



ICCI E⁴ Precommissioning Cleaning Services:
EXPERT. EXPERIENCED. EFFICIENT. EFFECTIVE.

NAUTILUS HYDRO PIG[®] SERVICE



QUICKLY, COMPLETELY, AND SAFELY REMOVE NON-ADHERED DEBRIS FROM MULTIPLE-DIAMETER, COMPLEX-GEOMETRY PIPING SYSTEMS, IN A SINGLE OPERATION.

Debris remaining in piping systems after construction and installation is a common problem that can prevent successful commissioning. Nautilus Hydro Pig service from ICCI effectively removes non-adhered debris such as rock, dust, welding rods, bolts, tools, and other construction and installation debris. This advanced, proprietary service works quickly to meet stringent cleaning specifications for removing debris in all piping systems including those with multiple diameters and complex geometries.

APPLICATIONS

Removes non-adhered, piping-system construction and installation debris such as rock, dust, welding rods, bolts, and tools in:

- Lines up to 16-in. diameter, with any bend radius and any number of bends;
- Piping connected to rotating equipment at risk of damage or malfunction from debris;
- Piping that cannot be flushed conventionally due to budget, space, or water constraints;
- Hydraulic and lube oil systems as part of ICCI's RAPID oil flushing service.



ADVANTAGES

Powerful, quiet operation. The hydro-pneumatic pig is a precisely controlled mix of highly turbulent air bubbles and small water droplets, traveling at high speeds (more than 50 ft/sec) through and out of the piping system being cleaned. A three-phase separator dissipates energy and reduces noise while removing water and debris from the air. Water is drained into a containment vessel for recycling—very little water is discharged into the work area—and debris remains in the skid for inspection. Air is vented safely to atmosphere.

Cleans complex piping systems from a single entry point. The two-phase fluid contracts and expands through pipe diameter changes such as valve throats, pipe reducers, and multiple branches. Unlike ordinary methods, it is not a mechanical device that can get stuck in piping systems with changing diameters and complex turns. Eliminating multiple entry points greatly increases project efficiency and reduces costs.

Removes un-adhered and semi-adhered particles of any size. Highly turbulent flow flushes everything from large bolts and pipe fragments from fabrication down to microscopic particles.

Cleans to acceptable levels in hours. Achieves results much faster than alternative methods such as fill and drain and closed circuit flushes through filters, even in piping systems with long lengths and many turns. Piping is ready for plant operation faster.

Uses oil-free air. For many systems, even the slightest amount of oil contamination is unacceptable. Nautilus Hydro Pig service uses only oil-free air to eliminate this risk.

Easily and effectively combines with Air+ Blows,SM Ultra Dry,SM and Aqua Milling[®] services. Proven combinations of ICCI services offer optimized methods for cleaning a variety of pipe systems. When Ultra Dry service is added, time is saved because the equipment setup does not need to be changed when transitioning to drying, after cleaning.

Uses far less water and fuel than conventional methods.

Hydro Pig service is environmentally friendly. It uses as little as one-tenth the water that conventional flushing methods require to achieve a similar cleaning-force ratio. Hydro Pig service also consumes as little as 2.5% of the fuel ordinary methods require, which greatly reduces CO2 emissions. In addition to its environmental benefits, these advantages substantially reduce your costs.

Lightweight, three-phase separator. The core equipment can be moved quickly and easily, using a pallet jack or small forklift. Some system designs require many exit points; in these cases, our fleet of separators makes the work more efficient and safer.

Small footprint. Because Hydro Pig service has a 20% smaller footprint than ordinary flushing services, it's ideal in congested construction areas. The system is easier to move around site, and costs 20% less to mobilize and demobilize.

Verified cleanliness. Push rod cameras and sample ports verify system cleanliness. You can confidently proceed to the operational phase knowing that lines are cleaned completely and all loose construction debris has been removed.



Hydro Pig no 1

Hydro Pig no 4

Hydro Pig no 10

ADDITIONAL INFORMATION

Hydro Pig service is safe and effective in lines up to 16-in. diameter, for removal of non-adhered debris.

For completely and efficiently removing adhered debris such as mill scale, or for lines larger than 16-in. diameter, proprietary Aqua Milling service from ICCI is the ideal, proven solution.

Choosing Hydro Pig service from ICCI is your best assurance of efficient, effective, on-schedule, piping system flushing. Contact us today for more information and to schedule an on-time, on-budget project.



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Precommissioning Cleaning Done Right