

MACKAY'S



Est 1968

Metalspraying and hard chrome cc



An Industry Leader in Thermal Spraying and Coating Technology



Heavy bay machine shop (up to 10 tons)



Light bay machine shop (up to 5 tons)

Mackay's is an established surface engineering company with the expertise to provide dynamic and innovative coating solutions to your wear and corrosion/erosion problems, by increasing service life and improving performance of vital components.

O u r M i s s i o n

Our main objective is to be the leader in surface engineering by maintaining:

- Highest guaranteed standards in modern development
- High quality products
- Fair and cost-effective pricing
- Service and on-time deliveries
- Maintaining our quality assurance plan

Mackay's is one of the most complete surface coating companies with its large machine shop and extensive grinding facilities, making it an industry leader in thermal spraying and coating technology in South Africa.

Mackays was established in 1968 and operates from its 4400 sq metre facility which includes:

Machine shop (up to 10 ton lifting facility)

12 x lathes (Max swing 1450mm by 8000mm between centres)

2 x milling machines

Grinding shop

7 x Universal grinding machines (max swing 680mm by 3500mm between centres)

2 x internal grinders (max 700mm swing by 2000mm bed)

1 x super finish machine

Thermal spray shop

Combustion flame spray torches

Electric arc spray units

Fuse spray torches

Rokide spray units

HP/HVOF Plant

1 x fully automated robotic spray cell using the TAFE HP/HVOF JP 5000 spray unit.

1 x automated spray cell using the HVOF TJ 4000 TAFE spray unit.

1 x HVOF arc spray unit

Plasma spray unit

1 x automated spray cell using the Praxair SG 100 plasma spray unit.

Hard chrome plant

6 x hard chrome plating tanks max 1500mm by 4500mm deep.

Micro welding plant

1 x fully automated micro cladding plant.

Coatings available from Mackays

Hard Chrome and Electroplating

Internal and External
Chrome Stock

Micro Submerge Arc Welding

Carbon Steels
Alloy Steels
Stainless Steels

TIG, Sub Arc and Electric Arc Welding

As above

Thermal Spray Coatings

Combustion Flame Spray (metal and ceramic)
Electric Arc Spray
Fuse Spray Coatings
Rokide Coating
Plasma Spray Coatings
HP/HVOF Coatings

Coating materials available

Pure metal powders and wires

Aluminium, Zinc, Copper, Nickel, Bronze,
Molybdenum, Stainless and Carbon steels

Metal Alloy powders and wires

Aluminium based, Cobalt based, Copper based,
White metal, Nickel based and Iron based.

Inconels

Monels

Ceramics and Cermets

Aluminium oxide, Chromium Oxide, Zirconium Oxide
based powders

Tungsten and Chrome Carbide powders



Wire drawing blocks repaired



Pins hard chromed and ground



White metal bearings repaired



Shafts up to 7 000mm hard chromed and polished



Micro submerge arc welding



Arc sprayed coating



Plasma sprayed ceramic coatings



Bore sprayed with 420 s/steel and machined.



HP-HVOF coating of plunger



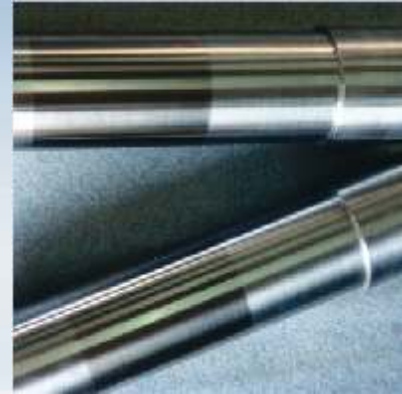
Pump impellers are sprayed with tungsten-carbide to increase life expectancy.



Plastic manufacturing plant, parts are coated with a HP/HVOF coating to extend life (also used in the food processing industry)



Vacuum pump spares reconditioned with HP/HVOF coatings and tig welding.



Pump sleeves are manufactured and coated with a fuse spray coating.



Copper printing rolls repaired.

Pinion shafts repaired with micro submerged welding



Applications in a variety of industries

Steel mill industry

Roll neck journals, furnace rolls, pot and stabiliser rolls.

Wire drawing industry

Wire drawing blocks, rollers and pulleys.

Mining

Pump parts (impellers, housings, diffusers, sleeves, neck rings, chamber bushes) and plungers

Pulp and paper

Traction rolls, pumps and high wear parts

Petro chemical

Pumps, gate, plug, butterfly and ball valves

Hydraulic

Piston rods coated for better wear and corrosion resistance

Printing industry

Impression and plate cylinders, copper rolls, and anilox rolls

Power generation

Turbine blades and sleeves, compressor rods and pelton wheels

Plastic industry

Mixing blades and extrusion dies

Aero space

Traction and release applications

General wear problems

Induced and forced draft fans, thermocouples, mechanical seal faces, crankshafts, wear plates, crusher parts, earthmoving equipment, general bearing journal repairs.

The TAFA JP 5000 high pressure HVOF system

The JP5000 has been developed and refined to produce the absolute best coating quality available.

High particle velocity was the primary design objective of the JP 5000, the basic rules for coating quality are

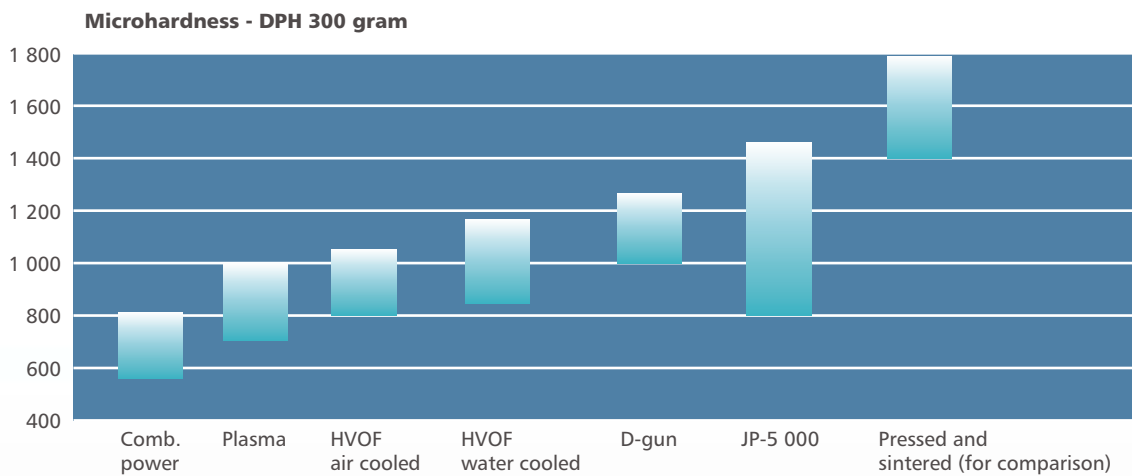
1. High combustion pressure.
2. High gas velocity.
3. High particle velocity.
4. High coating quality

The JP5000 is the embodiment of these rules, it has the highest combustion pressure so it delivers the highest quality coatings.

The high velocity also packs the particles more tightly together, reducing porosity and creating a denser coating. This is especially beneficial in corrosion resistant applications where a dense barrier is essential.

The advantage's of the JP 5000's coatings

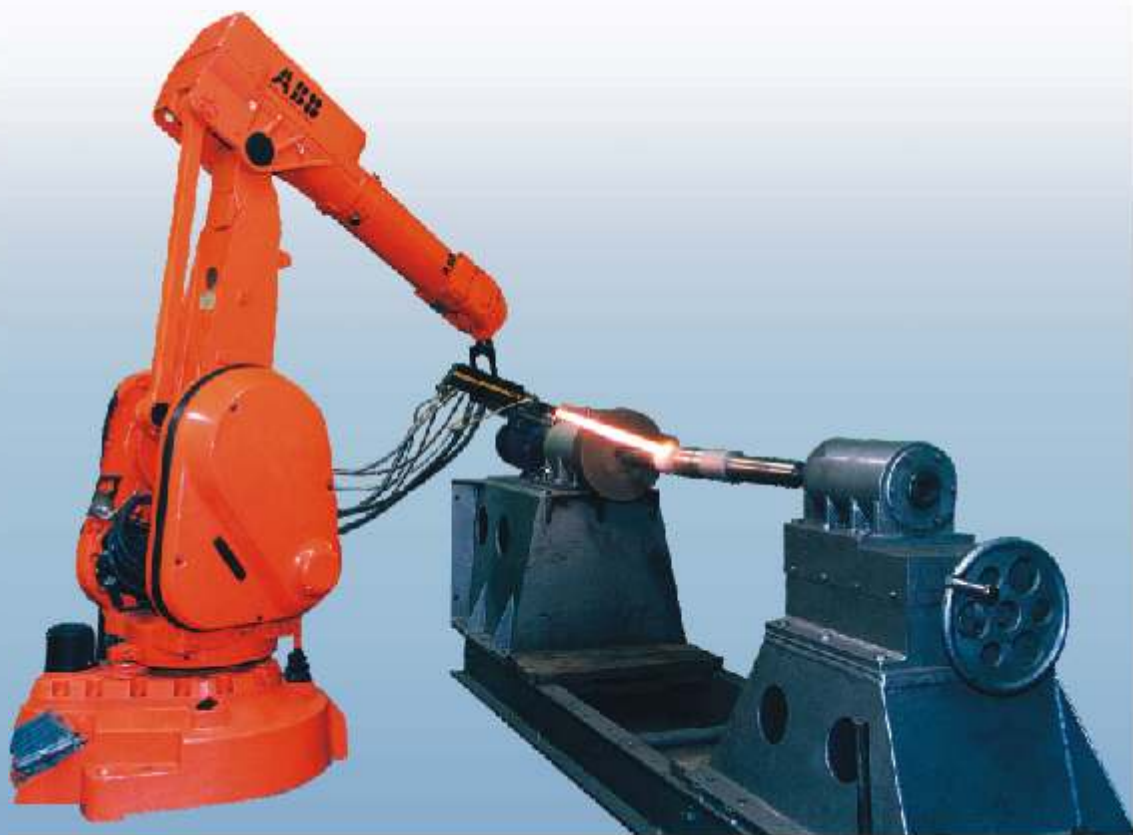
1. High density (lower porosity)
2. Higher hardness
3. Better wear resistance
4. Higher bond strength
5. Improved corrosion barrier
6. Smoother as sprayed surfaces



JP-5000 HP/HVOF coatings display superior hardness. Note that the broader range of hardness in the JP-5000 demonstrates the ability to control its coating properties.



The 6 axis Robotic Manipulation System is used to deliver advanced coating quality.





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