



TANK CLEANING & ON-SITE SUPPORT FOR THE ETHANOL INDUSTRY

REDUCE TANK CLEANING
DOWNTIME WITHOUT RISKING
CONTAMINATION



Spraying Systems Co.[®]

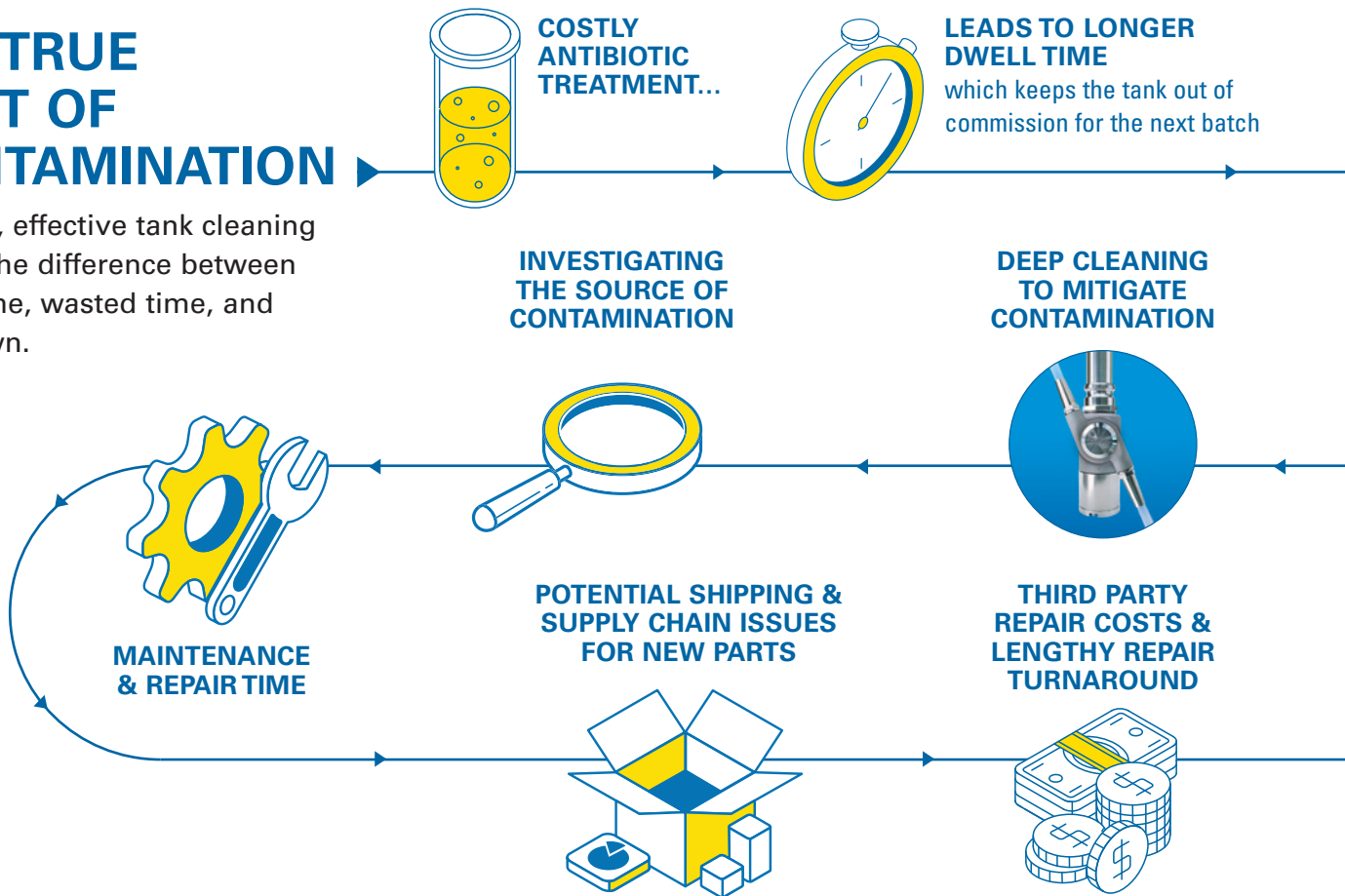
IDLE TANKS AREN'T EARNING

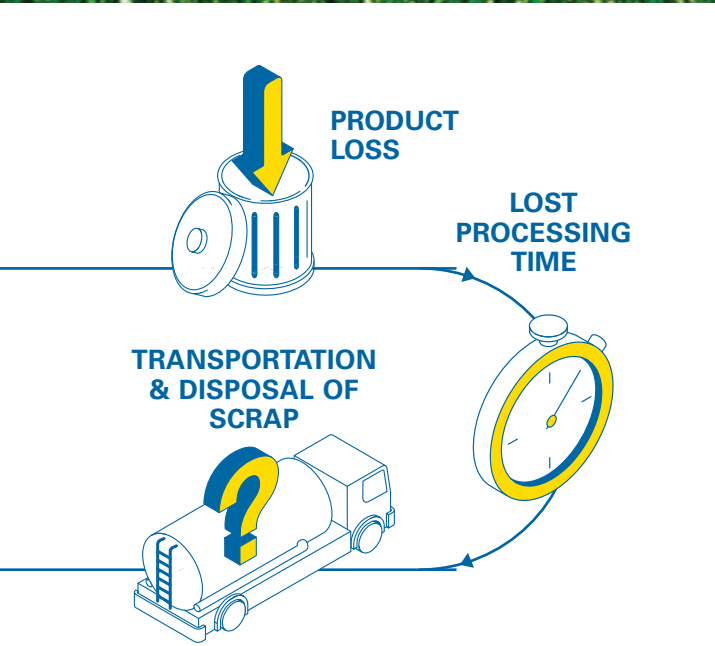
In ethanol production, everyday you have to address a range of competing priorities. Fermentation tank cleaning can be one that is easy to ignore. Too often, 'out-of-sight, out-of-mind' means waiting until a failure occurs. You can reduce your regular cleaning cycle downtime without risking tank contaminations that waste fermentation time, require costly antibiotic treatments, and force unplanned shutdowns.

You lose more than scrapped product the longer tanks are out of service.

THE TRUE COST OF CONTAMINATION

Efficient, effective tank cleaning can be the difference between downtime, wasted time, and shutdown.





What is your risk of fermentation tank contamination for one tank?
Two? Three?

→ **Consider your risk if multiple fermentation tanks you operate were contaminated.**

The Causes of Tank Contamination



Incorrectly sized nozzles causing insufficient throw and reach



Insufficient pressure for reach and impact



Incorrect configuration with pump capacity and available liquid pressure



Insufficient nozzle maintenance diminished capacity and efficacy



Nozzle pluggage causing inadequate flow through



Nozzle failure

TURN TANKS FASTER

CLOUD-SELLERS® 360 FLUID-DRIVEN TANK CLEANING MACHINE – OPTIMIZE YOUR FERMENTATION TANK CLEANING OPERATIONS



 **US-BASED
MANUFACTURING**

THE RIGHT SIZE NOZZLE FOR YOUR OPERATION

Beware of spray providers who offer a one-size-fits-all solution. The right nozzle depends on tank size, how you operate, and pump capacity. A spray nozzle that's incorrectly sized won't have sufficient reach for the furthest throw which means the tank won't be effectively cleaned. Correctly sized spray nozzles provide the maximum impact on fermentation tank walls. The Cloud-Sellers 360 fluid driven tank cleaner comes in a double or triple nozzle configurations and is designed for tanks up to 100 ft. (30 m) in diameter.

SLOWER GEAR ROTATION RATIO

A slower rotation doesn't just reduce wear-and-tear on moving metal components; it also allows for increased impact on the wall of the tank for a more thorough cleaning.

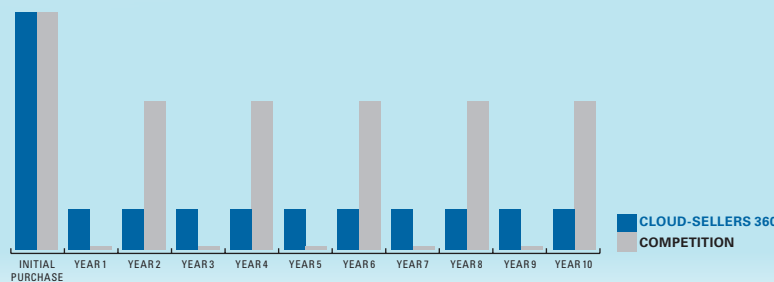


SEALED GEAR BOX

Flow-through units allow debris into the gearbox, causing premature wear. A proper seal helps keep debris and liquid away, extending the life of the gears and seals.



LOWER COST OF OWNERSHIP OVER THE LIFE OF THE NOZZLE



REAL-TIME TANK CLEANING INSIGHT

THE SPRAYCHECK® ROTATION MONITOR LETS YOU MONITOR YOUR TANK CLEANING CYCLES IN REAL TIME

ROTATION MONITOR

This communication hub is designed for up to three tank systems.

The Rotation Monitor uses the sensor signals to monitor performance and communicates with the plant network and remote monitoring. Upload the data to the cloud or to your control room dashboard. The waterproof monitor box has flexible mounting and connections for all system cables.



Listening for tank wall impact or looking through a sight portal is ineffective. Pulling a lance and spray ball is inefficient and resource-intensive, especially at night with limited manpower and visibility.

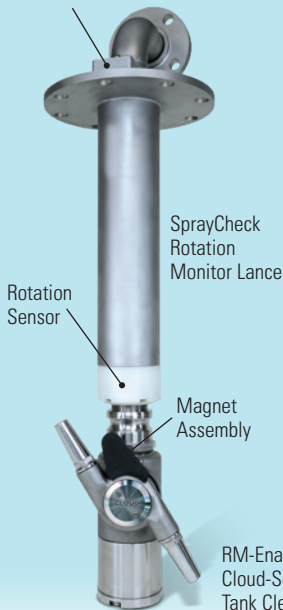
Our patented SprayCheck Rotation Monitor tracks your tank cleaner's revolutions, pressure, and temperature in real-time. Unlike monitoring systems that utilize a pressure sensor mounted on the tank wall or ceiling to record one impact per cycle, SprayCheck sensors are located on the lance and fluid supply line to collect continual data, ensuring that your tank cleaner is operating properly. Our digital alarms and performance reporting allow for remote monitoring wherever you are in your facility.

REMOTE MONITORING DASHBOARD

View remote monitoring for tracking and analyzing performance from your portable device. Store data history and personalize configurable dashboard alerts.



Rotation Sensor Connection



ROTATION MONITOR LANCE, SENSORS & RM-ENABLED TANK CLEANER

Made for acid and corrosive cleaning and rinsing applications our configurable sensor-enabled lance use typical tank entry flanges. The lance features robust electrical connections, internal cabling protected in the shield tube. The Rotation Monitor Lance works with the RM-Enabled Cloud-Sellers® 360 fluid driven tank cleaner. The temperature and pressure sensors are installed on the fluid supply line plumbing.





THE SPRAYING SYSTEMS CO. PERIODIC MAINTENANCE PROGRAM

With regular inspection and servicing, you can achieve better cleaning consistency, reduced downtime, lower operating costs, reduced consumption of water and chemicals, and longer service life.

The Spraying Systems Co. Periodic Maintenance Plan can save you more than 50% in maintenance and repair cost.

MAINTENANCE & REPAIR OPTIONS

FACTORY MAINTENANCE & REPAIR

Ship your machine to Spraying Systems

- Turnaround in as little as 48 hours

We will:

- Inspect critical wear components for signs of damage
- Disassemble, clean, and replace worn parts
- Restore peak performance with new seals, bearings, and nozzles
- Conduct a full system test

Many companies offer maintenance 'kits' that replace every component, whether or not it's needed. At Spraying Systems Co., we address only the parts that need repair or replacement.

Call 630.665.5000 to schedule repairs





ON-SITE MAINTENANCE & REPAIR

Spraying Systems Co. technicians will come out and repair your units on-site.

We will:

- Inspect critical wear components for signs of damage
- Disassemble, clean, and replace worn parts
- Restore peak performance with new seals, bearings, and nozzles
- Conduct a full system test

Maintain your tank cleaning system without draining your resources

*SprayEASE*SM

With our Efficiency Subscription:

We calculate your Optimal Replacement Point (OPR) using usage and projected wear date. When continued operation begins costing more than replacement, we automatically ship replacement parts.

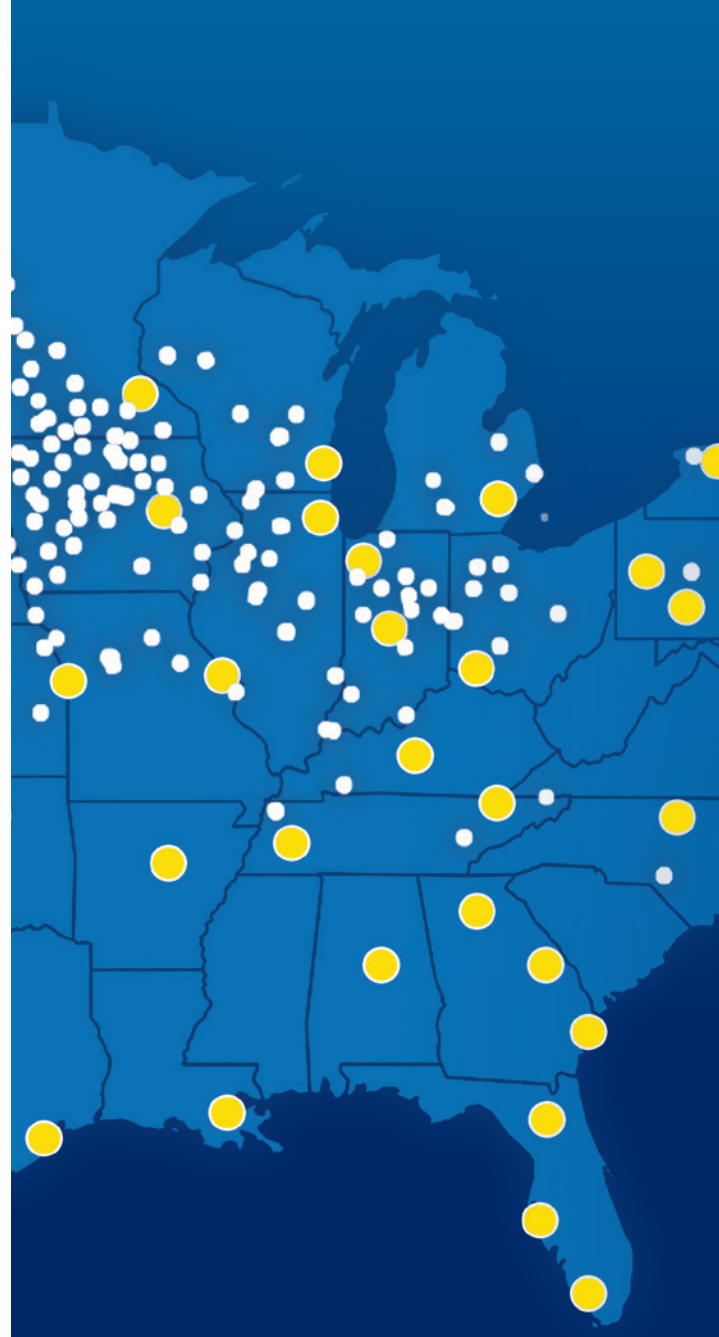
With our Implementation Assurance:

We manage maintenance, installation, and replacement from start to finish, and our partnering service contractor supplies the manpower.

ON-SITE, HANDS-ON MAINTENANCE TRAINING FOR YOUR TEAM

Learn how to identify worn components, troubleshoot issues, and perform routine maintenance before you risk a unit failure.

- Receive step-by-step instruction on disassembly, cleaning, and part replacement
- Learn preventative maintenance best practices
- Reduce the number of nozzles you need to send in for factory repair



● ETHANOL PLANT LOCATIONS

● SPRAYING SYSTEMS CO. LOCATIONS

RIGHT WHERE YOU NEED US

- We offer three U.S.-based service centers – Wheaton, IL and San Luis Obispo, CA, and Chester Springs, PA
- Readily available parts; no supply chain delays or interruptions; shorter turnaround time



BEYOND FERMENTATION – OUR NOZZLES & SPRAY EXPERTS WILL MAKE AN IMPACT ACROSS YOUR OPERATION

- **Effective cleaning** of all your tanks, regardless of size and shape
- **Shorter downtime** – more efficient cleaning gets your tanks back into production faster
- **Improve worker safety** – by keeping your team out of the confined spaces in tanks
- **Lower consumption** of water and costly chemicals
- **Less water means lower energy** required to heat water for distillation
- **Single source suppliers eliminate third-party cleaning vendors**



WE HAVE A NOZZLE FOR THAT...

TANKJET® AA190 MOTOR-DRIVEN TANK CLEANER

- Designed for tanks up to 40 ft. (12.2 m) in diameter
- Thorough, high impact tank cleaning
- Worry-free operation



GUNJET® TRIDENT™ SPRAY GUNS AVAILABLE IN LOW- AND HIGH-PRESSURE VERSIONS

- Lightweight design with ergonomic grip reduces fatigue during long cleaning shifts
- Springless trigger reduces pull force and improves stream integrity



CLOUD-SELLERS® B & BX INJECTORS

- Feed devices that increase pressure for higher impact cleaning of tough residues
- No pumps or heat exchangers required



USE LESS, CONSUME LESS, WASTE LESS, & RISK LESS – PUTTING SUSTAINABILITY INTO PRACTICE

The shortlist of plant priorities includes productivity, savings, efficiency, product quality and safety. That's not surprising. But did you know that increasing your plant's sustainability can help you achieve these objectives?

Every day, we help companies around the world reduce waste, energy, and material use, decrease waste, minimize environmental impact, and improve worker safety.



Spraying Systems Co.®
Experts in Spray Technology

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