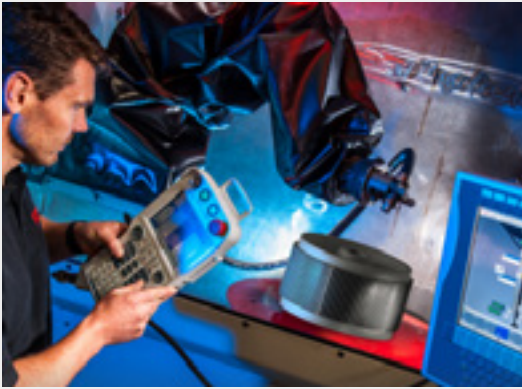


COMPANY PROFILE

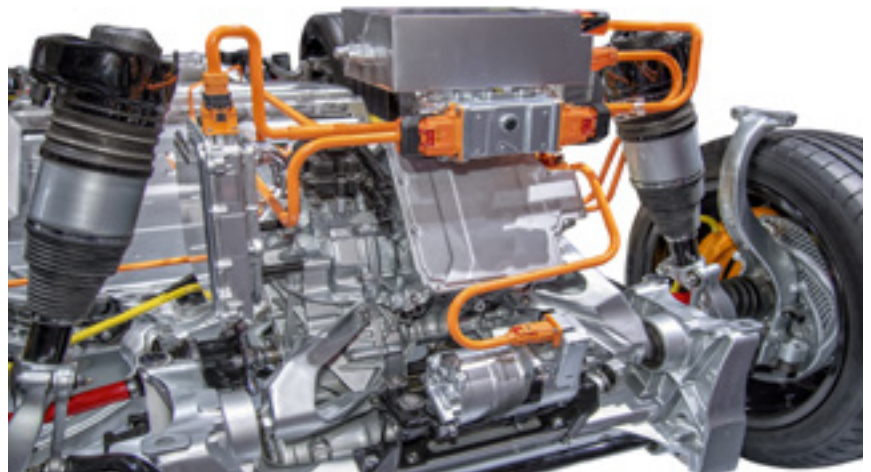
Curtiss-Wright Surface Technologies (CWST) offers a single source solution and point of contact for all your surface treatments. We can reduce your turnaround times and costs through our network of 65 worldwide facilities.

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.



Surface Technologies is a Division of Curtiss-Wright (NYSE: CW) a global innovative company that delivers highly engineered, critical function products and services to the commercial, industrial, defense and energy markets. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing reliable solutions through trusted customer relationships.

Electric and Hybrid Vehicle Material Improvement and Testing



Common Failures Modes Addressed

- Notch sensitive fatigue applications
 - Stress corrosion cracking
 - Galvanic corrosion
 - Bending fatigue, torsional fatigue
 - Vibration
 - Tooth root bending & tooth flank pitting (Gears)
 - Reduce transmission noise
 - Lubricity
 - Environmental and chemical protection
 - Wear
 - Thermal and electric management
- BEV (battery electric vehicle)
 - PHEV (plugin hybrid electric vehicle)
 - HEV (hybrid electric vehicle) gasoline hybrid.
 - Hydrogen Fuel Cells

LASER PEENING

Stress corrosion cracking, galvanic corrosion

Common components

- Vehicle Frames

With electric and hybrid cars requiring light-weight materials, with different metals in contact with each other and circulating significant electrical current to power the motors, galvanic corrosion could be a longer-term issue. Laser peening helps retard galvanic corrosion applications.

SHOT PEENING, DUAL PEENING SUPER FINISHING

Improves fatigue properties & reduces friction thereby reducing heat, vibration and transmission noise

Common components

- Gears: all geometries (sun, planet, ring, bevel, etc.)
- Shafts: all geometries (with splines, cross holes, hollow, etc.)
- Springs: suspension, seat, console doors, etc.
- Engine mounts
- Axles
- Torsion bars



DRY FILM LUBRICANTS

Lubricity / Corrosion, ease of assembly

Common components

- Hood and Door Pins
- Hood Latch
- Hinges
 - Door Hinges
 - Hood Hinges
- Springs
 - Compression Springs
 - Clock Springs
 - Torsion Springs
 - Extension Springs
- Fasteners
 - Bolts
 - Nuts
 - Washers

THERMAL SPRAY COATINGS

Corrosion, wear, lubrication and thermal and electric management

*(HVOF, plasma, wire and arc spray)
Machining and grinding*

Common components

- Battery Modulus
- Fuel Cell Casing
- Motor Components
- Electronic Devices, Sensors
- Sliding Components
- Brake Components
- Transmission
- Steering System, Wheel Bearings
- Valves, Pins, Sleeves
- Joints, Axles, Forks
- Brake Components

PARYLENE COATINGS

Environmental and chemical protection

Common components:

- All Electronics
- Charging Stations
- LED (high temperature applications) Parylene MIL-46058 and IPC-CC-830 Grades. Operational high temperature, dielectric and tin whiskers mitigation properties.



ANALYTICAL SERVICES

Determine material/component Suitability

Common components

- Component Reliability
- Paint/Coating Evaluation
- Mechanical Testing
- Salt Spray and Cyclic Corrosion Testing
- Metallurgical Examination
- Chemical Analysis
- Polymer Material Testing
- Weld Evaluation
- Fatigue Testing
- Failure Analysis
- Hardness Testing