

PLASMA



The Next Generation In Cold Spray Technology

Introducing Cold Spray PCS-1000 and PCS-800

For Industry:

High production value and reliability! Feed rates of up to 500g/min and unbeatable maneuverability due to integration of heater and gun in one unit.

For Research:

Unmatched range of compatible materials and dependability! Spray the coatings you haven't been able to without downtime for clogs and repairs.

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A Revolution in Spray Coating Technology Nearly 100% Deposition Efficiency *PLASMA GIKEN's Innovative Heat-Gun Integrated Cold Spray Unit*

What is Cold Spray?

Cold spray is a technology for forming deposits by spraying particles onto substrates at high velocity in a supersonic gas flow. Particles that properly exceed their critical velocity will plastically deform, adhering to the substrate and to one another to create a dense coating.

Why is it called cold spray when it is sprayed up to 1000°C?

The term cold spray derives from the fact that the particles are not heated to their melting point. That is to say that the particles form a dense coating by plastically deforming on the substrate while still in solid state.

What are the benefits?

Because the sprayed particles do not reach their melting point, coatings formed with cold spray maintain nearly their original properties, and experience virtually no oxidation. In addition, cold spray coatings are remarkably dense, and deposition efficiency is often much higher than traditional thermal spray methods. Coatings can be deposited on a wide variety of substrates such as metals, alloys, and ceramics.

Materials Which Can Be Deposited

- Gold [Au]
- Silver [Ag]
- Aluminum [Al]
- Aluminum-Bronze
- Copper [Cu]
- Monel
- Nickel-Chromium [NiCr]
- Nickel [Ni]
- Stainless steel
- Zinc [Zn]
- Tin [Sn]
- Titanium [Ti]
- Ti-6Al-4V
- Inconel
- MCrAlY
- Others

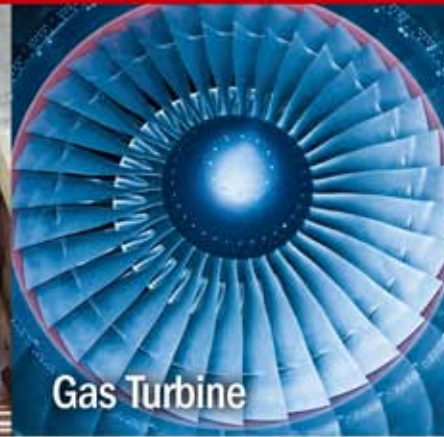
Applications



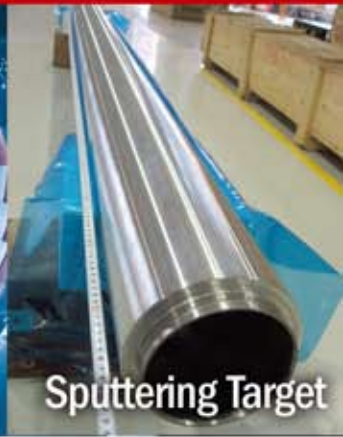
Helicopter Gearbox Repair



Electrical Substation



Gas Turbine



Sputtering Target



Superconductor Motor



IH Cookware

Characteristics of PCS-1000

Performs at temperatures up to 1000°C and pressures up to 5MPa.

- High gas temperature and pressure allows for the deposition of difficult materials such as MCrAlY, Ti6Al4V, Inconel and Stainless Steel. Deposits of more than 10 mm thick can be obtained.
- Clogging becomes a relic of the past with newly developed nozzle technology. Continuous, reliable operation for production lines is now a reality.
- Integration of heater and gun increases operational safety and energy efficiency by limiting the exposure to high-temperature and high-pressure gas lines. At the same time gun mobility increases, allowing for the coating of substrates with complicated geometry.

Cold Spray Coatings

Highly dense coatings are achievable with a wide variety of materials. We'd be happy to put your material of choice to the test next.



Unit Specification		Medium gas temperature PCS-800	High gas temperature PCS-1000
gas chamber	operating gas pressure		~5MPa
	maximum gas temperature	~800°C	~1000°C
powder supply unit	container volume	0.5ℓ (standard) , 2.5ℓ , 15ℓ	
controller	Touch Panel Operation		
gas control unit	Either N ₂ or He gas		
Automatic gas pressure control	operational method	Either automatic or manual control	
Automatic gas temperature control		Automatic control	
Data logging function with various interlocking systems			

Utilities		Medium gas temperature PCS-800	High gas temperature PCS-1000
power source		50/60 Hz, Three-Phase, AC400V, 150A	
		x1	x2
		and One-Phase, AC100V 15A	
Operating gas	primary supply at least 6 MPa (5 MPa during operation)		
Other	Dust collector, robotics, sound booth		

PLASMA



Our Open Laboratory

Visit Our Open Laboratory

Our Open Laboratory allows your organization to experience our cold spray equipment at your convenience, whether as a preview in advance of a potential purchase, or to develop and test potential applications. Currently frequented by universities, laboratories, and industry from Japan and around the world, it includes our cutting-edge cold spray equipment with an intuitive digital interface and a spray booth designed for a wide range of applications. An operating specialist will help with all aspects of your testing any address any questions you may have.

To find out more about Open Laboratory, including availability and pricing, contact us.

Be A Pioneer

Plasma Giken is a pioneer in the development of thermal spraying technology, and continues to be on the cusp of cutting-edge solutions in the field. Since our founding in 1980, we have capitalized on our many proprietary technologies, engaging in advanced R&D to develop and deploy thermal spraying applications for a diverse range of industries. Our diverse experience with industrial applications has given us the unique ability to design the finest cold spray equipment on the planet.

Headed by our president, Dr. Hiroataka Fukunuma, PLASMA employs 65 employees between our Tokyo Headquarters and our Saitama Applications and R&D Center located just outside the city.

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