

Short Lead Times to Match Rapid Growth in Bio-based Diesel Fuel Refining

Challenge

ecoFuels Netherlands BV needed 32 magnetic drive pump sets with an unusually short lead time for its plant where used cooking oil is converted into high-quality diesel fuel. The facility produces about 50,000 tons of biodiesel per year and its operators plan to expand to meet the growing demand for a sustainable alternative to fossil-based diesel fuel.

Solution

Flowserve responded by assembling to order 12 INNOMAG® TB-MAG™ lined magnetic drive chemical process pumps and 20 Durco® Mark 3™ ISO MAG metallic magnetic drive chemical process pumps. Multiple alloys and configurations in pumps from other suppliers can drive long lead times and unreliable due date performance. We delivered the pump sets in 12 weeks. The versatility and simplicity of INNOMAG TB-MAG and Durco Mark 3 ISO MAG pumps make it possible to quickly ship from stock with better than 98% on-time delivery.

Realizing biodiesel potential at scale

In European countries, bio-based fuels represent the largest proportion of renewable energy available as an alternative to fossil fuels for transportation. Demand is expected to continue to increase as companies and nations work toward achieving significant reductions in emissions from conventional fuels, which contribute to greenhouse gases that cause climate change.

At the same time, huge amounts of used cooking fats and oils and food waste are generated in the restaurant and food industries. In Eemshaven, the Netherlands, ecoFuels Netherlands BV collects used cooking oil and food waste and then filters and refines it. The resulting product is a cleaner diesel fuel.

Burning it to run cars, trucks, buses and trains releases 80% less carbon dioxide (CO₂) compared to fossil diesel.



The ecoFuels Netherlands BV, a part of the Bio Oil Group, converts used cooking oil into high-quality biodiesel fuel.

Revolutionary sealless design ensures INNOMAG pump reliability

To support the refining of biodiesel fuel, Flowserve supplied 12 INNOMAG TB-MAG lined magnetic drive pumps and 20 Durco Mark 3 ISO MAG metallic magnetic drive pumps. Our flow control specialists also worked alongside the ecoFuels Netherlands BV team to install and commission the pumps in various collection, filtration, esterification and transesterification processes.

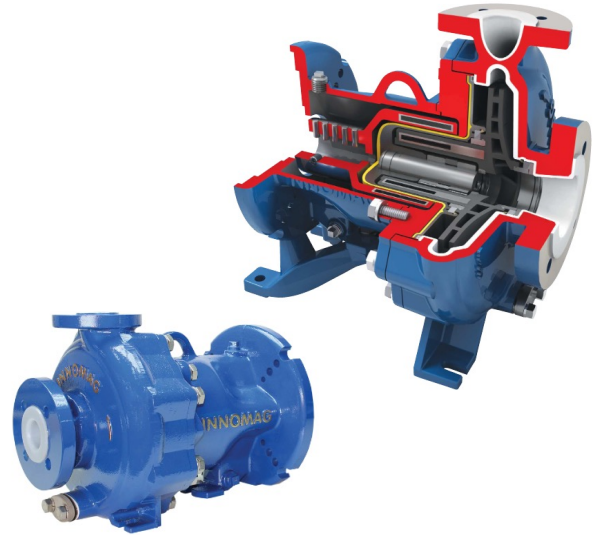
INNOMAG TB-MAG and Durco Mark 3 ISO MAG pumps are ideal for biodiesel production because they have no mechanical seals that can fail.

The key to the proven INNOMAG TB-MAG pump performance is its revolutionary dynamic thrust balancing. This cleverly engineered system eliminates the need for thrust bearings and results in outstanding reliability. Efficient performance over the entire flow range is also achieved.

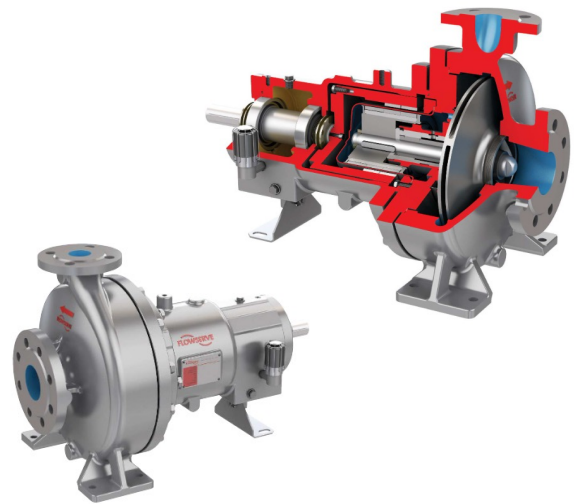
This unique and patented technology not only takes sealless pump reliability to a whole new level, but also makes the INNOMAG TB-MAG pump the first and only sealless pump capable of handling significant solids — up to 30% concentration by volume and up to 6.35 mm (0.25 in.) particle size.

In addition, INNOMAG TB-MAG and Durco Mark 3 ISO MAG pumps are hermetically sealed. That means no leaks when they work and, in most cases, no leaks — even if they fail. As a result, they're not only cleaner and safer for operators and the environment but also more cost-effective, consuming 10 to 46% less energy on average than typical sealed and sealless pumps.

Finally, contamination of the biodiesel fuel by metallic ions from the INNOMAG TB-MAG pump material is prevented by a pure ethylene tetrafluoroethylene (ETFE) casing liner. ETFE provides high corrosion resistance and strength over a wide range of temperatures.



The INNOMAG TB-MAG lined magnetic drive chemical process pump from Flowserve



The Durco Mark 3 ISO MAG metallic magnetic drive chemical process pump from Flowserve



Global support for shortened lead times

Shortened lead times for process pumps is critically important to ecoFuels Netherlands BV as the company scales up operations to meet the needs for cleaner fuels within the transportation sector.

Flowserve met the timeline requirement by delivering 32 INNOMAG TB-MAG and Durco Mark 3 ISO MAG pumps in 12 weeks. We assembled them to order from components available in our Center of Excellence for Magnetic Drive Pumps in Belgium. Local strategic relationships with key suppliers also ensured that motors were available to match unique customer needs.

In addition, Flowserve engineers and service technicians in the Netherlands collaborated with ecoFuels Netherlands BV and promptly provided information at each step of the project.

Partners in energy transition

Sustainability is a primary objective for ecoFuels Netherlands BV, a part of the Bio Oil Group, which operates five biodiesel refineries across Europe.

Cooking oil and food waste have to be disposed of every day. Instead of being buried in a landfill, they offer huge potential as a green energy source for personal and public transportation and commercial fleets. By processing them into an alternative to fossil diesel, ecoFuels Netherlands BV is taking a major step toward its goal of a long-lasting environmental transformation.

Through projects like this, Flowserve likewise demonstrates its global leadership in critical energy transition initiatives.

Customers can leverage our 225 years of fluid motion control experience and comprehensive portfolio of product and service solutions to diversify their energy mix, decarbonize their operations, and digitize their plant processes. As your partner, Flowserve also can help you to enhance operational efficiency while supporting your energy transition goals.



Read Flowserve's approach to [energy transition](#).

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