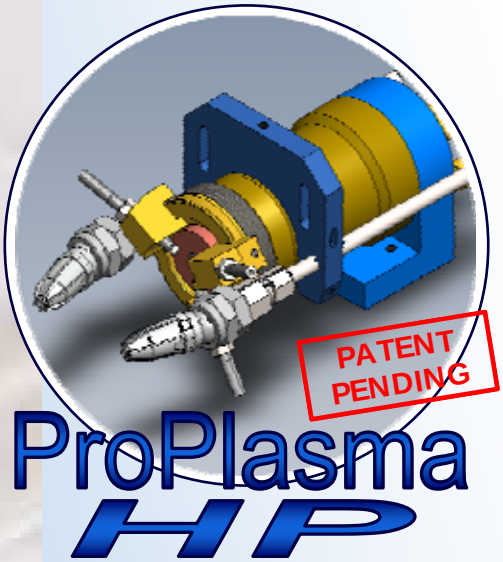
Saint-Gobain - Coating Solutions

ProPlasma HP

New tool for higher spray rates

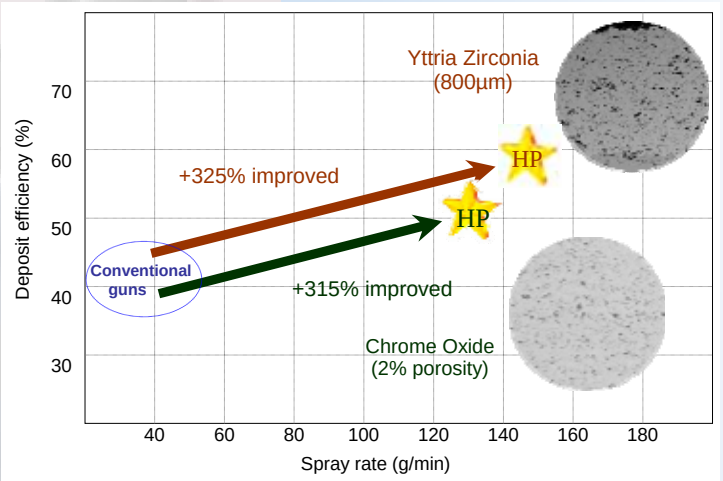


ProPlasma HP

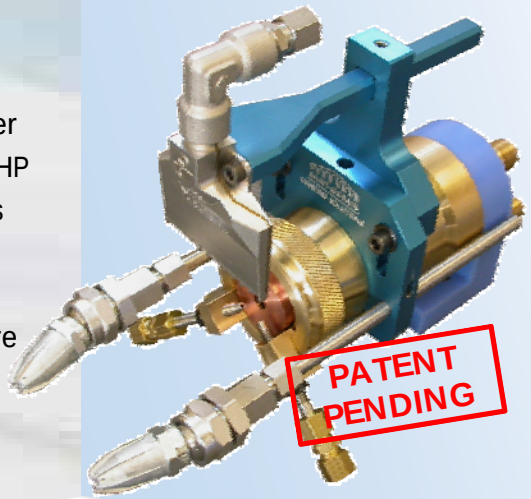
With the goal to improve the productivity and the versatility, Saint-Gobain designed the new ProPlasma HP plasma gun.
Simple and unique at the same time, the ProPlasma HP gun reaches very high levels of productivity with low energy requirements. Using the ProPlasma HP gun results in lower cost of operation, lower energy consumption, less powder needs, less waste, etc...

Higher power, Higher Spray rates

The ProPlasma HP runs with a conventional plasma spray system using a single power source. The ProPlasma HP gun can be used from 30 kW up to more than 65 kW, allowing deposition rates 3 to 4 times higher than with conventional plasma guns.
The ProPlasma HP gun is a universal multi-mode plasma spray gun suitable for a wide range of thermal spray applications such as dense wear-resistant coatings or porosity controlled TBCs.
It can run with a wide range of parameters with Ar-H_2 or Ar-He or Ar-H_2-He.



2 guns in 1, versatile, accurate



Our ProPlasma HP gun can run as a conventional gun or as a high power gun. Versus conventional single electrode plasma guns, our ProPlasma HP gun has higher arc stability. The particle fusion is very uniform and thus the deposit efficiency improved. Furthermore the electrode life time is significantly improved.
The ProPlasma HP gun is suitable for long term spray operations at more than 55kW. The ProPlasma HP gun has been approved already for spraying most of the materials such as ceramics, metals and carbides.
Our ProPlasma HP gun can be integrated on any existing plasma equipment.

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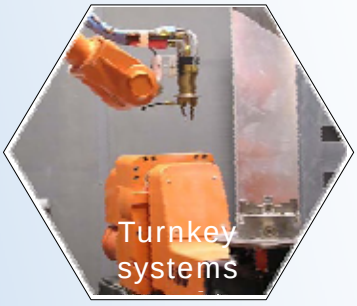
Simple design

Versus multi-electrodes or cascade anode plasma guns, the ProPlasma HP gun has a simple and improved design using a single anode and single cathode. Our self-aligning technology, without complicated parts, allows lower mechanical effort of the gun components for longer life during extended operation. The maintenance of our ProPlasma HP gun requires only an in-house maintenance service. Replacing parts only takes a few minutes.

The powder injector holders are easy to set and up to 6 injectors can be placed on every angular position versus the anode. With our single electrode high power plasma gun design, the powder injection is not geometrically affected by the plasma plume and facilitates the programming of the plasma gun motion.

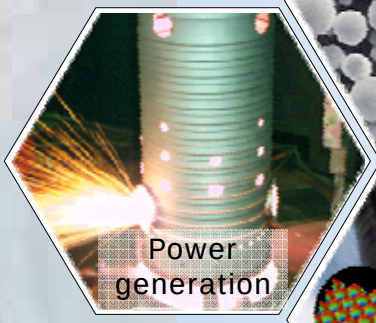


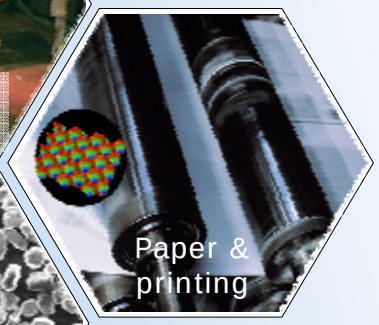
Energy saver

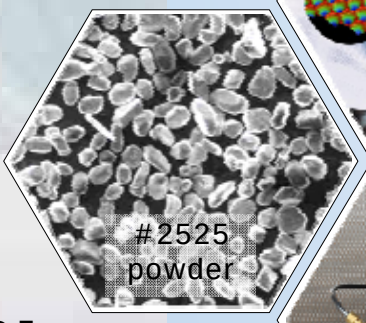
The advanced design of the ProPlasma HP allows a high thermal efficiency and faster deposition rates:

- limits the electrical power requirement and the excessive consumption of expensive gases such as Argon, Hydrogen or Helium,
- reduces overspray and decreases the amount of fumes during spraying,
- reduces spray time and equipment down time,
- reduces maintenance time and maintenance frequency,
- reduces the ratio power / deposited material (eg. Cr_2O_3):

ProPlasma 15,9 kWh/kg versus conventional gun 44,8 kWh/kg.







PATENT PENDING

ProPlasma HP in figures

Continuous operation power	30 to 55 kW
Maximum power	65 kW
Number of powder injectors	1 to 6
Available powder injector holders	-15°, 0°, +15°
Spray rate & D.E with Chrome oxide	125 g/min at 51% D.E
Spray rate & D.E with Yttria Zirconia	150 g/min at 57% D.E
Water cooling inlet requirements	>16 SPLM - >14 bars - <15°C

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