

Application

Monitoring oil vapor and particle levels in compressed air for automotive painting.

Goal

Achieve flawless finishes through clean, consistent compressed air.

Sector

Automotive painting and coating.

Customer

European refinishing company for premium alloy rims.



Flawless Paint Quality through Advanced Compressed Air Quality Monitoring

Overview

A leading automotive refinishing workshop, renowned for premium rim finishes and precise craftsmanship, aimed to refine its production quality even further. To achieve perfect and durable coatings, the client focused on maintaining the highest purity of compressed air used in the painting process.

Challenge of the Customer

Despite using advanced spray technology, the client experienced recurring paint defects such as craters and uneven textures on alloy rims. Analysis showed that impurities in the compressed air—mainly oil vapors from the compressor and fine particles from filters or pipe corrosion—were contaminating the paint booth air.

Even minimal traces affected coating adhesion and surface quality, leading to inconsistent finishes, rework, and material waste. Continuous air quality control became essential to ensure stable production and flawless results.

Solution and Implementation

Initial Audit: The project began with an initial on site audit using the **S120 Oil Vapor Monitor**, the **S132 Particle Counter**, and an **S551 Portable Data Logger** to record air quality over several days. The logged data revealed clear issues in the compressed air system, including irregular oil vapor peaks and increased particle levels caused by insufficient filtration performance.

Continuous Monitoring: Based on these findings, the workshop decided to install the S120 and S132 as permanent monitoring points. Both sensors were integrated into the plant management system and equipped with an alarm function to notify operators immediately when air quality drifted outside defined limits. This setup ensured continuous control and stable air purity throughout the entire painting process.



Results

- **Perfect Paint Finish:** Continuous air monitoring prevented contamination, ensuring smooth and uniform coatings.
- **Stable Production Quality:** Real-time data provided full visibility into air purity and process stability.
- **Reduced Rework:** Cleaner air led to fewer paint defects, higher efficiency, and lower material waste.
- **Sustainable Process:** Optimized air quality monitoring supported energy efficiency and environmentally responsible production.

Conclusion

By implementing the SUTO iTEC S120 Oil Vapor Monitor and S132 Particle Counter, the automotive refinishing workshop achieved flawless paint finishes and long-term process reliability.

Continuous compressed air quality monitoring eliminated invisible contaminants, ensuring consistent product excellence and sustainable operation.



S120 Oil Vapor Monitor



S132 Particle Counter



Be smart. Measure it.