



# Coatings & Repairs

## Get a competitive edge

Overcome delays, maximise uptime and improve productivity and profitability – no matter what the world brings.



Find out more at [msi-viking.com](http://msi-viking.com)  
864.433.9771

# Unlock the limitless possibilities of cold spray technology for your factory floor, to tackle any emerging or ongoing challenges.

With Titomic's fully customisable low and medium pressure cold spray systems, it's never been easier, faster or more profitable to restore and coat metals and temperature-sensitive materials like glass, ceramics and plastics – without making your existing systems obsolete.

## How it works

Low and medium pressure cold spray technology uses supersonic gas to accelerate metal particles and build up strong layers of specialty metals – without any unwanted heat effects.

In this way, it's possible to restore parts and create coatings with unparalleled thickness, adhesion, density, conductivity and corrosion resistance. So you can maximise your uptime, output and productivity amidst increasingly complex challenges.

## See what's possible:

- Low process temperature prevents part deformation, structural changes, mechanical and thermal stresses
- Localised spraying jet provides greater accuracy
- Restores thin wall parts where other methods fail
- High adhesion: 30-60 MPa
- Low porosity: < 1 %



Spray metal within 10 seconds



No need to pre-treat



Rapid material build-up



Manual and automated spraying



Easy to move between worksites



Full colour touchscreen control



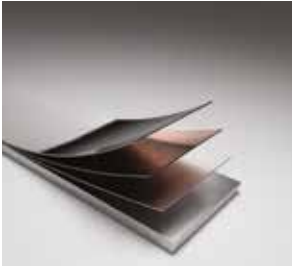
Directly machinable





## Common applications

Titomic's cold spray systems integrate advanced powder feeders to easily and rapidly apply thinner coatings in almost any application:



### RADIATION SHIELDING

Unlock a reliable, enduring, lightweight and cost-effective alternative to prohibitively expensive radiation-hardened electronics.



### ENERGY

Create solar panel componentry and add hard-wearing efficiencies to wind turbine blades, plus combine materials for electrical and thermal conductivity.



### INDUCTION COATINGS

Rapidly add ferrous metals to dissimilar metal parts, to enable induction technology in cookware, manufacturing and more.



### WEAR RESISTANCE

Protect glass mould equipment and glob chutes from wear, and replace hard chrome coatings.



### REPAIRS

Rapidly repair metal parts, restoring them to working order in applications across aerospace, mining, defence, boilermaking and more. Spray metal in seconds, so you can restore parts in minutes.



### CORROSION

Apply corrosion-resistant materials such as titanium to new or existing parts, enhancing their lifespan in corrosive environments across marine, chemical, and oil and gas applications.



### EMBEDDED SENSORS

Build and incorporate electronic sensors directly into parts, providing hard-wearing and anti-corrosion analytical sensors for offshore oil and gas, subterranean piping and more.

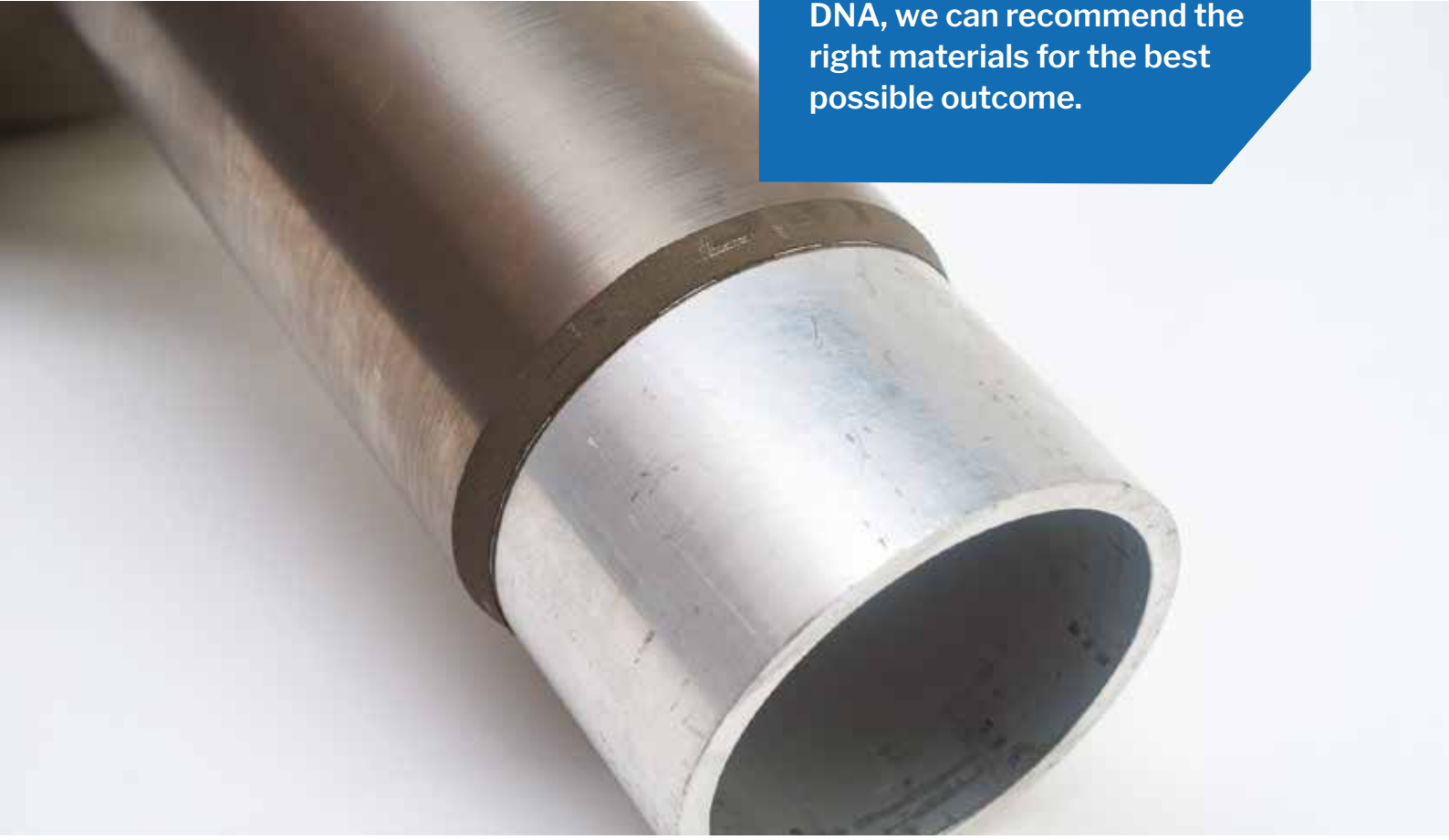
# Materials

As the advanced manufacturing technology leaders, we can combine materials to make never-before-seen bespoke blends (such as titanium with ceramic) to combat corrosion, wear and any other issues impacting your operations.

- ✓ Prevent and repair corrosive damage and defects in cylinder parts
- ✓ Repair bearing seats
- ✓ Repair forms and patterns for casting plastic, glass and metal
- ✓ Hermetically seal radiators and air conditioning systems
- ✓ Add electrical conductive layers to materials
- ✓ Additive manufacturing and more

A wide range of metals can be processed. These include:

<u>Aluminium</u>	<u>Babbitt</u>
<u>Zinc</u>	<u>Gold</u>
<u>Copper</u>	<u>Silver</u>
<u>Tin</u>	<u>Platinum</u>
<u>Nickel</u>	<u>Inconel 625 (He)</u>



With problem solving in our DNA, we can recommend the right materials for the best possible outcome.



## Low Pressure Systems

### D523

Applications for D523 are found in repair and restoration of numerous metal parts like engine components and moulds, sealing, corrosion protection, electrical conductivity, additive manufacturing, and special applications.

Whether you're working with metals, glass, ceramics or plastics, the D523 system unlocks a wide variety of applications.

#### See what's possible:

- ✓ Repair metal surface defects like pitting, porosity, cracks and holes
- ✓ Geometric restoration of worn or damaged surfaces on engines, bearings, gearboxes and more
- ✓ Electrically conductive coatings
- ✓ Special coatings for wear, heat and corrosion resistance
- ✓ Corrosion protection and repair
- ✓ Hermetically sealed radiators and HVAC systems



#### Specifications

System	D523
Powderfeeders (PB-45)	2
Power connection	230V AC 50/60 Hz
Power	3.3 KW
Temperature settings	Variable 20 – 600°C
Parameter logging (temperature, pressure and flow)	Yes
Closed loop integration	Optional
Spray parameter library	Yes
Carrier gas: Air/N2	Yes
Gas requirement	6 bar/400L/min
Mix air / N2	Optional
Particle velocity	-600 m/sec
Spray rate	-30 gr/min
Air/N2 pressure control/regulating	Yes
Full colour HMI touchscreen	Yes
Bus or ethernet/IP connections	Yes
Recommended for industrial robot applications	Yes
Weight and dimensions	43kg / 550 x 1420 x 266mm



# Integrated Spray Booths

Titomic's turnkey integrated spray booth (ISB) systems bring together low-pressure cold spray, handling and dust extraction, and can be customised to your specific needs.

## See what's possible:

- ✓ D523 low-pressure cold spray system
- ✓ Robotics or linear system
- ✓ Remote access for service
- ✓ Data logging
- ✓ Closed-loop cold spray
- ✓ Integrated dust suction system
- ✓ Automated parts loading and unloading
- ✓ Compatible with different powder feeders

### ISB-10

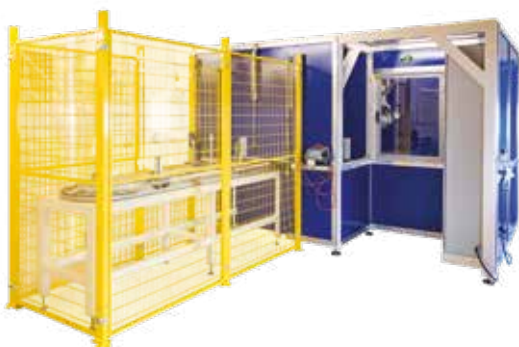
Fully automated machine with a track and camera that scans moulds and applies a coating. Has been made for glass industry but can also be used for other applications.

### ISB-11 / ISB-12

Automated Cold spray machine for serial production of smaller components and R&D activities. Available in several configurations.

## Specifications

ISB-11	ISB-12
<b>Spray Cabinet</b>	
1500 x 1500 x 2200 mm	800 x 1200 x 1850 mm
Doors with security lock	Doors with security lock
Lights	Lights
Touch Screen for integrated Cold Spray and Linear control	Touch Screen for integrated Cold Spray
Connection for Dustsuction unit	Connection for Dustsuction unit
<b>D523 Cold Spray System</b>	
Cold spray gun & heater	Cold spray gun & heater
PLC process monitoring	PLC process monitoring
Parameter storage	Parameter storage
<b>Linear System / Robotics</b>	
X,Y > 700 x 600 mm	ABB IRB-1100
X,Y speed max. 300 mm/sec	Holder for Cold Spray gun
Holder for Cold Spray gun	
<b>Dust Suction Unit</b>	
1200m <sup>3</sup> /hour	1200m <sup>3</sup> /hour
Filter efficiency, with HEPA, 99,95%	Filter efficiency, with HEPA, 99,95%
Sound level 74 dB	Sound level 74 dB
Automatic Filter Cleaning (compressed air)	Automatic Filter Cleaning (compressed air)
Dimensions: 800 x 1370 x 1280 mm	Dimensions: 800 x 1370 x 1280 mm
<b>Options</b>	
Z-ax, 250mm	Integrated chuck for rotating parts, Ø 125 mm
Integrated chuck for rotating parts, Ø 125mm	Gloves for manual operation of Cold Spray gun
Second Cold Spray gun for manual operation	Second Cold Spray gun for manual operation
PB-95, pressurised powderfeeder	PB-95, pressurised powderfeeder



ISB-10



ISB-11



ISB-12



It's never been easier  
to restore parts and create  
denser, thicker and corrosion-  
resistant coatings.

Ready to see how we can help  
solve your manufacturing  
challenges?

Let's talk.

# Together, we can make it possible.



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