

# Ethanol Producer Reduces Wear, Saves US\$20,000 with Tank Cleaner



## Problem:

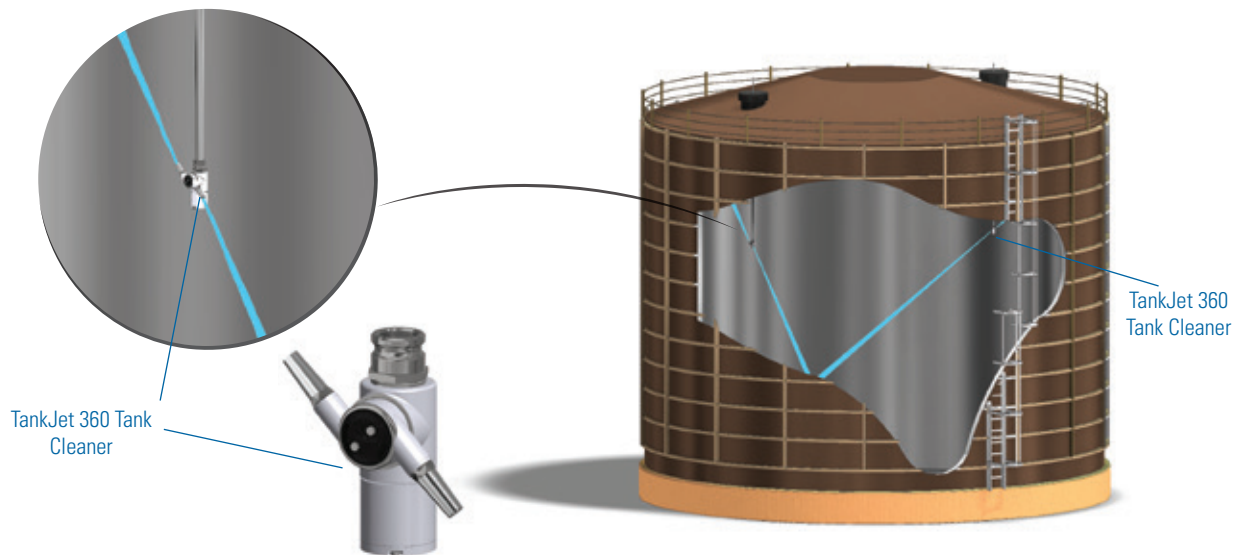
Front Range Energy, a manufacturer of fuel ethanol and other high-value co-products, needed to clean out 50 foot (15 m) diameter fermentation tanks. The company had experienced a number of issues with the clean-in-place (CIP) process, putting several tank cleaning nozzles through their paces with no luck. Filtered cleaning fluids, which contained abrasive, caustic chemicals, were recirculated, causing problems such as excessive wear and damage to gears, sidewalls and other components within the nozzles.

Front Range Energy required a tank cleaning system that would make its CIP process more consistent and improve cleaning efficiency, while reducing wear issues, component repair costs and maintenance labor costs.

## Solution:

Spraying Systems Co. installed two TankJet® 360 fluid-driven tank cleaners in one fermenter. This device's high-impact, high-efficiency 0.375 inch (9.5 mm) nozzles rotated 360° in horizontal and vertical planes, creating a criss-crossing pattern to thoroughly remove residues. The tank cleaners delivered consistent impact over the entire pressure range, resulting in shorter cycle times (19 min), so that tanks were returned to service more quickly.

The design of the TankJet 360, which was configured to meet Front Range Energy's specific cleaning needs, minimized exposure of the nozzle's internal components to the caustic fluids. This resulted in greatly reduced maintenance time and expense. The overall performance of the TankJet nozzles was so impressive that it led to the installation of eight additional units.





## Ethanol Producer Reduces Wear, Saves US\$20,000 with Tank Cleaner – Continued

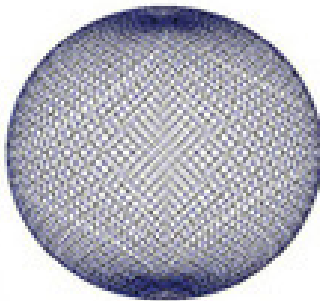
### Results:

After two years of operation, the Spraying Systems Co. TankJet cleaners have maintained Front Range Energy's high cleaning standards. By standing up to abrasive materials and caustic cleaning fluids, the TankJet 360 nozzles proved to be much more durable than the previous units, leading to much less frequent replacement, reduced labor for maintenance and zero repair costs.

With 10 TankJet 360 units in operation, the company estimated its annual savings at US\$20,000, providing a payback period of less than two years.

### A CLOSER LOOK AT THE SYSTEM

**TankJet 360** is a fluid driven tank cleaner that provides high-impact cleaning of tanks up to 100' (30 m) in dia. Nozzles rotate in 360° in horizontal and vertical planes creating a crisscrossing pattern that removes sticky, stubborn residues. The unit outperforms other fluid driven tank cleaners by providing more consistent impact over the entire pressure range. TankJet 360 is compact, fitting in tank openings as small as 6.25" (15.9 cm).



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