



YOUR RELIABLE PARTNER

Fin Fan Optimisation Services



YOUR CHALLENGES

Air cooled heat exchangers (ACHE) are used extensively throughout the Oil, Gas, Refining, Chemical, Power and other heavy industries. As a potentially critical component of your production process, ACHE performance is essential. Under the motto 'We Deliver Cooling Capacity', CR Asia's comprehensive portfolio of maintenance, cleaning and advisory services supports your production processes by delivering sustained or enhanced ACHE performance.

OUR FIN FAN OPTIMISATION SERVICES

Various factors can influence cooling capacity, with cleaning being just one of many potential solutions to improve ACHE performance. For this reason, our cleaning solutions are performed together with an elaborate monitoring programme that enables us to investigate the full spectrum of possible causes for reduced efficiency. We also provide monitoring and data analyses to document efficiency gains by measuring the air velocity, plenum pressure differential, temperature and energy consumption before and after cleaning.

HOW WE SUPPORT YOUR BUSINESS

As part of our comprehensive consultative approach, we investigate all possible issues associated with ACHE efficiency including hot air recirculation; the condition of the plenum; fan performance; energy consumption of the fan drive; vibration and noise levels, etc. Once the situation has been fully assessed, our experts propose the necessary corrective actions to resolve all issues.

To restore ACHE cooling capacity, we clean the inside as well as the external tube surface. Depending on your specific requirements, CR Asia employs a range of methods such as foam cleaning, mechanised hydro-jetting and soda blasting (dry-cleaning) for the external surface. We carry out internal tube cleaning by high-pressure water jetting using automated techniques such as tube lancing equipment (TLE). TLE cleaning with flexible lances and rotating nozzles is suitable for narrow platforms so that extensive scaffolding is not required. Chemical cleaning can be used to remove H₂S, FeS and/or sticky pollutants that present challenges for hydro-jetting applications. Both methods enable us to achieve an optimal result in the shortest possible time while maintaining the highest safety standards.

THE CR ASIA DIFFERENCE

CR Asia'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 technology

We use TLE techniques to clean tube interiors safely and efficiently. For the external tube surface, soda blasting (dry cleaning) is performed online in 95 per cent of all cases. Working in cooperation with our technology partner, MCO Team B.V. from the Netherlands, new solutions are developed for those interested in permanent cleaning installations and online continuous performance monitoring.

Stringent QHSE processes

CR Asia has a proven ability to restore cooling capacity to original design levels through online cleaning alone, using non-hazardous, environmentally friendly sodium

bicarbonate, which is also used as a food ingredient in baking powder. Naturally, all local laws and regulations pertaining to the blasting process are adhered to.

Unrivalled experience

Based on our extensive experience, we recognise that approximately 85 per cent of all heat transfer issues at ACHE arise from fouling of the outer surface of the tubes, where debris accumulates on and in between the fins. By using foam cleaning, mechanised hydro-jetting or (online) soda blasting (dry cleaning), we can confidently offer the best solution for 'Delivering Cooling Capacity'.

Exceptional service

To ensure minimal downtime, the majority of our cleaning services are performed online and our team is capable of cleaning some 70m² per shift. We check all aspects of fin fan performance to ensure cooling capacity is delivered. By providing consultancy and monitoring support together with an array of cleaning options, CR Asia offers a comprehensive service package.



OUR SERVICES

- Cleaning of the external tube surface by foam cleaning, mechanised hydro-jetting or soda blasting (dry cleaning)
- Online cleaning of the external tube surface for the majority of ACHE
- Cleaning of the internal tube surface with semi-automated lancing equipment (TLE technique)
- Monitoring and troubleshooting for performance enhancement

YOUR BUSINESS BENEFITS

Gain certainty – by relying on tried and tested maintenance, cleaning and advisory services from CR Asia. We have an impressive track record of delivering sustained or enhanced ACHE performance over the course of hundreds of successful projects.

Increase efficiency – with fin fan optimisation services that provide excellent results and a high return on investment. Our comprehensive portfolio of online ACHE cleaning and monitoring services can help to minimise downtime from unplanned maintenance activities.

Minimise environmental impact – with our non-hazardous, environmentally friendly solutions. Beyond ensuring all relevant laws and regulations are adhered to, our experts can help you reduce your carbon footprint.

CR ASIA – YOUR RELIABLE PARTNER

CR Asia is the leading provider of highly specialised pre-commissioning and maintenance services to the Oil, Gas, Chemical, Power and other heavy industries throughout Asia. As your reliable partner, we provide the safest and most efficient solutions to the maintenance, repair and overhaul challenges facing your business. **To learn more, visit www.crasia.net**

CR ASIA IN ACTION

The challenge

A refiner in Southeast Asia was being forced to perform frequent flaring due to reduced efficiency of the iC5 Fin-Fan Overhead Condensers.

The solution

CR Asia carried out online cleaning of the tube exterior by soda blasting in seven day-shifts.

The outcome

Following cleaning, a 136 per cent improvement in average airflow was measured. This resulted in an increase of 4.1 MW and an iC5 reflux increase of 55 m³/hour.

Your Reliable Partner

Asia's leading one-stop provider of specialised maintenance services

CR Asia 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 Services

We offer a comprehensive portfolio of maintenance services that are grouped into five 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 have the capacity to deliver multiple shutdowns concurrently.

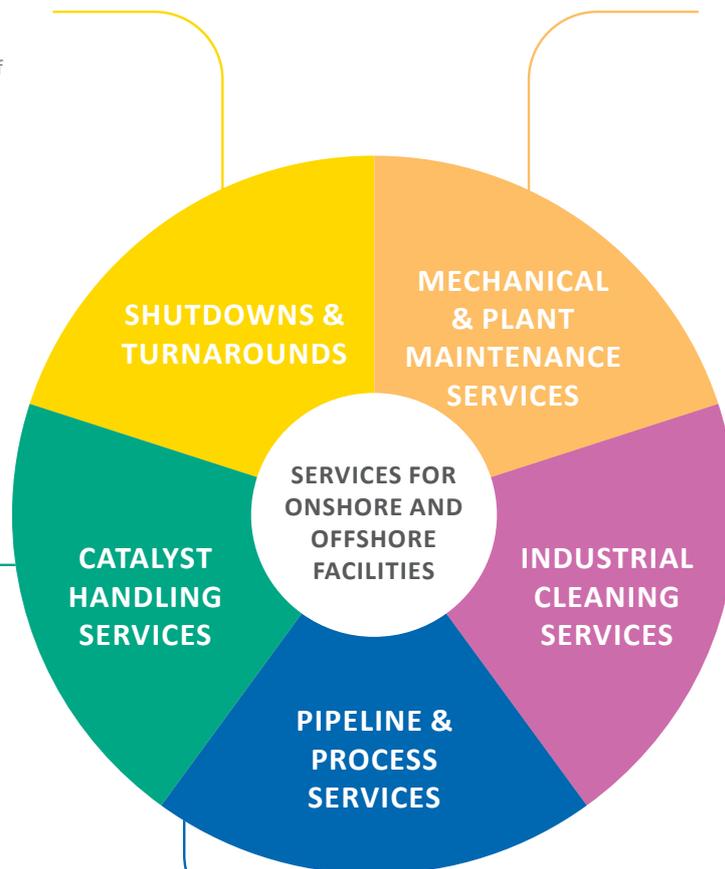
Related services:

- Mechanical Services
- Column Modifications & Repairs
- Total Heat Exchanger Maintenance
- Flare Tip Replacements & Repairs
- Cleaning & Decontamination Services
- Mercury Management Services
- Catalyst Services
- Nitrogen Services
- Waste Handling
- Decommissioning Services

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. The knowledge and experience gained from each job is channelled into the next generation of solutions.

Related services:

- Static Equipment Maintenance
- Specialist Cutting Services
- Online Leak Sealing
- Controlled Bolting
- Reactor Repairs & Maintenance
- Plant Change & Piping Modifications
- In-situ Flange Facing & Machining
- Continuous Plant Maintenance

Recognised as Asia's leading 'one-stop shop' solution provider, 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
- CR Asia Decoking Technology (CDT)
- Decontamination Services
- Waste Handling

Our Business

25



years in business



4



operational bases serving 18 active markets



4000⁺



experts



Our Partners

CR Asia has established long-term alliances with a number of key strategic partners. This collaborative approach ensures our customers always benefit from having access to the most appropriate tools and technologies on any given project. We recognise our industry is constantly evolving. That's why we are continuously looking to expand our network of strategic alliance partners.



CR Asia – Your Reliable Partner

CR Asia is the leading provider of highly specialised pre-commissioning and comprehensive maintenance services to the Oil, Gas, Chemical, Power and other heavy industries throughout Asia. As your reliable partner, we provide the safest and most efficient solutions to the maintenance, repair and overhaul challenges facing your business.

Contact us today to learn more

CR Asia Group

17th Floor, Unit 1706,
Two Pacific Place Building,
142 Sukhumvit Road,
Klongtoey, Bangkok 10110, Thailand
Tel: +66-2-653-3913-5
Fax: +66-2-653-3916
Email: crag@crasia.net

CR Asia Thailand

15/1 Moo 3, Bankoh - Mabkha Road,
T.Mabkha, Nikompattana
Rayong 21180, Thailand
Tel: +66-38-698-399
Fax: +66-38-698-398
Email: crat@crasia.net

CR Asia Malaysia

Lot 1, PT 8250-1,
Teluk Kalong Industrial Area,
24000 Kemaman, Terengganu Darul Iman,
Malaysia
Tel: +60-9-863-2325 to 26
Fax: +60-9-863-2328
Email: cram@crasia.net

CR Asia Singapore

4 Tuas Avenue 2,
Singapore 639444
Tel: +65-6268-0255
Fax: +65-6268-3369
Email: cras@crasia.net

CR Asia India

802 Windfall, Sahar Plaza,
J B Nagar, Andheri (East),
Mumbai – 400 059, India
Tel: +91-22-6288-1000
Email: crai@crasia.net

Or visit www.crasia.net