TOTAL FILTRATION SERVICES

Achieving Significant Cost Savings at an Automotive Assembly Plant

Customer Case Study

PROFILE

Extensive experience in paint booth management allowed TFS field experts to provide technical support and improve the performance of paint booth operations at a large automotive assembly plant. Read the full case study to learn how TFS recommendations resulted in cost savings exceeding $156,000.

CHALLENGE

A major automotive manufacturer and current customer asked TFS to review the filtration used in the air supply house for their OEM paint booth. The customer was using 20x20x1 stainless steel mesh filters for the primary stage of filtration in a 3-stage system.

With the air supply house being a recirculating air system, paint was getting into the air stream when water levels would get lower than what the system was designed for and was collecting onto the mesh filters. Once dry, the paint would cause the filters to blind-off, resulting in diminished air flow to the paint booth.

Although the mesh filters were designed to be reusable, they would often suffer damage under increased water pressure when trying to remove dried paint.

A replacement set of the mesh filters would cost the customer nearly $13,000 per quarter for just one air supply house at the plant. Finding a more efficient, yet cost-effective solution for the primary stage of filtration was the clear challenge in this situation.

THE TFS SOLUTION

After taking measurements and drawing upon years of experience managing paint booth filtration, TFS recommended the Viskon-Aire 440HC, a 3- pocket cube with depth-loading, lofted polyester media. Going with a cube filter meant increasing the amount of media from 2.8sq ft to 12.5, thereby reducing the number of change-outs needed per quarter.

The customer approved a 6-month trial period to test the TFS solution in the air supply house for the OEM paint booth. This was an important step in the process of getting a new filter approved, as automotive manufacturers require all new filters introduced to a critical process to be approved by the engineering group.

RESULTS

At the conclusion of the trial, TFS analyzed the cube filters and confirmed they were depth loading as expected, so there weren't issues with bypass or filter blow-outs.

Over the next 4 years, TFS was asked to apply the same solution to the other air supply houses, as the new filter continued to perform without any issues.

TFS worked with the customer to confirm the following process improvements and cost savings as a result of switching from the stainless-steel mesh panel to the Viskon-Aire 440HC cube filter:

- The customer has realized an annual cost savings of $156,725.00 in materials.
- Labor and waste disposal expenses were reduced by 50%.
- The increased performance of the primary stage filter has prevented paint quality issues — which carry a potential cost of at least $100,000 per shift to address paint defects (based on 20% of vehicles needing to be re-painted).