Advanced Coatings for Turbomachinery

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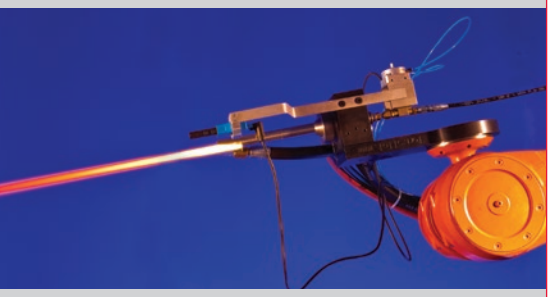
COMPANY PROFILE

Curtiss-Wright Surface Technologies (CWST) (formerly known as Metal Improvement Company) offers a single source solution and point of contact for all your surface treatments. We can reduce your turnaround times and costs through our network of over 65 worldwide facilities.

Our proven surface treatments meet industry demands for lighter materials, improved performance and life extension in key markets such as Aerospace, Automotive, Energy and Medical. We can prevent premature failures due to fatigue, corrosion, wear, galling and fretting.



Curtiss-Wright Corporation (NYSE:CW) is a global integrated business that provides highly engineered products, solutions and services mainly to Aerospace & Defense markets, as well as critical technologies in demanding Commercial Power, Process and Industrial markets. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing innovative solutions through trusted customer relationships. For more information, visit www.curtisswright.com.

Curtiss-Wright Surface Technologies Coatings Expertise

Curtiss-Wright Surface Technologies GPX and APX turbomachinery thermal spray coatings deliver technologies essential to today's high performance, high quality industrial turbines, including:

- Thermal Management
- Wear Control
- Corrosion Control at Low Temperatures
- Corrosion Control at High Temperatures
- Oxidation Control
- Solid Particle Erosion Control

THERMAL MANAGEMENT

GPX Thermal Barrier Coatings can maximize turbine efficiency by allowing higher firing temperatures while reducing component thermal fatigue, warpage, oxidation and cracking. The combination of ceramic and superalloy constituents in GPX Thermal Barrier Coatings reflects heat back into the combustion gas path and insulates parts, effectively lowering their surface temperatures.

WEAR CONTROL

Wear due to vibration, friction, thermal gradients and pressure shortens the life of turbomachinery components and if left unchecked can cause expensive unscheduled outages. GPX Wear Control Coatings can prolong the life of critical turbomachinery parts by as much as 10 times. Anywhere metal touches metal is a candidate for GPX Wear Control.

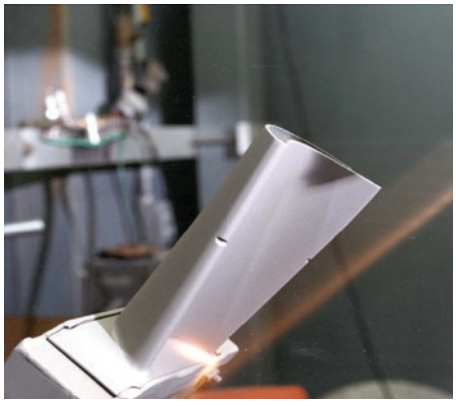
CORROSION CONTROL

Low Temperature

Corrosion of turbomachinery components costs operators billions of dollars every year through premature part failure and induced aerodynamic drag. APX Corrosion Prevention Coatings can dramatically reduce corrosion damage while providing a smooth aerodynamic surface on compressor blades and stator assemblies. Tough APX Coatings also provide resistance to erosion from dust and high velocity gases.

High Temperature

Turbine components exposed to corrosion at high temperatures (+ 1,000°F) not only degrade faster than at lower temperatures, but also are subjected to cracking due to thermal fatigue and cycling. APX High Temperature Coatings are diffused into the substrate, creating a nearly impermeable oxide surface which can reduce scaling and cracks due to thermal cycling.



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OXIDATION CONTROL

High temperature oxidation is a condition in gas turbines most responsible for premature failure of “hot section” components. As designers continue to raise turbine firing temperatures, superalloy components are nearing their theoretical limits. GPX Oxidation Resistant Coatings are extending these limits by impeding oxygen penetration of the component surface while providing a sacrificial layer capable of protecting the part between overhauls.

SOLID PARTICLE EROSION CONTROL

Solid particle erosion claims tons of steam turbine components every year and is most responsible for premature turbine failure. Often coupled with foreign object damage, solid particle erosion can be controlled effectively when temperature, impingement angle, velocity and size of erosion particles have been considered. GPX Solid Particle Erosion Coatings are specifically designed and tested for this environment and have proven effective in extending the life of critical steam turbine parts.

CENTER FOR ADVANCED COATINGS

Our Center for Advanced Coatings offers customers superior thermal spray process capabilities. The Center is designed for applications development, parameter studies, coatings qualification and prototype work. Our coatings experts work directly with customers to diagnose problems and devise solutions. We can fully quantify coatings by analyzing composition and evaluating structure.

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