

## Success Story: Automotive coating supplier

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Manufacturing & Industrial



# Eaton filters seal the deal in Europe for major automotive supplier

#### Location:

Belgium

#### Segment:

Automotive

#### Challenge:

Existing filtration system to apply liquid vinyl to car bodies lacked the precision to remove larger particulate, resulting in clogging of injection nozzles and downtime on the production line.

#### Solution:

TOPLINE bag filter vessel paired with SENTINEL® filter bags

#### Results:

Newly installed filter systems resulting in more efficient production lines, reduced maintenance costs and reduced waste.

*Reducing waste disposal costs in Europe, where environmentally friendly business practices are strongly encouraged, provides not only financial savings, but also helps the company employ sustainable business practices.*

#### Background

One of the world's largest suppliers of adhesives, sealants, coatings and application equipment to the automotive industry prides itself on innovation and is constantly in search of new solutions. Based in Europe, the company has partnered with just about every major and minor automotive maker throughout the world. Production facilities are located in some 14 different countries with joint ventures maintained in roughly 20 additional countries.

Producing a substance known as plastisol for car bodies represents a major part of their manufacturing efforts. Plastisol is a liquid form of vinyl that is cured by heat to form a solid end product and can serve as a protective, functional and decorative coating for a variety of applications.

A typical car body will take about 10 kilograms (22 pounds) of the material to give it that shiny, polished look everyone expects on a new set of wheels.

But that only happens when it is applied correctly.

#### Challenges

To best accomplish the desired appearance, the plastisol needs to be properly filtered before being applied through sophisticated robotic machines. Small filters are located in the robot's injection nozzles, and due to their limited size, they can become clogged very easily, so the Plastisol producer needs to ensure that 100 percent of the impurities above a given diameter are never present in the final product.

Unfortunately, the existing self-cleaning, rotating filtration setup wasn't precise enough to remove all of the larger particles, causing headaches within the company. This was due to the filters constantly deforming, allowing more unacceptable particles to pass through.

More and more plastisol was subsequently wasted, and higher and higher costly change-outs were becoming a financial strain.

But worst of all, customers — many of whom represent some of the largest carmakers in the world — were starting to



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confront the company with complaints. It got so bad that many of those same customers were about to be lost to a competitive plastisol supplier.

Finding an appropriate solution soon became a top priority for the company.

### Solution

Based in part, on the advice of a few of the dissatisfied customers, the company decided to take a look at an alternative filtration supplier and contacted Eaton.

The conversion led to a project that would become a rather large undertaking, one that would last more than eight years. Still, Eaton delivered its first system in only four months, which at the time was a simple-yet-robust bag filter system with a top entry vessel. The design proved to be successful because of the following factors:

- The top inlet design decreases the inner volume compared to a side inlet filter, which results in a savings of 5 liters of product at each bag change out
- The customer has direct access to the bag due to the top Inlet design
- Easy cleaning of the basket top
- Direct compression of the bag, means a compression plate is not required

As Eaton's filtration product line continued to evolve, so did the company's success with filtration.

Today all seven of the company's production lines are equipped with Eaton TOPLINE bag filter vessels and Eaton NMO SENTINEL® filter bags.

Specialized displacement balloons have also been added to the systems to minimize waste and allow for quicker and easier change-outs.

The TOPLINE single bag housing, with its high performance design and extra heavy-duty components, is widely considered the best bag filter system on the market, especially for highly demanding applications like those at the European plastisol supplier. It also provides optimum sealing of the filter bag.

The fully-welded construction of the SENTINEL® filter bags promotes high efficiency, and the patented seal ring allows for complete, bypass-free filtration. Convenient handles in the ring make replacing the bags quicker and easier than competitive bags.

Eaton also strategically installed the filters in a horizontal position to limit the amount of product with the biggest particles to be easily discharged into a container located under the lid of the filter vessel.

### Results

All of the earlier self-cleaning filter systems have been removed, and production lines are now operating efficiently, sustainably and profitably with Eaton filters. With quality issues no longer being a concern due to ineffective filtration, the customer has regained its status as an industry-leading automotive supplier.

The company has also reported significantly reduced maintenance costs over the previous systems. With the new setup, the customer knows in advance what maintenance needs to be performed and is now able to plan accordingly.

Previously maintenance was more akin to putting out fires.

Substantial reductions in the volume of lost product, which is a normal occurrence with plastisol production processes, are providing additional cost savings. That, in turn, has allowed for less waste to be hauled and handled by waste treatment companies.

Reducing waste disposal costs in Europe, where environmentally friendly business practices are strongly encouraged, provides not only financial savings, but also helps the company employ sustainable business practices.

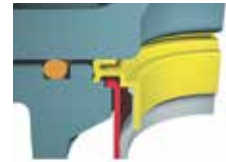
Eaton is now enjoying a mutually beneficial business relationship with a major international business customer, and today supplies 100 percent of the company's liquid filtration products.



### Eaton's TOPLINE bag filter vessel

From its high-performance design to its investment-cast components, everything about TOPLINE is simply the best.

TOPLINE's side inlet, flow through the top design results in a minimum headroom of unfiltered liquid for easy bag change out, as well as providing optimum sealing of the filter bag.



### SENTINEL® Seal Ring

All SENTINEL filter bags utilize the SENTINEL seal. Its all-plastic construction provides a flexible, chemically resistant seal which adapts to any filter housing. This unique design employs a pressure activated sealing lip which responds to increases in differential pressure.

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