

CASE STUDY

BACKGROUND

An industrial plastics manufacturer operating multiple U.S. plants was facing costly issues with dirty hydraulic oil in their plastic molding presses used to produce automotive components. Oil contamination was impacting machine efficiency and increasing maintenance demands, creating a need for a more reliable filtration solution.



CHALLENGE

Hydraulic oil samples were testing at critically high contamination levels - ISO 24/23/21 - posing a threat to press performance and system longevity. The plant was using brand-named filter elements, which exhibited poor efficiency, inconsistent performance, and low dirt-holding capacity. These elements required frequent replacement, often in hard-to-reach locations, draining maintenance resources and increasing downtime risk.

COLLABORATION

Scott Industrial Systems partnered with **Schroeder Industries** to identify a long-term, cost-effective solution that would improve filtration performance and reduce operational disruptions.

SOLUTION

A multi-layered filtration strategy was implemented, including:

- A **Total Fluid Condition** test machine to assess oil cleanliness.
- A **filter cart** for clean oil transfers and system flushing.
- Installation of **duplex filter assemblies** on several molding presses to allow filter changes without halting production.
- **Replacement** of filter elements with Schroeder elements in 3µm, 5µm, and 10µm ratings.
- Upgrading the **dehydrator filters** with Schroeder elements for consistent filtration across systems.

VALIDATE

To validate performance, **side-by-side lab testing** was conducted at Schroeder's facility. The results showed Schroeder elements:

- Captured more particles with higher efficiency.
- Maintained consistent performance throughout their service life.
- Offered greater dirt-holding capacity than the other elements.

RESULT

Oil cleanliness dramatically improved to ISO 16/14/11 - a substantial reduction in contamination. This translated to:

- ✓ Reduced maintenance frequency and labor.
- ✓ Fewer hydraulic failures and press issues.
- ✓ Improved equipment reliability and uptime.

The success of this solution led to implementation at additional facilities.

CONCLUSION

By upgrading to high-efficiency filtration components and validating results through real-world and lab testing, this manufacturer was able to **reduce contamination, improve operational efficiency, and lower total maintenance costs** - setting a new standard for hydraulic oil cleanliness in their production facilities.