



CASE STUDY

EDG-trac™ Knife Advance System Performance Evaluation for Rotary Vacuum Filters

Tristar, Ltd. is a manufacturer of fabricated components and equipment, including re-manufactured filtration systems. The EDG-trac™ Knife Advance system (EDG stands for encoded digital guidance) is an ancillary system for a rotary vacuum drum filter (RVDF), which consists of an advancing knife, single motor gear drive, and associated controls. In the EDG-trac™ Knife Advance system, accumulated solids are cut away from the filter drum surface much more efficiently, while maintaining acceptable solids separation and improving liquid throughput.

Challenge

Re-manufacturing is an important means of extending the life of a product and reducing environmental impacts. It was anticipated that, when compared to conventional systems, a re-manufactured filter system, which incorporated the newly designed EDG-trac™ Knife Advance System, would use less energy and water, produce a drier sludge cake, and have a higher filtrate throughput. NYSP21 assisted Tristar with quantifying these improvements.



Solution

NYSP21 performed a comparative analysis of the two systems at a chemical manufacturer who was replacing two traditional RVDF systems with two re-manufactured systems built by Tristar. The performance of the traditional operating RVDF system and Tristar's re-manufactured "EDG-trac™" system was measured using the following key parameters: energy use, filtration rate, sludge moisture content, and effluent quality (suspended solids).

Results

The Tristar EDG-trac™ Knife Advance System, as installed in a re-manufactured rotary vacuum drum filter, exhibited the following performance results as compared to a traditional RVDF system:

- 700% on average increase in water filtration throughput
- 87.4% reduction in energy use, per gallon filtered
- Comparable sludge moisture content, and suspended solids removal efficiencies
- Tristar is targeting the creation of 5 NY State jobs to expand manufacturing of EDG-trac™

Testimonial

"Through its Green Technology Accelerator Center (GTAC), the New York State Pollution Prevention Institute (NYSP21) provided an independent analysis of our EDG-trac™ Knife Advance System as applied to an industrial chemical separation process. NYSP21 identified an 87% reduction in energy utilization and a 700% improvement in water filtration throughput as compared to a traditional rotary vacuum drum filter. NYSP21's independent assessment will provide significant support as we expand our business in this industrial sector. We sincerely appreciate the efforts and support of NYSP21."

- Hubert Jeras, President, Tristar, Ltd.

CHALLENGE

- Quantify energy reduction, suspended solid removal efficiency, and increased throughput for Tristar's re-manufactured EDG-Trac™ filtration system as compared to a traditional RVDF system

SOLUTION

- NYSP21 performed a comparative evaluation EDG-Trac™ vs. the baseline RVDF filtration system

RESULTS

- Tristar's EDG-Trac™ system demonstrated the following improvements over the baseline RVDF:
 - 700% increase in water filtration throughput
 - 87.4% reduction in energy use, per gallon filtered

NYSP21 PARTNERS



10 Regional Technology Development Centers

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