

RPA Process Technologies

Environmental Concerns Prompt Ink Manufacturer to Install DCF Filter

Meets Particle Size Retention Standards

Provides Low, Constant Differential Pressure

Eliminates Cost and Mess of Bag Filter Disposal

Enables Recycling of Product

SITUATION

Progressive Ink manufactures printing inks for flexible packaging, such as snack packaging, milk cartons and bread bags. In the St. Louis, Missouri manufacturing facility, pressurized bag filters used in the fill area were generating a lot of waste. During a batch run, up to twenty filter bags were replaced and thrown away. Progressive Ink was concerned about the large amounts of waste generated and its effect on the environment. There were other problems too. Occasionally, a bag would rupture and contaminate the ink being processed for shipping. Progressive Ink also experienced variations in the filtering performance of the bags.

RPA PROCESS TECHNOLOGIES SOLUTION

With few solutions available on the market, Progressive Ink had trouble finding a filter that could filter tight enough to meet the industry requirements of at least 75 micron retention. Their extensive search ended with the Ronningen-Petter Mechanically-Cleaned DCF filter — which offered filtration capabilities well beyond the industry standard. The company installed a DCF-800 filter that filters to 50 micron. It is equipped with pneumatic timers, Teflon[®], seals, a pneumatic actuator used to move the disc and clean the screen and a purge valve actuator that, when activated, rids the housing of collected debris. Operation of the DCF is easy, and it features a stainless steel pressure-rated housing. The DCF's filtering screen is specially machined so material will not get wedged into the media surface.

RESULTS

The DCF filter's specially machined filtering screen offers concise and consistent particle retention, so Progressive Ink no longer suffers from variations in filtering performance. And, Progressive Ink is able to reprocess its collected waste. Waste collected by the Ronningen-Petter DCF filter is highly concentrated, so that overall purge volume is extremely small. The small amounts of waste collected in the DCF purge chamber are transferred back to the premix tank. Reprocessing rather than disposing of collected waste saves disposal costs and reduces product loss. Progressive Ink is also very pleased with the



APPLICATION DETAILS

Filter Model: DCF-800
Type of Liquid: Solvent-based packaging ink
Pressure: 10 psig (0.7 bar) average, 40 psig (2.7 bar) maximum
Temperature: Ambient
Viscosity: 940 cps
Flow Rate: 24-30 gpm (90-114 l/min)
Discharge/Purge Control: Pneumatic timer
Filter Retention: 50 micron
Elastomers: Teflon[®]

consistently low differential pressure the DCF filter maintains, and the even throughput levels it provides to the fill line.

CONCLUSION

The Ronningen-Petter DCF filter provides environmentally sound filtration while improving the ink's overall quality. Frank Davis, maintenance superintendent at Progressive Ink said, "We plan to replace all of our bags with DCF filters."

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INFORMATION

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