

# High Pressure Services

## Fact Sheet

Clean Harbors' High Pressure Services provide numerous options and cutting edge, automated technology to get customers back on line quickly and safely.

### Exchanger Cleaning

Clean Harbors is experienced in shell side and tube side exchanger cleaning. Our bundle blasters are operated by a single operator stationed in a fully enclosed cab. We rotate the bundles as we clean ensuring the entire surface of the tube is blasted. Our system can blast up to 20,000 psi; is capable of cleaning exchangers up to 72 inches in diameter, 40 feet in length, and 60,000 pounds in weight; and has the capacity to collect debris and water when required.

Our tube side exchanger system can utilize pressures up to 40,000 psi. We offer 5-lance IBC, 3-lance TLE, and single-lance tube cleaning technology. Our 5-lance IBC is ideal for large volume bundle cleaning during shutdowns and has a cleaning capacity of up to 1,000 tubes per hour. Our 3-lance TLE can clean up to 300 horizontal or vertical tubes per hour and excels at removing hard products from tubes with its oscillating movements. Our single-lance technology is compact and lightweight for horizontal or vertical cleaning in tight spaces and can clean up to 100 bundles per hour.

### Line Cleaning

Automated line cleaning equipment includes the Rotofan and Armadillo systems. Blasting up to 20,000 psi, these tools can clean pipe diameters up to 60 inches and lengths up to 600 feet. The remote controlled nozzle rotates as it cleans, with variable rate speed controls for rotation, linear advance, and pressure. For increased safety, the hose is bolted to the flange, positioning the operator a safe distance from the high pressure water.

### Tank and Vessel Cleaning

Our 3-D waterblast system has two high-pressure waterjets blasting up to 20,000 psi on a revolving head. Reaction energy from the jet stream hits the vessel walls, rotating the tool horizontally, while the jets rotate vertically. Our 3-D tool can fit through an 8-inch opening and be hung from the supply hose using opposing jet forces. This minimizes scaffolding requirements - saving time and money.



## Numerous Options and Cutting Edge Technology

Clean Harbors' High Pressure Services utilize automated waterblast equipment to remove unwanted deposits from various process vessels, tanks, and lines, including —

- Heat exchangers
- Evaporators
- Separators
- Cooling tubes
- Condensers
- Reactors
- Fin fan tubes
- Boilers

### Dry Ice Blasting

Dry ice blasting is a superior method of online production equipment cleaning that is capable of removing a range of substances including oil, paint, asphalt, tar, resins, and soot. It is an effective alternative to traditional methods that clean using environmentally damaging chemicals. The dry ice sublimates into the atmosphere after cleaning, leaving only the removed material behind to be cleaned up. Not only is it less harmful to the environment, it is also less harmful to your equipment, and can be performed while keeping equipment online. This significantly reduces production downtime and minimizes disassembly costs.

### Cold Cutting

Experienced technicians use ultra-high pressure water and abrasives to cold cut a range of materials including steel, concrete, and composites. Cold cutting is an automated technique that produces no heat, eliminating the possibility of costly metal distortion; and it is spark free, so it's safe to use in explosive areas. It creates cleaner, straighter cuts and is more environmentally friendly than traditional methods as its by-product is water - not shavings, dust, or oils.