

# 自動車ボディ前処理・電着塗装の技術変遷と

## 回転方式の導入経過と今後の技術動向

Auto Body Pretreatment and E-coat System Technical History,

Rotation System Introduction and Future Trend

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### 抄 録

自動車ボディ塗装において70年代後半から80年代初頭にかけて、塩害地区を主体とする錆問題に端を発して、防錆ニーズが飛躍的に高まった。特に、防錆を主目的とする前処理、電着工程においては、従来のスプレー方式から当時欧米では主流と化していたディップ方式の導入、さらには搬送もパワーアンドフリー方式のオーバーヘッドコンベアに大きく様変わりした。その後、本工程は重長高大な装置に化し、投資観点、レイアウト観点から、更なる進化、変革要求も根強かった。

そうしたなかで、欧州ドイツにて、回転方式による新方式がドイツ塗装装置メーカーDürr 社、Eisenmann 社から上市され、ドイツ自動車メーカーとドイツ塗装装置メーカーの特異な開発方式と相まって、欧州市場を中心に相対的に優位性を確保しつつある。

本システムのメリット、デメリットを述べながら、日系自動車メーカー各社の技術知見と日系自動車メーカーにおいても戦略的に一部先行して導入している実績などを紹介しながら、今後当グループが取るべき方向性に対し、大胆な考察を述べる。

### Abstract

From late 1970's through early 1980's in auto body paint industry sector, demand for better corrosion protection increased exponentially due to severe corrosion problems mainly in areas suffering salt damage. The traditional spraying system in the pretreatment and E-coat operations, which were designed mainly to provide corrosion protection, was replaced by the dipping system that was widely in use in America and Europe at the time. In addition there was also a dramatic change in the conveying system with the introduction of the Power-and-Free Overhead conveyer. Subsequently, equipment used for this process became "heavy", "thick", "long", and "large", significant investments were made and layouts changed, and there was great demand for advancement and innovation in manufacturing equipment.

Against such a background, such German paint finishing equipment manufacturers as Dürr and Eisenmann have introduced a new rotation system in the market. Currently it has almost become the mainstream painting

system in the European market due to a unique development policy with the combined efforts of German car manufacturers and German painting manufacturers.

In this report I outline the merits and demerits of our rotation system, as well as introducing the relevant technical expertise of Japanese auto manufacturers and the early strategic introduction of this system by some Japanese auto manufacturers. I attempt to outline the bold direction our group plans to take in the years to come.