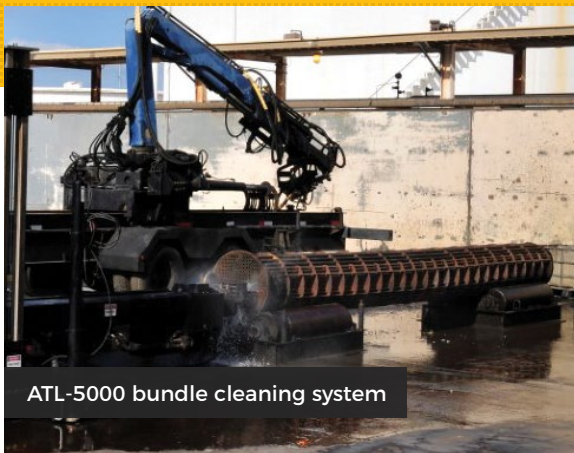


# AUTOMATED HEAT EXCHANGER CLEANING WITH VBX+ POLISHING

## Advantages

- Fully automated tube cleaning
- Restores process efficiency, heat transfer, and differential pressure
- Safe, remote control and operation
- Industry-best cleaning effectiveness
- VBX+ polishing of tube IDs
- Eliminates failed inspections
- High efficiency and productivity
- Extends running time/reduces overall cleaning time
- Reduces crew size
- Reduces fuel costs
- Reduces total costs



ATL-5000 bundle cleaning system

## COMPLETE AUTOMATED EXCHANGER CLEANING SOLUTIONS

Effective cleaning of shell-and-tube heat exchangers is essential to maintain proper heat transfer and restore process efficiency, heat transfer, and differential pressure. Eliminating scale and fouling also allows exchangers to be inspected using the best possible method and helps assure successful outcomes.

Advanced technologies from USA DeBusk have dramatically improved the safety, efficiency, and turnaround time of exchanger cleaning.

USA DeBusk pioneered multi-stage automated cleaning using ATL-5000 bundle cleaning and VBX+ exchanger polishing. These combined processes provide the safest, most efficient solution for cleaning your exchangers to OEM condition.

## ATL-5000 BUNDLE CLEANING

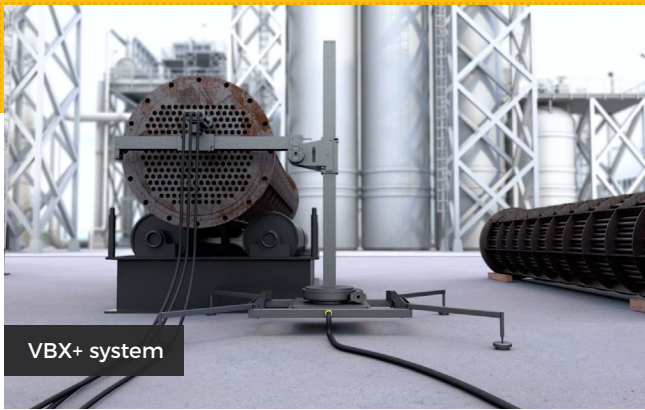
The process begins with our automated ATL-5000 bundle-cleaning system. It allows a single operator to hydro blast tube bundles via remote control from a station located a safe distance away. A powerful hydraulic drive system enables the operator to control all movements of the system for speed and efficiency.

The system hydro blasts the OD (shell side) of exchanger tube bundles at pressures up to 20,000 psi and can be configured for various length bundles. With the addition of a roller control package, the operator can manipulate the rotation of bundles.

The ATL-5000 system also hydro blasts the ID of up to five exchanger tubes at a time. The lance stroke distance is fully programmable, allowing it to clean different length bundles. The system is completely self-sufficient and needs no external power or air supply.



**USA DEBUSK**



VBX+ system



Triple-head injector nozzles



Remote control system

## VBX+ POLISHING

For a higher level of cleaning, USA DeBusk offers our exclusive VBX+ exchanger polishing. VBX+ is a proprietary vapor blasting process in which abrasive media is mixed with water, direct-injected under pneumatic pressure into an airstream, and discharged through triple-head injector nozzles.

The vapor and abrasive stream removes carbon, scale, and process contaminants, polishing the ID of tubes to bare metal and preparing them for Eddy Current inspection, Internal Rotary Inspection System (IRIS) inspection or other nondestructive testing. The VBX+ control system allows fine-tuning of flow rates and abrasive concentrations for optimum results. The process protects metallurgy as it removes contaminants.

## COMPACT & VERSATILE

The VBX+ system consists of a water and abrasive mix pot, high-precision indexer, triple head with injection nozzles, and a control system where a single operator oversees cleaning.

The system is compact, highly mobile, simple to set up, and safe for other nearby crafts. The process is fully automated, providing precise cleaning and high productivity.

VBX+ polishing can be used on the wash pad or in the unit (CIP).

## ELITE CLEANING, EFFICIENT OPERATION

- Safe, remote operation
- Fast and efficient cleaning
- One-pass polishing
- Cleans hard-to-reach surfaces, such as tube IDs across bends in U bundles
- Reduces water and abrasive media usage by 50% compared to conventional blasting
- Small footprint, highly mobile system
- Minimal crew size
- Fast, economical cleanup

USA DEBUSK  
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ACHIEVE A HIGHER LEVEL  
OF CLEANING

