



ProTech™
A MARMON RAIL TECHNOLOGY

Mobile Tank Car Cleaning Technology



UTLX®
A MARMON RAIL COMPANY

Tank Car Cleaning that Eliminates Confined Space Entry into Hazardous Product.

Tank car cleaning done right, done on-site & done safely by UTLX

The ProTech™ Mobile Tank Car Cleaning Technology is revolutionizing the tank car cleaning industry with its patented technology with three different tank car cleaning systems. This industry-first technology is offered solely by UTLX in the United States and Procor in Canada.

Whether needed for tank car qualification or change of service, cleaning the interior of the tank car is a priority to get out-of-service cars back in operation.

If you ship, own, operate or lease a fleet of tank cars, ProTech offers a safe, efficient and mobile solution to quickly return cars to service keeping your railyard and fleet in-motion.

- ✓ Safe
- ✓ Versatile
- ✓ On-Site
- ✓ Sustainable

Tank Car Cleaning Systems

1 ProTech Water Filtration Cleaning System

Ideal for light commodities, this method uses a 3D rotary orbital sprayer that uses filtered water to safely and effectively remove minimal residue without damaging the tank interior.

For commodities with liquid residuals including AV Fuel, Diesel, Gasoline, Chemical Products and others.

2 ProTech Steam Injection Cleaning System

Designed for midgrade distillates, this technique uses high-temperature steam to break down and dislodge more persistent buildup, offering a balance of power and precision.

For commodities with minor scaling including Biofuels, Chemical Products, Kosher Products and others.

3 ProTech Automated Cannon Cleaning System

Engineered for heavy or highly viscous materials, this system delivers a powerful directed jet stream capable of removing solidified heels and the most stubborn scaling and deposits without human entry into hazardous product.

For commodities with heavy sediment including Asphalt, Diluted Bitumen, Heavy Crude Oil, Bitumen and others.

We keep your fleet in-motion by bringing focus to these key areas:



Safety

Our autonomous, remotely operated tank car cleaning technology eliminates the most dangerous part of the cleaning process — human entry into the interior

of the tank while hazardous residue is present.

ProTecht, our patented tank car cleaning technology, dramatically reduces workplace hazards, protects personnel, and keeps railyard operations running safely and efficiently. Tank car cleaning is performed in strict compliance with all site safety and environmental rules and regulations.



Versatility

Delivering on-site, advanced, high-throughput tank car cleaning — ProTecht Technology is capable of cleaning multiple cars per day with automated processes that keeps your operation

moving with efficient cleanings that reduce bottlenecks, speed up turnarounds, and meeting the pace of modern rail logistics — all without compromising quality or safety.



On-Site Capability

ProTecht's fully equipped mobile tank car cleaning technology comes directly to your site, eliminating the delays, risks, and costs of off-site shipping. With a compact

footprint and high-throughput technology, we clean tank cars quickly, safely and efficiently without disrupting your railyard operations — keeping your fleet moving, reducing downtime, and cutting overall turnaround costs.



Sustainability

A neglected aspect of tank car cleaning is the large amount of resources — water, detergent and cleaner needed to clean a tank car and the need to stop cleaning

work to offload tanks filled with effluent and restock on water and cleaning fluids. All of which lead to waste, downtime, and inefficient cleaning. With a proprietary closed-loop filtration technology, some ProTecht systems reuse both water and detergent, minimizing resource consumption and waste. Allowing our tank car cleaning teams to work longer without refills or effluent discharge that slow down the cleaning process.



1 ProTecht Water Filtration

Tank Car Cleaning System

For Commodities like:

- ✓ AV Fuel
- ✓ Diesel
- ✓ Gasoline
- ✓ Chemical Products

Light liquid residuals like AV fuel, diesel, and gasoline require a less intensive tank car cleaning process, and the ProTecht Water Filtration Cleaning System is built for exactly that. Using a 3D rotary orbital sprayer that installs easily through the tank car manway, the sprayer rotates 360° through a preset cleaning cycle that sprays the entire tank car interior in under 20 minutes — with no confined space entry required.

Our patented closed-loop water filtration system removes solids and impurities from the waste stream, allowing the purified water to be reused for multiple tank cars. This proprietary, high-efficiency system minimizes the need for constant refills or to offload effluent — enabling faster, safer, and more sustainable cleaning at scale.

Insulated Container containing entirely closed loop system

- **Pumps** – High powered pumps used to deliver water to the sprayer, and to offload effluent
- **Holding Tank** – Stores process water for cleaning, and wastewater effluent pumped from the tank car
- **Hoses** – System of hoses for cleaning and for effluent removal
- **Filtration system**
 - Fully insulated housing designed to work in extreme temperatures
 - Three part filtration system that removes solids, and purifies process water



Insulated Container houses the filtration unit

Water Filtration Cleaning / Styrene



Cleaning hose hook-up process



Before cleaning



After cleaning



3D Rotary Orbital Sprayer – Fastened in the manway, the sprayer rotates a full 360 degrees and sprays down the tank car in 20 minutes



Pump to offload effluent for filtration process



Three part water filtration system and holding tanks for tank car cleaning

2 ProTecht Steam Injection

Tank Car Cleaning System

For Commodities like:

- ✓ Biofuels
- ✓ Chemical Products
- ✓ Kosher Products

Some commodities — such as canola oil, condensates, lube oil, and other midgrade distillates with light scaling — require steam injection cleaning to fully remove contamination from within the tank car. The ProTecht Steam Injection Cleaning System delivers temperatures up to 350°F (180°C), during cleaning.

This entry-less, mobile system uses hoses that reach up to 200 feet and is capable of cleaning two tank cars simultaneously, significantly increasing throughput.

Wastewater Tank

- Holds effluent pumped from tank car during cleaning

200 foot Hoses

- Designed to help clean two tank cars simultaneously
- Specific hoses used in the steam injection cleaning process and for effluent removal
- Length of hoses allows for more tank car cleanings to be done without having to reposition the cleaning system

Insulated Trailer

- Houses storage tanks for water and cleaning chemicals, steam generator for cleaning, and pumping system





Steam generator

Steam Injection Cleaning / Jet Fuel



Before cleaning



After cleaning

Kosher Service

- All cleanings are performed to Kosher certification standards
- If Kosher service is required, a certified technician conducts a Kosher wipe-down after the tank is steam-cleaned, ventilated, and confirmed safe for entry

See page 11 for more on Kosher Service



3 ProTech Automated Cannon

Tank Car Cleaning System

For Commodities like:

- ✓ Asphalt
- ✓ Dilbit
- ✓ Heavy Crude Oil
- ✓ Bitumen

Built for heavy commodities and solidified tank car heels, the ProTech Automated Cannon Cleaning System delivers powerful, patented cleaning technology with unmatched reach and force. At the heart of the system is a high-impact water cannon that sprays water, solvent, or detergent with enough strength to spray over 200 feet — ideal for breaking down and emulsifying hardened heel deposits left inside the tank car.

Equipped with a live video camera and lighting, the cannon is remotely operated from ground level, eliminating the need for confined space entry and enhancing operator safety.

This entry-less, autonomous process uses a multi-stage cycle:

- Solvent spray to dissolve hydrocarbon-based residues
- Detergent wash to remove residual scaling
- Final water rinse to complete the clean

A closed-loop filtration system separates and recycles water, solvent, and cleaner for reuse — conserving resources while reducing waste and operational costs.

The result? Faster cleaning cycles, lower environmental impact, and tank cars returned to service quicker than with conventional tank car cleaning methods.

Dual Compartment Tank

- Stores waste solids in one half, and filtered process water in the other half of the tank

Water Filtration Unit

- Three part filtration system that removes solids, purifies process water, and recycles detergents and solvents
- Fully insulated housing designed to work in extreme temperatures

Pumping Skid Powered by Hydraulic Drive

- Powerful pump deliver high temperature fluids to the automated cannon
- Three holding tanks for solvent, detergent and water
- Wastewater pump transfers effluent to filtration treatment

Semi-Truck with Trailer & Knuckle Boom Crane

- 60 foot boom crane maneuvers automated cannon for placement in tank car manway
- Equipped with leveling jacks for parallel track set up in uneven terrain



Automated cannon is controlled remotely from the ground

Automated Cannon Cleaning / Asphalt



Before cleaning



After cleaning



Automated Cannon Features

- High impacted nozzle sprays water, solvent and detergent
- Powerful jet stream shoots water over 200 feet – strong enough to emulsify stubborn heels
- Video camera and light equipped for visual feedback and remote control operation

Commodities

Tank cars carry a wide range of commodities ranging from liquid residual products, to light hydrocarbons to commodities with heavy sediments that produce solidified heels. Due to three distinct ProTecht cleaning systems, almost all hauled tank car commodities can be cleaned.



Commodities typically cleaned from tank cars.

1 **Water Filtration** Cleaning System

- Corn Oil
- Condensate
- Distillate
- Kerosense
- Lube Oil
- Mineral Oil
- Naphthalene
- Crude Vegetable Oil
- Styrene

2 **Steam Injection** Cleaning System

- Base Oil
- Canola Oil
- Diesel
- Ethanol
- Gasoline
- Glycol
- Jet Fuel
- Methanol
- Vegetable Oil

3 **Automated Cannon** Cleaning System

- Asphalt
- Bitumen
- Bunker Oil
- Crude Oil
- Diluted Bitumen
- Fuel Oil
- Gas Oil
- Slurry Oil
- Vacuum Bottom Oil

Additional commodities can be serviced following a detailed analysis of Safety Data Sheets (SDS).

Kosher Tank Car Cleaning Service

When shipping consumable commodities, Kosher certification is often a requirement. ProTecht offers one of the only mobile, Kosher-certified steam injection cleaning systems in the industry, giving shippers the confidence of compliance without the down-time of offsite cleaning.

The ProTecht Steam Injection Tank Car Cleaning System is a Kosher certified cleaning method that cleans with steam that exceeds at least 180°F (82°C), features a water wash and a post cleaning wipe down to keep your tank cars in compliance.



Here are the steps for a Kosher Certified Tank Car Cleaning:

1. **Steam Cleaning** - Steam with a minimum temperature of 180°F (82°C), as required by Kosher regulations, is introduced into the tank car.
2. **Chemical Injection** - If additional cleaning is needed, a chemical agent is injected after the steam process to help break down stubborn residues.
3. **Effluent Collection** - While the tank car is being cleaned, effluent is extracted through the bottom valve and pumped to a holding tank.
4. **Water Wash** - Once the tank car is cleaned, a water wash is performed to remove any remaining contaminants.
5. **Ventilation** - The tank car is ventilated to remove residual moisture and lowers the internal temperature of the car.
6. **Kosher Wipe Down** - After ventilation and once the tank is confirmed safe for entry, a Kosher wipe down is performed.

Schedule Service

ProTecht Mobile Tank Car Cleaning Technology is offered solely by UTLX in the United States and Procor in Canada. To schedule cleanings or for more information please contact us:



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