

Case Study

Enhancing Efficiency and Cost Savings in Automotive Manufacturing



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A global automotive company sought to reduce their costs and energy usage. MANN+HUMMEL and an integrated partner teamed up to tackle the challenge.



PROBLEM

Improving operational efficiency and minimizing costs in paint booth facilities



SITE

Automotive manufacturing facility



OUTCOME

Enhanced efficiency and cost savings in automotive manufacturing

In the highly competitive automotive industry, optimizing operational efficiency is essential for maintaining success and staying ahead of the curve. When a global automotive manufacturer sought to enhance efficiency and reduce costs within their paint booth facilities, MANN+HUMMEL teamed up with an integrated partner to provide expert air filtration solutions. MANN+HUMMEL, a global leader and expert in air filtration solutions, was well-equipped to tackle the challenges faced by the manufacturer's facilities.

IDENTIFYING THE ISSUE

Upon assessing the air filtration systems within the manufacturer's plants, our MANN+HUMMEL experts identified several issues impacting the business's operations.

1. Various suppliers were contributing to the air filtration system, resulting in inefficiencies throughout the plants.
2. The downdraft flow in the paint booths was insufficient, which allowed cross-contamination between different color paints.
3. There were several shipping containers filled with excess inventory of air filters, exacerbating their expenses.
4. Filters were changed and discarded based on a yearly schedule without assessing the remaining lifespan of each filter.

The manufacturer's approach to filter management was ill-advised, leading to overconsumption of resources and subpar performance of their paint booths.

IMPLEMENTING A SOLUTION

When our MANN+HUMMEL filter management program arrived, they conducted an exhaustive inventory of all filters to determine their usability. This allowed our team to consolidate and relocate the entirety of the stock to optimize storage space, freeing up the plant from cluttered storage containers, all while ensuring compliance with safety regulations. They were able to eliminate redundancies in the process, saving the automotive company over \$70k that year, as well as bring cost savings from scaling down on staffing needs to maintain that inventory.

Our team then performed investigations of the filters using magnahelic and manual pressure gauges, collecting all relevant data and creating a database system that could be shared with plant managers and engineers. Also, by adding a reverse cube extended surface filter in front of the prefilter, they were able to extend the life of the final filter (which has the highest cost) and produce over \$20k in savings annually.

Most importantly, our team introduced a proactive filter management program tailored to the manufacturer's specific needs by leveraging advanced data analytics and predictive maintenance

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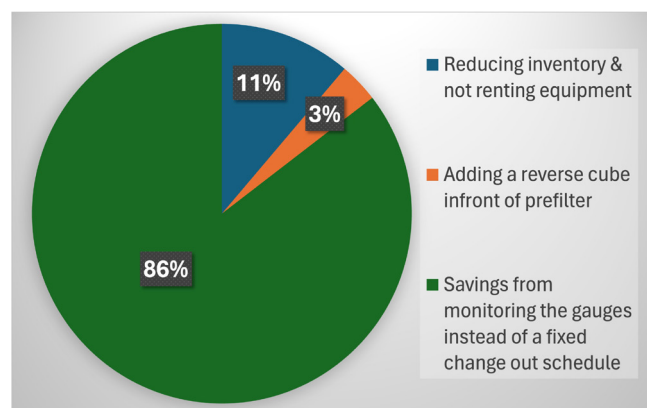
techniques to optimize filter change rates based on performance metrics rather than arbitrary schedules. Reducing filter changes resulted in over half a million dollars in savings, with less waste produced and consequently, a better environmental impact.

THE RESULTS

MANN+HUMMEL and our partner's solutions of optimizing air filter usage and cutting out redundancies in inventory yielded remarkable results. The manufacturer's annual spend on filtration was reduced by 28% from 2018 to 2020, and by 38% in just one of the 4 plant locations. Our project manager briefly summarized the success of this effort saying: "The filter program drives value in multiple ways:

1. More efficient use of filter media by changing filters based on performance metrics.
2. Detailed reports of system and filter bank status and performance.
3. Providing the ability to set a static monthly budget for filter media needed to support production.
4. Managing inventory line-side to reduce downtime and allow same-day access to replacement inventory.
5. Providing insight into current processes to identify improvements and drive cost savings."

Through calculated and innovative air filtration solutions, MANN+HUMMEL addressed the immediate challenges faced by the manufacturer's plants and laid the foundation for sustained operational success. By choosing MANN+HUMMEL for a strategic partnership, the global automotive leader was empowered to thrive in an ever-evolving marketplace.



MANN+HUMMEL & integrated partner's cost savings



MANN+HUMMEL - Air Filtration Americas

112 S. Respass St.
Washington, NC 27889

T +1 877 752 5811

airfiltration.mann-hummel.com/us-en

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