



High Pressure Water Jetting



YOUR CHALLENGES

High pressure water jetting (HPWJ) or hydro-blasting is commonly used in the process industries for the penetration and removal of heavy deposits in process equipment. With the use of high pressure cleaning processes comes the risk of exposing workers to hazards with potential to cause serious injury.

OUR HIGH PRESSURE WATER JETTING

CR3 can take care of all of your high pressure water jetting requirements. We have extensive experience of supporting clients with all manner of specialist hydro-blasting projects, irrespective of their size and scale, both onshore and offshore. With our commitment to continuous improvement combined with one of the largest and comprehensive ranges of automated and robotic equipment in the industry, we can assure you of optimal safety, quality and schedule efficiency on every job.

Working as one team, we support you with detailed planning, coordination and execution services. Our modern equipment along with our multi-skilled and highly trained technicians will help you reduce numbers on site, ensuring we can support all your projects from start to finish, saving time and cost. With our network of offices across Asia, we can respond quickly to any planned and unplanned events.

HOW WE SUPPORT YOUR BUSINESS

We have invested in advanced automated technology, which removes the operator from the line of fire and makes the cleaning process substantially faster and more efficient. With minimised risk to personnel, we can use much higher flows and pressures to significantly improve productivity and quality. Our extensive fleet of high pressure pumps delivering pressures and flows up to 2,800 bar and 250 litres / minute respectively, plus our range of nozzles, drilling attachments and lances, enable us to effectively meet all your plant needs.

THE CR3 DIFFERENCE

CR3's large in-house team of highly trained technicians is subject to regular audits and a stringent safety passport scheme. We invest heavily in the latest equipment and SMART systems to maintain our reputation as the region's leading one-stop provider of specialised maintenance services.

Innovative equipment and techniques

Our specialised equipment includes automated internal and outside bundle cleaners, automated Roto-clean pipeline and insitu tube cleaners, automated 3D tank cleaning heads, automated tube lancing equipment (TLE) for controlled cleaning of vertical tubes, automated ultra-high pressure water cutting tools and remote control multi-purpose tracked robots for working in all conditions and eliminating man-entry.

Outstanding QHSE performance

Our continual investment in the latest automated and robotic equipment ensures we can perform the cleaning task from the safety of a control cabin or a good distance away from the cleaning area. This is inherently safer than conventional techniques, which encourage workers to get too close to the high pressure water jets, exposing them to significant hazards and the potential for serious injury.

Unrivalled experience

The use of advanced cleaning methods has enhanced our reputation for helping customers increase safety and efficiency. In addition, our use of rigid lances over traditional flexible ones has enabled higher water pressures and flows to be used, resulting in significant improvements in cleaning quality and productivity gains for our clients.

Exceptional service

By utilising a combination of high pressure water, steam, chemicals and specialised accessories, we can clean surfaces

otherwise impossible to clean by conventional means. These include pipeline internals, vessels, columns, reactor/exchanger tubes and tanks. Heavy deposits of scale or chemical residue can be efficiently removed, thereby reducing cleaning duration.



OUR SOLUTIONS

- High pressure and ultra-high pressure pumps to 2,800 bar
- Fully automated inside and outside heat exchanger bundle cleaning system
- Full 'blind to blind' service including mechanical preparation, tube bundle pulling and re-tubing
- Roto-clean high pressure water pipeline cleaning system
- High pressure water surface cleaning for floors and grating
- High pressure water surface preparation for coatings and inspection
- High pressure water automated cleaning system for reactors and tanks
- High pressure water jet cutting of concrete, refractory and steel
- Drain and sewer cleaning systems with simultaneous vacuuming
- Liquid and solid vacuuming and collection systems
- Automated tube lancing equipment (TLE) cleaners
- Full turnaround and shutdown services on a 'blind to blind' basis



YOUR BUSINESS BENEFITS

Benefit from a holistic approach – by having a single point of contact we can support your project from start to finish including planning, execution, commissioning and project management, minimising the number of contracts required and eliminating interface issues.

Save time and money – by using advanced hydro-blasting technology that is safer, more efficient and superior in quality than conventional approaches.

Ensure high safety standards – by working with a partner that is committed to delivering the highest safety standards in the industry and further strengthened by our active membership of the AUSJET water jetting association.

CR3 IN ACTION

The challenge

A refiner in SE Asia required the urgent removal of heavy coke inside an RFCC unit with high temperatures and benzene concentration while ensuring the integrity of the refractory lining.

The solution

Using our automated High Pressure Water Jet (HPWJ) equipment in tandem with fully rotational tank cleaning heads, we remove almost 250 tons of coke buildup.

The outcome

Our advanced automated HPWJ equipment virtually eliminated the need for vessel entry and enabled the coke to be removed quickly, safely and efficiently without affecting the refractory lining.

CR3 is a leading provider of energy engineering solutions. Established in 1991, we provide specialised maintenance, plant upgrade, revamp and engineering services with a sharp focus on **Energy Efficiency**, **Engineering Excellence**, and Sustainable **Solutions**.

To learn more, visit CR3.Group

Leading one-stop provider of specialised maintenance services

CR3 supports your business with extensive contracting experience in the delivery of catered service packages, 'blind to blind' jobs and turnkey maintenance services during major shutdowns and turnarounds. Our business upholds a culture and track record of integrated management systems that are certified to multiple international standards.

Our Solutions

We offer a comprehensive portfolio of maintenance services that are grouped into six business lines. Our experts deliver these services – onshore and offshore – on time and on budget.

Our complete 'blind to blind' solution ensures more streamlined and efficient projects, as we maintain direct, single-source control of all critical path elements. We cater to projects of widely varying scope and complexity, and can deliver multiple shutdowns concurrently.

Related services:

- Static & Rotating Equipment Maintenance
- Industrial Scaffolding
- Mechanical Services
- Column Modifications & Repairs
- Total Heat Exchanger Maintenance
- Flare Tip Replacements & Repairs
- Cleaning & Decontamination Services
- Mercury Management Services
- Catalyst Handling Services
- Nitrogen Services
- Waste Handling
- Decommissioning Services
- Insulation Services
- Valve Maintenance
- Storage Tank Cleaning & Maintenance

Our experts meet your demands for shorter change-outs, leaner project teams and superior quality standards for all reactor types with end-to-end solutions that reduce downtime and increase profitability.

Related services:

- Catalyst & Adsorbent Handling Services
- Tubular Reactor Services
- Dense Loading
- 'Blind to Blind' Mechanical Services
- Reactor Internals Replacement & Repairs
- Nitrogen Services
- Waste Handling

We clean and inspect virtually all plant vessels, columns, drums and piping systems, both onshore and offshore, with services that can be tailored to requirements.

Related services:

- Pre-Commissioning & Commissioning Services
- Nitrogen Services
- Pipeline Cleaning (Chemical & Mechanical)
- Pipeline Flooding
- Pressure Testing
- Dewatering
- Drying
- Purging

Our investment in training, equipment and SMART systems combined with our focus on safety and rigorous planning, preparation and execution of work underpins our track record as a leading provider of mechanical & plant maintenance services.

Related services:

- Static Equipment Maintenance
- Rotating Equipment Maintenance
- Specialist Cutting Services
- Online Leak Sealing
- Controlled Bolting
- Reactor Repairs & Maintenance
- Plant Change & Piping Modifications
- In-situ Flange Facing & Machining
- Industrial Scaffolding
- Insulation Services
- Valve Maintenance
- Continuous Plant Maintenance
- Storage Tank Cleaning & Maintenance

Our extensive portfolio of cleaning services sets the benchmark in terms of technical, environmental and safety standards.

Related services:

- Chemical Cleaning Services
- Mercury Management Services
- Fin Fan Optimisation
- Hydro Jetting Services
- CR3 Decoking Technology (CDT)
- Decontamination Services
- Waste Handling

We deliver projects safely, on time and on budget by ensuring single-source control through our multi-disciplinary approach and project management capability.

Related services:

- Process Revamps, Rejuvenations & Retrofits
- Construction & Constructability Reviews
- Engineering, Procurement & Commissioning Services
- Operations & Maintenance
- Dismantling, Demolishing & Removal of Equipment
- Fabrication of structural, Carbon Steels & Pipe Systems
- Fabrication of Stainless Steels & Special Alloys
- Installation of Large Equipment & Pipe Systems
- Welding
- Hot & Cold Cutting
- Scaffolding & Insulation



CR3 is a leading provider of energy engineering solutions. Established in 1991, we provide specialised maintenance, plant upgrade, revamp and engineering services with a sharp focus on **Energy** Efficiency, **Engineering** Excellence, and Sustainable **Solutions**.

Contact us today to learn more

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