



Driving the Automotive Sector Forward with High-quality PVD Coatings

In the automotive sector, many coatings are in use to boost engine performance, increase maintenance intervals, increase fuel efficiency and reduce greenhouse gas emissions, extend battery life, reduce wear on engine, drive train and mechanical components, and even create a premium look and feel in the automotive interior. Hauzer, manufacturer of plasma coating equipment, has contributed to all of these objectives and more in our decades-long relationships with automotive manufacturers.

Our coating machines are known for their modularity, allowing us to configure the machines with exactly the right technologies to create the coating types our customers need. Mature, proven technologies create high-quality physical vapour deposition (PVD) and plasma-assisted chemical vapour deposition (PACVD) coatings. The flexible configuration of the machines means that our customers not only invest in better productivity and results today, but also in the future – the machines can be upgraded and updated as requirements and even preferred coating technologies change.

Piston Ring Coatings: a Growth Market

The automotive industry is shifting away from petrol and diesel engines and towards battery or fuel cell electric vehicles. However, there is still a growth market within internal combustion technology: PVD coating of piston rings for combustion engines. These critical wear components in the engine are commonly coated with galvanic chrome coatings. However, with the phasing out of the toxic substance hexavalent chrome (Cr-VI), an alternative is needed.

“This creates a very strong market for PVD coatings for piston rings,” says Geert-Jan Fransen, Product Manager for tribological coatings. “Vehicles with internal combustion engines will need piston rings for many years to come.”

Hydrogen Fuel Cells: the Green Future of Mobility

The automotive market is rapidly moving towards full electrification. Hydrogen technology, with its zero emissions, fully electric drive trains and excellent scaling possibilities, offers great potential for the transport sector. A 100 kW automotive fuel cell stack, the type that will power a passenger vehicle, has about 400 bipolar plates (BPPs). To keep costs down, BPPs can be made out of stainless steel and covered with a protective carbon coating. Hauzer BPP coatings have shown excellent performance in accelerated corrosion tests, and steady-state and dynamic load tests.

With an expected annual production of 1 million fuel cell electric passenger vehicles in 2030, that adds up to 50 million m² of coated steel per year. This will require unprecedented amounts of coating capacity. Hauzer has developed the modular Metalliner platform, an inline coating machine optimised for productivity, throughput and cost per coating.

Interested in Getting Started in Piston Rings or Fuel Cells?

Are you looking to expand your business in either of these directions? Or are you looking to enhance your PVD coating offering for a different part of the automotive sector? Please get in touch. The Hauzer engineers would be happy to discuss your application and technology requirements.