



Welcome to our fifth Edition of Newswire, we hope that you enjoy our Newsletters and find them both informative and interesting.

In the last Edition we spoke about the Automotive Industry one of our readers informed us that not only the companies we had stated use the process but also all BMW 4-cylinder engines, many Mercedes engines, VW, Audi, Porsche 4 cylinder, Nissan, Aston Martin and Bugatti use it or similar.

In this issue we will look at Bio Medical applications and also introduce to you HVOF metal spraying. We also have come exciting news about another new service that MSSA is pleased to offer our customers..

### Interesting Facts

Did you know that Metalspray eliminates the requirement for exotic and expensive components? The ability to selectively apply high performance materials saves designers and fabricators from machining components from costly exotic or heat treatable high- performance alloys. Instead components can be fabricated from lower cost materials and then metalsprayed to ensure performance and durability.

Did you know that our new web site is nearly ready for release? It is looking fantastic with lots of information on products and applications. Look out for the release date! Coming very soon!

## Feature Article - Bio Medical - Metal Spray Solutions

The Metalspray process offers a selection of coatings for protecting bio-medical devices from Radio Frequency Interference (RFI) and Electromagnetic Interference (EMI). EMI and RFI coatings can be used on any substrate, including but not limited to carbon-carbon composites and carbon-fiber composites. Lightweight electronic enclosures that are commonplace in biomedical research laboratories and healthcare facilities are also metalsprayed for RFI/EMI protection. Various noise sources such as oscillator circuits, CPUs, transformers and plastic cases can also benefit from metal spray coatings. Another common type of biomedical device that utilizes metal spray coated components is x-ray equipment.

The most common application in the Bio Medical field is Medical Implant Prosthetics. The image below shows a metal sprayed Spine Screw, which is used to increase lumbar spine fusion.



Metal spray coating solutions for Orthopaedic, Dental and Spinal implants use

- Controlled Atmospheric Plasma Spray (CAPS) or Vacuum Plasma Sprayed (VPS)
- Air plasma Spray (APS)

When using Medical implant prosthetics, it is important that the human body can accept the use of these biomedical components without rejection. For this purpose materials such as hydroxyapatite and pure titanium are used to create bio-active coatings on implants.

The Shanz Pin, pictured below, is used for external fixation at the pin-bone interface.



Shanz Pin

[Interested in Biomedical - Metal Sprayed Implants - Click Here for More Information](#)

Hydroxyapatite is a component of bone. It is a calcium phosphate mineral that is also found in rocks and sea coral. See below for a picture of a Femur Stem, used for reconstruction of an arthritic hip.



Femur Stem

Surgeons use hydroxyapatite implants made from sea coral that have been treated so that their structure and chemical make-up is almost identical to the hydroxyapatite of human bone. When implanted into the body the synthetic implant is accepted by the body and because of its porous nature allows normal tissue integration to take place. Also, the process to create hydroxyapatite implants from sea coral involves intense heat that removes all the proteins thus rendering the structure totally non-immunogenic (i.e. it does not provoke allergic reactions).

Another material that is metalsprayed is Titanium and its alloys, which produces optimised coatings that are used for coating hip, knee, shoulder, elbow and ankle implants. Dental implants, pictured below are plasma sprayed with titanium.



[Interested in Dental Implant Coatings - Click Here for More Information](#)

Product Focus - High Velocity Air-Fuel (HVOF) Equipment

This edition's product focus is on HVOF metal spraying. MSSA have recently signed an agreement with American company, Kermetico to market their HVOF systems in Australia.

The HVOF process has been around for some years but recent developments amazed MSSA so much that we decided to sign up with Kermetico.

The High Velocity Air-Fuel (HVOF) is a metal/thermal spray process for surface coating protection of components, typical uses include:

- Abrasion protection
- Erosion protection

- Corrosion protection
- Surface restoration
- Restoration of diameter
- Surface preparation by cold or hot grit blasting
- Coating stripping by hot grit blasting



The HVAF metal spray process is characterized by a low combustion temperature (1,960-2,010°C), high particle velocities (800 to over 1,000 m/s), resulting in low-oxidized, ductile, non-porous high-bond carbide and metal coatings. With a spray rate up to 550 g/min (33kg/hr.) it makes the process much faster, providing a significant advantage over HVOF.

The system can be used to grit blast the component before Spraying- no loading and unloading of the component.

The system can be operated in HVOF mode if required to meet customer specifications.

We are currently updating our website to include information on HVAF equipment, and in the meantime you will be amazed to review independent testing of Kermetico's HVAF metal spray results in comparison to HVOF metal spraying. For test results click here: [The Schlumberger Report](#), it says it all.

If HVAF is of interest to you, and you would like to find out more on our equipment and what it can do, please contact our [Sales Department](#) who will assist you with your enquiry.

Did you know? - You can spray internal surfaces using our HVAF Systems

The Kermetico HVAF system has Internal attachments available to spray internal bores down to 80mm!!!! and even more surprising they offer a Rotating Inside

Diameter (ID) gun for spraying Metals and Carbides into bores and internal diameters 100mm and larger Please follow the link



### Repairs, Maintenance & Programming of Robots - New Service

MSSA have teamed up with Burley Engineering to offer servicing, maintenance and repairs and programming assistance to a vast range of robot makes. These include, Kuka, Comau, ABB, Motorman, Kawasaki and many more. Contact our Sales Department if you require/or would like further information.

If this is of interest to you please contact our [Sales Department](#) who will assist you with your enquiry.

Feature Article in next issue of Newswire : **BRICK MANUFACTURING**

Do you know about the different types of Spraying?

[Metal Spraying](#)

[Flame Spraying](#)

[Arc Spraying](#)

[Plasma Spraying](#)

[HVOF Spraying](#)

[HVOF Spraying](#)

[Masking](#)

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