

**for example the automotive and aerospace industries some mechanical parts are highly loaded with temperatures, corrosion and erosion. To protect them against these heavy influences, plasma spraying is the solution.**

Plasma spraying is a flexible process and can be effective on ultra small to very big parts. Bronkhorst understands the market needs and can provide customized solutions to control the plasma spray process.

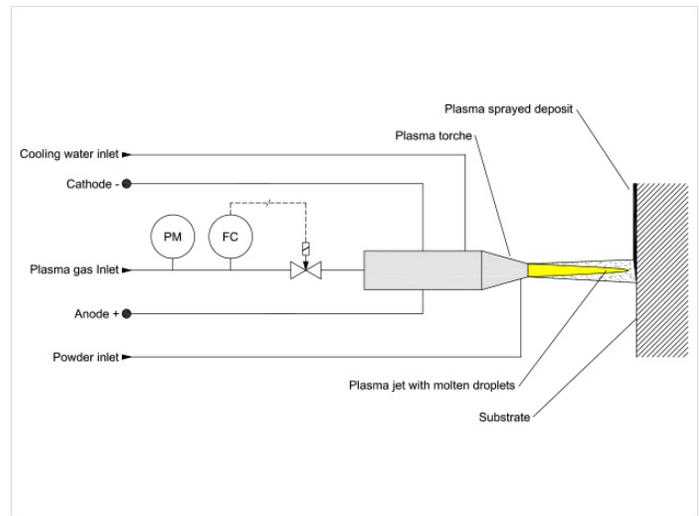


## Process Solution

In a special torch, a plasma jet will be created for example by the plasma gas Argon. In the plasma jet the temperature will reach almost 10.000 degrees Celsius.

We can introduce a powder (sometimes liquid) into the plasma jet. Because of the high temperature the powder will melt, and propelled towards a substrate. There, the molten droplets flatten, rapidly solidify and form a deposit. The introduced powder can be made of various metals, depending on layer thickness, function of the deposit or physical properties. The range of layer thickness at plasma spraying is 20 micrometers to several millimetres, depending on the process and powder.

There are a large number of technological parameters that influence the interaction of the particles sprayed on the substrate. Parameters such as torch offset, flow rate and energy input are important. Because the plasma jet is created by a controlled flow rate of the plasma gas, flow controllers are crucial. Monitoring the pressure is important to control the system and detect an empty plasma gas cylinder. Often the system will be expanded with filters to be sure no other particulates will be involved in the plasma spraying process.



EL-FLOW SELECT  
F-201CV



EL-PRESS P-602CV  
(P2- CONTROL)



MANI-FLOW



MINI CORI-FLOW M14V14