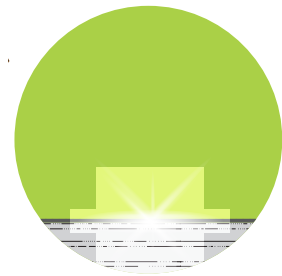
DRY ICE IS ACCELERATED BY COMPRESSED AIR THROUGH A NOZZLE AT SUPERSONIC SPEEDS.



THE TEMPERATURE (-109°F) OF THE DRY ICE CAUSES THERMODYNAMIC SHOCK. THIS HELPS BREAK THE BOND BETWEEN THE SURFACE AND THE CONTAMINANT.



ONCE THE DRY ICE COLLIDES WITH THE SURFACE, IT SUBLIMATES - CAUSING A MINI CO<sub>2</sub> EXPLOSION, LIFTING AWAY THE CONTAMINANT.



BECAUSE DRY ICE IS NON-ABRASIVE AND TURNS TO GAS, YOU ARE LEFT ONLY WITH A CLEAN SURFACE - NO SECONDARY WASTE.

### Why it's Better

The unique characteristics of dry ice make it the perfect cleaning media. Dry ice is non-abrasive, non-conductive and will not damage surfaces or equipment. It sublimates on impact, leaving behind no secondary waste. It is non-toxic and safe for employees.

These attributes make dry ice cleaning an efficient, cost effective and environmentally responsible cleaning solution.

### Dry Ice Cleaning is Effective & Safe

Dry ice is made of reclaimed CO<sub>2</sub> and does not produce more CO<sub>2</sub> or add additional greenhouse gases to the atmosphere. The EPA, FDA and USDA approved media does not release harmful gases or generate secondary waste. It is safe, nontoxic and reduces or eliminates employee exposure to the use of dangerous chemical cleaning agents. Dry ice cleaning is truly and completely environmentally responsible.



## *Foundry Industry Overview*

### **The Cold Jet Difference**

Dry ice environmental cleaning and surface preparation systems allow for cleaning tools online, while they are at operating temperatures, thus increasing machine uptime, mold asset life and profitability. Dry ice is proven to clean molds better, while reducing cleaning time up to 60% without causing mold wear.



MWS

FORMING YOUR SUCCESS

## Reduce Cleaning Time = Less Downtime



A major issue for the foundry and forging industries is the downtime caused when cleaning permanent aluminum molds, core box vents, semi-solid castings and die casting machines. Typical manual cleaning methods require cool down, disassembly, unproductive hours of messy hand cleaning or bead blast cleaning and then reassembly. In addition, most traditional cleaning methods are not fully effective and often result in damage to the part or equipment.

### Proven Applications

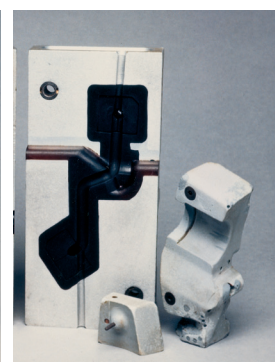
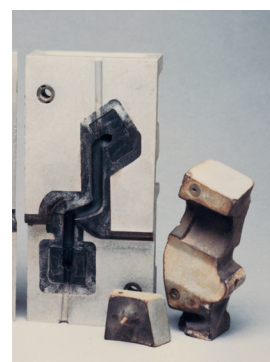
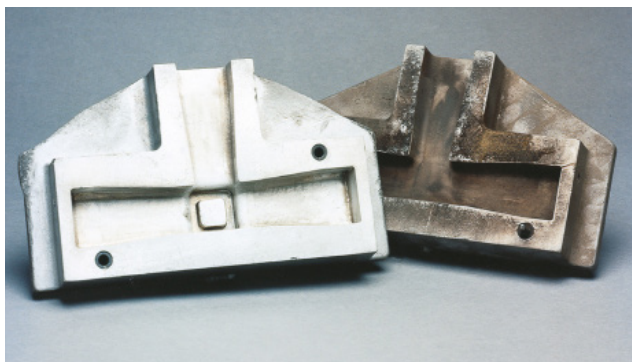
Permanent Aluminum Mold  
Semi-solid Casting / Forging  
Core Box and Vent  
Die Cast Tooling  
Shell Core Mold

Refractory Coating  
Remove Resins and Release Agents  
Conveyor  
General Part Cleaning  
General Equipment and Facility

Dry ice cleaning offers significant improvement in cleaning times (up to 60%) as well as reduction of damage to equipment and resulting scrap product. Dry ice blast cleaning is a non-conductive, in-place method to clean parts and even touch-up cleaning is safe and easy.

### Key Benefits

*Improve product quality | Reduce scrap | Reduce production downtime | Reduce cleaning time and labor costs | Clean hot and in-place; eliminate mold disassembly | Non-abrasive; no damage to product or equipment | Environmentally responsible; no secondary waste*



## *Permanent Aluminum Mold Cleaning*

One of the obstacles for permanent aluminum molders are coating irregularities and resin buildup, which may lead to product quality defects and ultimately scrap. Uneven refractory coating can affect end product quality and production time.

With Cold Jet's dry ice cleaning, you can completely remove refractory coating and residual material without damaging mold vents and rounding mold edges. You can clean molds in the machine at processing temperature without causing mold wear – thus increasing production capacity and improving product quality.



## *Core Box and Vent Cleaning*

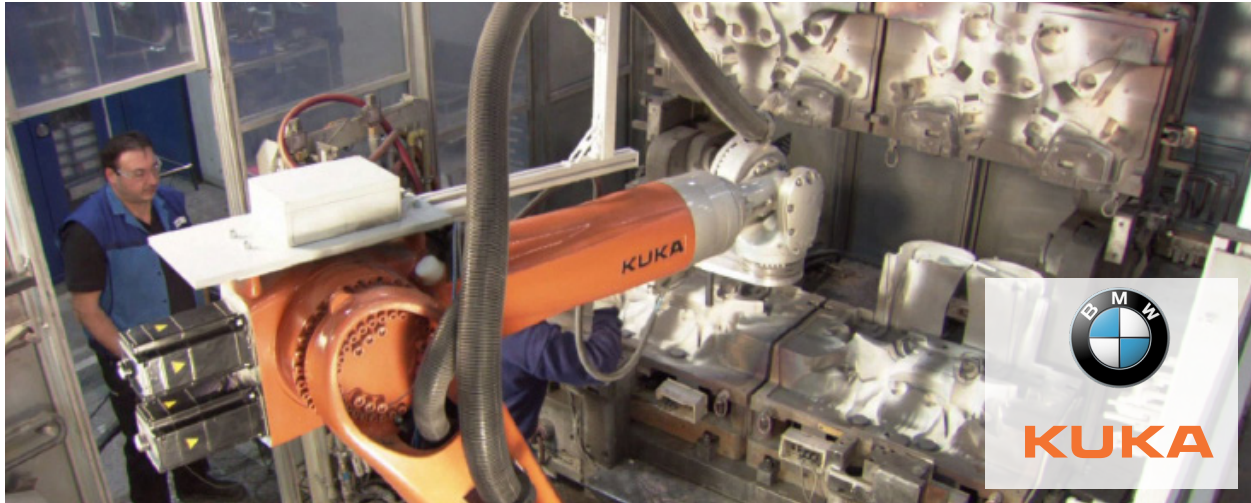
Core boxes have delicate screen and slot vents for catalytic gas or heat to enter and bind the resin to the sand (from which the core is usually made). Buildup of resin and sand on vents prevents core material from solidifying, and often cause vent clogging. Traditional cleaning methods are very slow, ineffective, can damage tooling and destroy vents on the core boxes.

With Cold Jet's environmentally responsible cleaning systems, you can reduce cleaning time up to 60% while also increasing productivity and product quality. As a non-abrasive method, it reduces screen and slot vent damage. Dry ice blasting offers an in-place, online, quick and effective way to clean without damaging expensive tooling.



learn more at [coldjet.com](http://coldjet.com)

## Automated Die Cleaning



Cold Jet's environmentally responsible systems were developed to improve quality and reduce operating costs for foundries. Cold Jet provides systems which combine dry ice production and dry ice blasting into one machine (Combi System), which is able to integrate with a robot.

Our automated systems eliminate the need for manual cleaning and surface preparation, thus improving part quality, increasing productivity and lowering cost. With the integration of an automated dry ice blasting system within the existing production line, you can reduce downtime and improve part quality. Integrated cleaning systems are cost effective solutions with superior cleaning performance and minimal space requirements. They provide continuous, uninterrupted and completely automated operations.





## Forging

When using a closed or open die forging method of shaping a hot metal, it is crucial to clean the top and bottom dies. In forging technology, the process of removing scale, oxides or lubricant from the surface of the forging is very difficult. Effectively removing lubricant residue from the workpiece is an important factor for product quality and process efficiency. Preventing buildup of lubricant residue in the die cavity prevents problems, such as forging underfill.

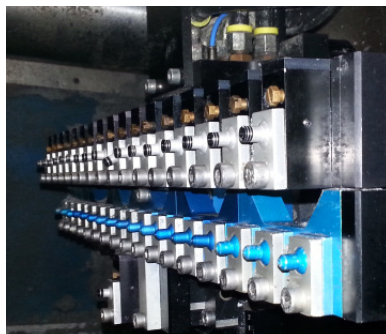
Dry ice cleaning allows you to clean in-place, without disassembly. Hot dies can be directly cleaned using dry ice without cooling, which provide significant improvement in cleaning time while also minimizing damage to the equipment.



## General Maintenance

Dirt, soot, grease and oil buildup in production facilities causes machinery to function improperly and can create an unsafe working environment. Effective cleaning extends the life of electric motors, reducing or eliminating costly repair, replacement or rental programs.

Cold Jet dry ice blasting equipment provides a quick, safe, non-toxic and economical cleaning solution for facilities, industrial equipment, machinery, machine tools and assembly line equipment. Any item that is part of a production process can be cleaned online and without requiring cool down. Cold Jet's systems can clean on and around hydraulic power units and electrical power and distribution components. Additionally, adhesives and oil and grease buildup are easily removed with dry ice blasting.



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## *Industry Leaders Benefiting from Cold Jet* **Providing Global Satisfaction Since 1986**

Cold Jet's cutting-edge design and innovation of dry ice blasting and production technology has led the way for thousands of customers worldwide to realize an impressive return on investment, as well as a substantial increase in productivity.

## Join the Industry Leaders

### Case study sampling

#### MWS Friedrichshafen

##### PROBLEM

MWS is an aluminum casting and CNC machining specialist that was created from a merger between well-established manufacturing companies. With six locations across Germany, Austria and Slovakia, MWS manufactures complex, precise, ready-to-install products in all standard aluminum alloys. The selection of cast aluminum products ranges from highly complex, manually manufactured, made-to-order items to products produced in fully automated manufacturing lines.

MWS Friedrichshafen specializes in aluminum sand casting. One main concern of MWS was keeping core boxes clean. It was crucial in keeping up both quality and integrity. The fundamental importance for product quality was reliable removal of residues of the cold-box binder from the core boxes. Due to the very complex geometries of core boxes, they require a precise and consistent cleaning method.

##### SOLUTION

Aero 40 Foundry Edition

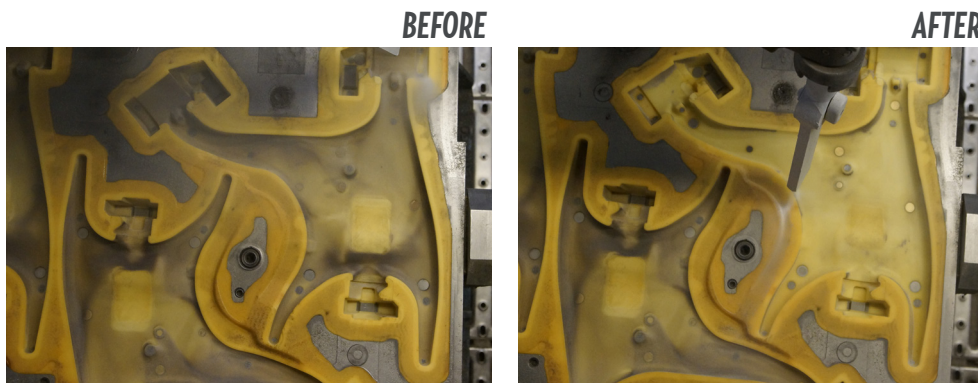


##### RESULTS

- Reduced cleaning time
- Reduced scrap
- Low dry ice and compressed air consumption resulted in a better and more efficient clean

*"The flexible, single-hose system and the 360 degree turning radius of the Aero 40 provided a significant improvement. Due to these possibilities, we were able to significantly reduce our dry ice and compressed air consumption from 6 to 4 bar (87 to 58 psi) and tune the system exactly to our requirements. This has greatly increased our efficiency with core box cleaning."*

- Heiko Gläsle, Foundry Manager at MWS Friedrichshafen



## KS Aluminum - Technologie GmbH



### PROBLEM

KSPG AG is the parent company of Rheinmetall's Automotive sector. According to its strategic focus, the company is divided into divisions: Hardparts (including KS Aluminium-Technologie GmbH), Mechatronics and Motor Service. The engineering and casting of innovative aluminum cylinder crankcases has evolved into a widely demanded core capability of KS Aluminium-Technologie GmbH (KS) in its role as direct development partner in the automotive industry. The company is among the leading producers of such cylinder blocks and a market leader in the premium segment for these products.

In 1995, the company began producing dry ice for dry ice cleaning because it is a gentle cleaning method. Sandblasting was too abrasive and difficult to handle. In the beginning, KS used a pelletizer from a Cold Jet competitor that was an outdated technology and the cost of CO<sub>2</sub> consumption was too high. An additional problem was the cost of repair as the pelletizer was very susceptible to interference.

### SOLUTION

Cold Jet P325 Pelletizer



### RESULTS

- User-friendly, reliable and efficient dry ice production
- Production of high density dry ice
- Less scrap ice, a longer shelf life leads to higher cost savings
- Reduce maintenance time, increase product lifetime
- Reduce dry ice consumption during cleaning by using high quality dry ice

*"We work in different shifts so the pelletizer will be operated by several employees. The existing pelletizer was not user-friendly and an error by the operator or possible damage was inevitable. We no longer have this problem with the new, easy to use pelletizer. This is a very important point in practice."*

*- Werner Fiedler, KS Aluminum-Technologie GmbH.*

A close-up photograph of a dry ice blasting nozzle being used to clean a dark, textured surface. The nozzle is positioned horizontally, and a fine spray of white particles is being directed towards the surface. The background is dark and out of focus, showing some greenery. The image is overlaid with a white text box and decorative geometric shapes in blue and lime green.

# *Dry Ice Cleaning Systems*

## **MicroParticle & Pellet**

Cold Jet dry ice blasting systems provide a superior clean. Period. Designed with unrivaled innovation and unmatched performance, based on years of customer input, Cold Jet dry ice blasting systems let you clean better with less effort, increasing productivity and profit.



# Dry Ice Cleaning Systems

## MicroParticle Systems

Cold Jet's patented MicroParticle technology shaves dry ice into sugar-sized particles. By shaving dry ice into MicroParticles, more media strikes the surface per second than traditional methods, which results in an increased coverage area and more particle strikes per square inch. This leads to a faster and more even clean. The particles are less aggressive than pellets and are delicate enough to thoroughly clean sensitive materials without damaging the surface. The particles can enter the hardest-to-reach places that pellets and conventional methods cannot.



### *i<sup>3</sup> MicroClean®*

#### *Unique Features:*

- Dry Ice Capacity: 9,1 kg
- Feed Rate: 0-0,6 kg/min
- Blast Pressure: 1,4-9,7 bar
- Accepts pellets, nuggets or block with patented shaving technology
- Designed for absolute precision
- Easy to maintain with removable panel design
- Table top footprint, includes cart for mobility



*\*Pellet & MicroParticle System*

### *SDI Select™ 60*

#### *Unique Features:*

- Dry Ice Capacity: 27,2 kg
- Feed Rate: 0-2,7 kg/min
- Blast Pressure: 1,4-17,2 bar
- Uses any form of dry ice
- Bypass for full 3mm pellet performance
- Clean from as low as 1,4m<sup>3</sup>/min, using 1/3 of the compressed air and reducing noise levels and air usage
- Increase blast pressure up to 17,2 bar to clean the most stubborn contaminants



## Dry Ice Cleaning Systems Pellet Blasting Systems

### Performance Series

The Cold Jet Performance Series line of dry ice cleaning machines provides unparalleled patented technology, ergonomics and safety in a user-friendly package, delivering a full range of reliable performance from gentle cleaning at 1,4 bar up to aggressive blasting at 20,7 bar.



Aero 40FP



Aero 80FP

- Dry Ice Capacity: up to 36,4 kg
- Feed Rate Range: 0-3,2 kg/min
- Blast Pressure Range: 1,4-20,7 bar
- Full Range of Pressure
- Advanced SureFlow System
  - Reliable Pellet Flow
  - Insulated Hopper
- Most Advanced Nozzles
- Easy-to-Maintain
- Safe Operation
- Rugged and Mobile

### Industrial Series

The IceTech Industrial Series line of dry ice cleaning machines provides the perfect universal dry ice blasting experience for many industrial applications. With advanced features and an operational versatility, the industrial series is suitable both for lighter applications and for extremely heavy duty cleaning.



Elite 20



Xcel 6

- Dry Ice Capacity: up to 20 kg
- Feed Rate: up to 1,7 kg/min
- Blast Pressure: 2-16 bar
- Stainless Steel Body
- SureFlow System
- User-Friendly Control Panel
- Full Range of Air Pressure
- Quick Disconnects

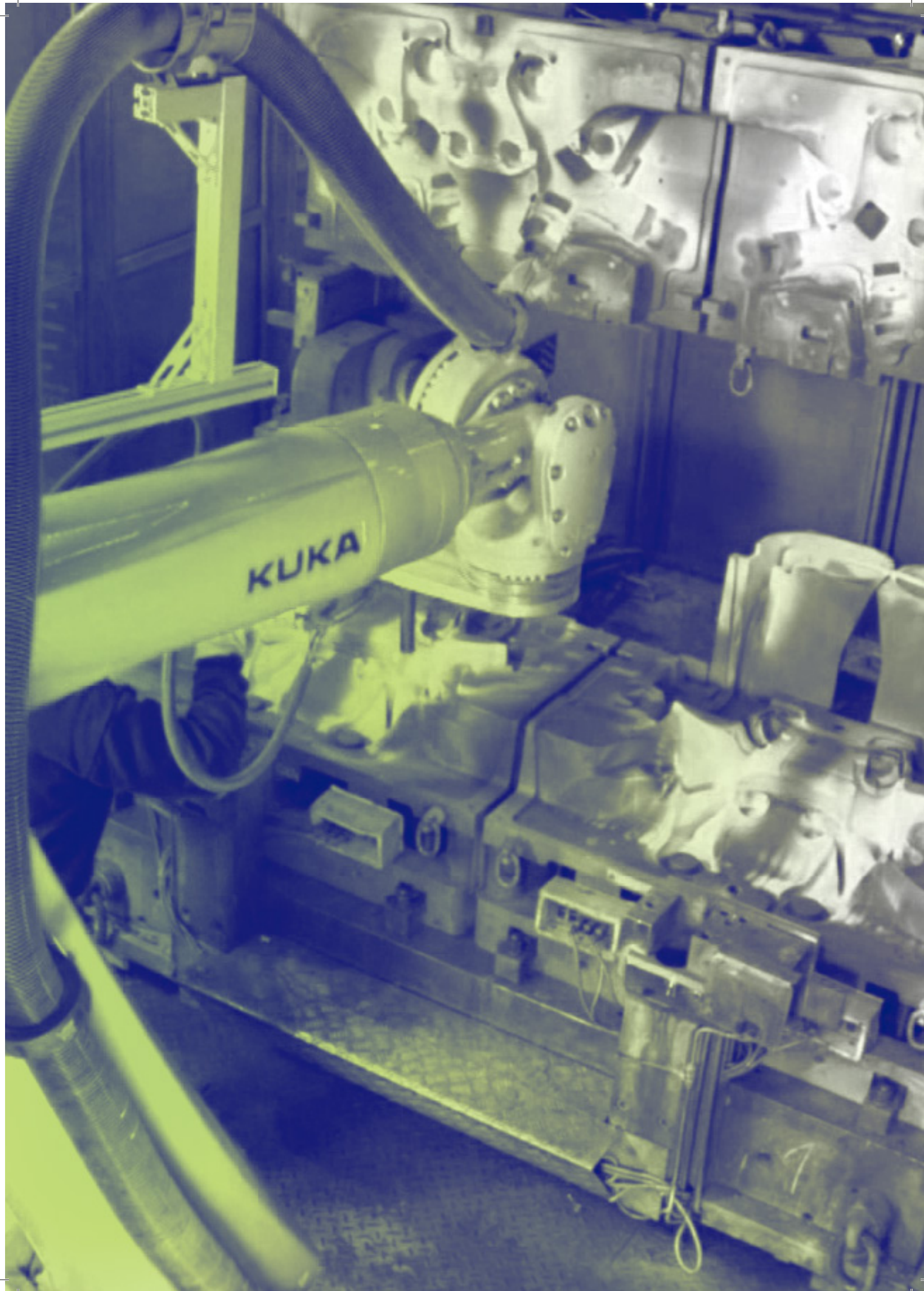
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# *Integrated Cleaning Systems*

## **COMBI Systems & Integrators**

Integrated cleaning systems are cost effective solutions with superior cleaning performance and minimal space requirements. Integrated systems provide continuous, uninterrupted and completely automated operations. Each Cold Jet integrated system is custom engineered to meet specific customer requirements.





# Integrated Cleaning Systems

## COMBI Systems



**COMBI 120H**  
up to 120 kg/hr

**COMBI 350H**  
up to 350 kg/hr

Fully automatic machine for dry ice production and dry ice blasting

### Several Functions in One:

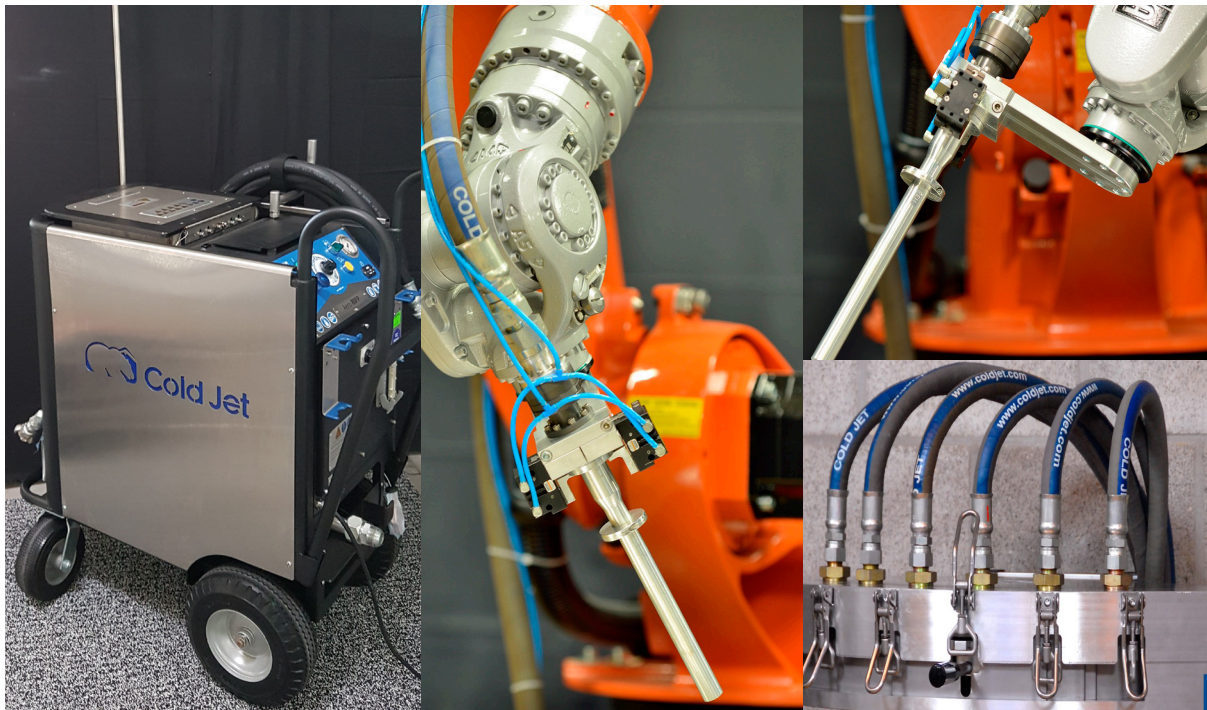
- Pelletizer unit
- Dry ice blasting unit (one unit for COMBI 120H & two units for COMBI 350H)
- Automated system ensures the right pellet size
- Distribution system ensures availability of pellets for manual cleaning when needed
- I/O Box for integration in plant control units and automation process
- Optional control for two separate distribution systems to facilitate the connection of several nozzles
- Optional system for heating blasting air to avoid condensation on nozzles
- Optional control for up to four heated nozzles (COMBI 350H only)

### Unique Features:

- Stainless steel enclosure with noise level below 75 db(A) protects machine components
  - Fully automated, one-button operation
- Sub Cooling Technology increases CO<sub>2</sub> utilization
  - 15" multi touch built-in control panel
  - Quick startup reduces downtime and loss of valuable CO<sub>2</sub>
- Shutdown function removes dry ice from the hopper
- Cold Jet *CONNECT* - remote support to control and maintain the system
- Compact footprint

## Integrated Cleaning Systems

**Standardized interface to communicate with a robot or installed in a blasting cabinet**



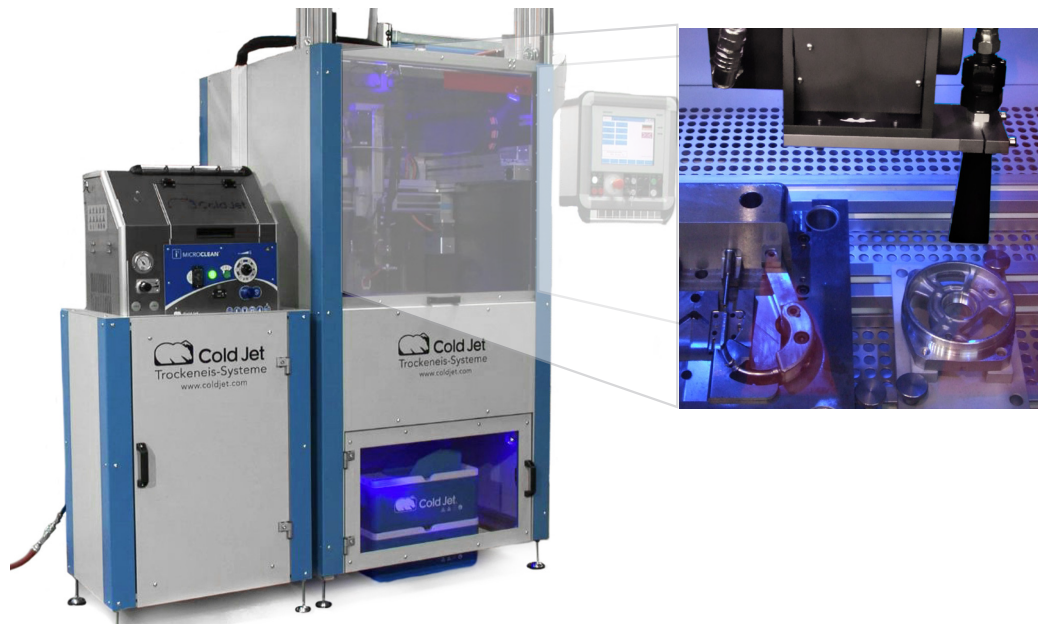
*Semi-automatic machine for dry ice blasting connected to robot*

### Unique Features:

- Operational automated blasting pressure from 1,2 up to 20,7 bar
- Blasting with dry ice and air or only with air
- Emergency-off loop (24VDC loop control)
- The Aero interface takes over the connection between Aero blasting machine and program control panel
- Hopper filling level sensor installed in the storage tank indicates when a certain level is reached, including signal light; automated tilt out hopper empty option
- The control system guarantees safety communication and control during the blasting process

# Integrated Cleaning Systems

## i<sup>3</sup> MicroClean Complete Package



*MicroParticle Integration – Less air, less ice, more coverage*

### *Unique Features:*

- Cold Jet's unique shaved dry ice MicroParticle technology provides a thorough, yet delicate, clean for many applications
- i<sup>3</sup> MicroClean DX accepts pellets, nuggets or block with patented shaving technology
- Designed for absolute precision
- Easy-to-maintain with removable panel design

### *Integration Options:*

- Interface connector with 24 pin (Harting) for connection to remote system with the following functions: blasting on/off; Air on/off; Dry ice consumption; emergency on/off
- Electronic dry ice block consumption control signal
- Optical and/or acoustic signal/display
- Lockable key to prevent unauthorized usage
- Blasting hose length options
- 1 to 2 flow divider including hose quick connection 3/8", 3E1198
- CO<sub>2</sub> detection system – stationary with relay output

## Integrated Cleaning Systems Aero Foundry "Additive" Solution



If desired or necessary, a second blast media can be added to the Cold Jet Foundry Edition. Stubborn residues or surfaces which need to be roughened regularly can be easily cleaned with only one device if you use a dry ice cleaning system in conjunction with additives. In comparison to conventional methods, savings up to 80% are not uncommon with this combined system. Another advantage of dry ice blasting with additives compared to blasting with additives only is the improved environmental impact due to the reduced consumption of additives and less noise from the blast pressure. Due to the modular design of Cold Jet cleaning systems, an additive solution can be included in all Aero pellet systems.

### Package Description:

The Cold Jet Additive Solution "CJ-CP33" includes:

- 15 mm round nozzle, including injection unit
- Optional 40 mm flat nozzle, including a Cold Jet 3/4" applicator connector fitting
- CJ-CP33 storage and feeder tank with wheels and setting options
- 6 m additive hose including 10 m 3/4" air hose and connectors



learn more at [coldjet.com](http://coldjet.com)

## Dry Ice Production Systems



### Dry Ice Production Hub

up to 120 kg/hr | 265 lbs/hr OR up to 350 kg/hr | 772 lbs/hr

The Dry Ice Production Hub is the PR120H or PR350H pelletizer integrated with a 3m/10ft High Cube ISO Transportable Container, capable of producing up to 120 kg/265 lbs or 350 kg/772 lbs of dry ice pellets per hour. The Dry Ice Production Hub is mobile and enables easy setup and handling of dry ice production. It is ready to use by supplying electrical power and liquid CO<sub>2</sub>. As a mobile solution, it allows dry ice production in various facilities and in rugged, tough environments. With low ownership and maintenance costs, you can supply fresh, high quality dry ice on demand.



*the force of nature*

## World-Class Customer Service

**Available when you need us.**



*Our Customer Service team is always ready to help keep your critical blasting and production equipment up and running.*

The Cold Jet customer support team of technicians is available 24 hours a day, 7 days a week, providing the personal service that your business demands.

We are local. Everywhere. With service centers around the globe, our technicians are always within reach. Cold Jet has 13 service centers located in 10 countries around the world and the largest install base of human technical resources. When you need us, we will be there.

Our services range from answering your technical support questions and helping you find the right accessories for your unique cleaning application to assisting with spare parts orders and providing preventative maintenance options.

*No other dry ice blasting company offers you this level of customer service:*

- Global Service Centers
- Troubleshooting Support
- 24-hours a day / 7-days a week Technical Support
  - Europe +32 (0) 13 53 96 55
  - North America & Canada +1 800-777-9101
  - Outside North America +1-513-576-8981
- Preventative Maintenance Inspections
- Project Management
- Installation and Training
- Spare Parts and Accessories



*learn more at [coldjet.com](http://coldjet.com)*

*NOTES*

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