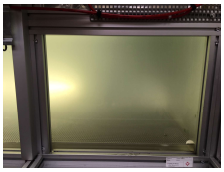
Klarwin Automotive & Industrial Technology

CASE STUDY

WATER CLARIFICATION TO ALLOW VISIBILITY IN BUBBLE TEST



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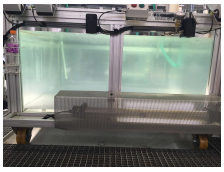

(3)

Application:

A popular leak test for the sealing of assemblies, used by a gearbox manufacturer, is submerging them into a bath of water and observing air bubbles escaping from the inside of the assembly.

Volume: 1000 L

Problem:

After several components' testing, the visibility in the tank decreases, due to the contamination from the surface of the components, leading to low effectiveness of the test. Changing the water twice a week resulted in a not so cost-effective process, considering water cost, waste disposal costs, maintenance cost and corresponding downtime.

Solution:

Pall SUPRAdisc II are stacked disc modules that have the high dirt holding capacity of filter sheet-based products in a closed system. The filtration effect of these sheet-based products is based on a combination of surface, depth, and adsorptive filtration. Selected combinations of cellulose, very fine kieselguhr (diatomaceous earth/DE) mixtures and perlite in the **K300** type filter media, are responsible for the clarifying effect. A custom filtration system containing two SUPRAdisc II module (2), with a filter bag upstream, was mounted in a kidney loop with low flux density, to ensure adsorption of fine particles from the water.

The results were visible after only 30 minutes of operation (3). Laboratory analysis revealed a decrease of max metallic particle size from *4486 µm to 200 µm*. The ISO 4406 cleanliness class decreased *from -/13/12 to -/10/8*.

The same successful solution is implemented in a bubble test for diesel pumps sealing, at another customer site.

Benefits:

- ✓ Efficient testing – less client complaints
- ✓ Less consumption of demi water and rust inhibitor
- ✓ Less waste water
- ✓ Less maintenance cost
- ✓ Production time increased
- ✓ Reduced operating costs.