



PEUGEOT MOTOCYCLES : Powder coating of scooter parts

Scooters enjoy increasing popularity. Since Audrey Hepburn and Gregory Peck romped on a Vespa through Rome in the movie classic “Roman Holiday” in 1953, two-wheeled vehicles have evolved particularly in overcrowded cities and agglomerations into a coveted means of travel. Of course, design and equipment of the scooters have been dramatically enhanced since 1953.



One of the worldwide leading manufacturers in the highly competitive scooter market is the French company Peugeot Motorcycles.

In the plant in Mandeure situated in the French department Doubs tens of thousands of scooters are manufactured every year. Peugeot Motorcycles offers a wide choice of products, ranging from the brand new, very economic model LUDIX (to be launched in April 2004) to the luxury top of the range scooter ELYSTAR featuring, as a worldwide premiere, a braking system with ABS/PBS.

The company’s objective is to offer ultimate design and advanced, environment-friendly technologies.

In the last years, all these demands led Peugeot Motorcycles to drastically modernize its production plants. The paint-work of the chassis parts underwent drastic changes: the liquid paint line was substituted by a powder coating unit.

Project Manager Fabrice Terral explains the motives and objectives: *“One of the cardinal problems of liquid painting is the concomitant VOC emission (volatile organic compound). Our old unit generated 58 tons of VOC pollutants every year. Even if this complied with current environmental regulations, it did not meet the specified values coming in effect in 2005. Thanks to VOC-free powder coating, the company now goes far beyond current and future directives!*

In addition, the new fully automated unit provides increased production efficiency and significantly enhanced working conditions.”

Powder coating was not a foreign word to Peugeot Motorcycles, as this process was already introduced in the field of anti-corrosive protection back in 1996.

The powder line is composed of the following elements:

- pretreatment trough coating tunnel and dry off
- fully automated powder application in chassis color
- curing oven for color powder and cool-down zone
- fully automated powder application of the clear coat finish
- curing oven for clear coat finish

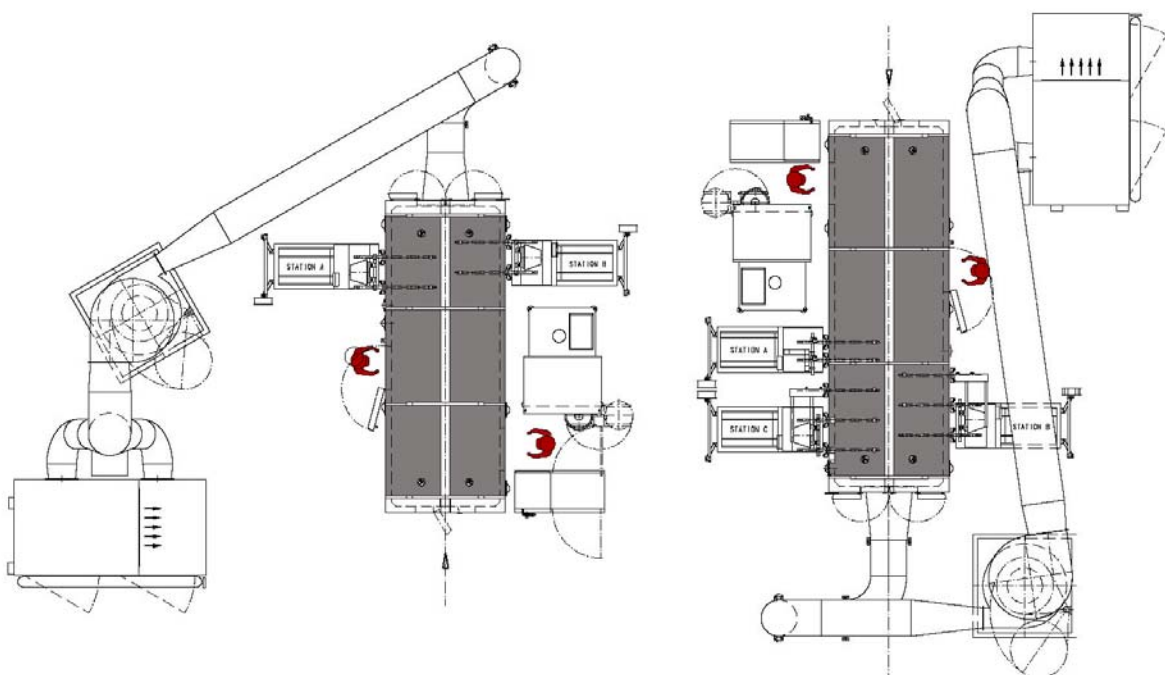
The entire coating process is fully automated. The object recognition system via camera registers the part geometry and activates the corresponding parameters of the control unit on the powder gun.

In the field of powder application, Peugeot Motorcycles opted for ITW Gema.

The unit includes two complete MagicPlus systems, each of them equipped with Touch screen user interface, powder centers, removable reciprocators and ultra modern applicators. The multi-color booth features three automatic guns on each reciprocator, the remaining guns are used as fixed guns.

In addition, both booths provide manual coating stations for surface treatment of prototypes, for which programs have not yet been set.

To guarantee consistent quality, the booths are located in a filtered and air-conditioned over-pressurized room. They are situated close to one another, filter and cyclone have been banished outside the walls.



What are the main advantages of the new powder coating unit?

Fabrice Terral explains in detail: *"We concentrated on three points:*

- The environmental protection:

The pollutant-free process contributes to a better integration of the production site into the urban environment.

- The improvement of our products:

Thanks to powder coating technology, our chassis are now more resistant to shocks, friction and other wear mechanisms. In addition, the corrosion protection has been significantly improved. The clients of Peugeot Motorcycles therefore get a long lasting product.

- The improvement of the production:

With the higher grade of automation, we were able to reduce costs by approximately 30% compared to the former liquid painting process. For our company, this represents a dramatic improvement."

What alternatives to a new installation did you actually have? *"We would have had to outsource the entire painting process"* says Fabrice Terral. With the new powder coating unit, Peugeot Motorcycles also confirmed its commitment to the Mandeure production site. It is very important for this region, that this facility will be maintained and further developed.

The whole installation process of the powder coating unit was very rapidly executed. In October 2001, the project was launched, in April 2002, Peugeot ran coating tests in the ITW Gema test lab in St. Gallen (Switzerland) and in August 2002, the unit was installed. The powder production could be started on September 2, 2002 and the production rate was gradually increased until September 7, 2002 to achieve the desired output of 80 hangers per hour.

Fabrice Terral's outlook is very positive: *"The progress made in the field of environmental protection, paint resistance and enhanced working conditions all speak in favor of our decision to introduce the powder coating process for our metal parts. In addition, the gains in flexibility and quality as well as a cost reduction of 30% are a full success!"*

Today, only the plastic parts are still coated with liquid paint. And anyone who has already made acquaintance with the innovative force of Peugeot Motorcycles knows that also in this field, all efforts will be undertaken in the next years to introduce both environment-friendly and cost-efficient production technologies!

Powder coating unit profile Peugeot Motocycles

Multi-color priming unit:

OptiMatic AS02 equipped with 9 automatic guns and 1 manual gun
Quick color change system MagicPlus with powder center
3 reciprocators ACR1/21 with automatic depth axes
PLC control system with object recognition and touch screen operation

Clear coat finish unit:

OptiMatic AS02 equipped with 4 automatic guns and 1 manual gun
Quick color change system MagicPlus with powder center
2 reciprocators ACR1/21 with automatic depth axes
PLC control system with object recognition and touch screen operation

Part dimensions

Height: 1700mm Width: 800mm Length: 800mm

Conveyor speed

Up to 1.33 m/min.



Fabrice Terral, Project Manager at Peugeot Motorcycles, in front of the powder center of the multi-color unit.



Finished products at Peugeot MTC.



Powder coating in the MagicPlus booth from ITW Gema.

