

# LET THE ROBOT DO THE **HARD WORK**

ACR™ – AUTOMATED CONCRETE REMOVAL USING HYDRODEMOLITION



 **CONJET**



With Conjet's technology, which we call Automated Concrete Removal – ACR™, our 35+ years of experience developing hydrodemolition robots is available to you at the push of a button.

With Conjet ACR™, you can let the robot do the hard work!





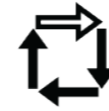


# ACR™ – AUTOMATED CONCRETE REMOVAL

ACR™ is a method utilizing robotic technology to remove concrete from building structures such as bridges, parking decks, dams and tunnels, using high pressure water – hydrodemolition. Hydrodemolition technology ensures that no micro-cracks are created during the concrete removal process and provides an ideal surface for bonding of new concrete, while the robot secures the quality and consistency of the removal process.

Using ACR™ fully automates the operation of concrete removal, allowing you to provide a safe working environment and increase production efficiency. In just one day, a single Conjet ACR™ robot removes the same amount of concrete as 20-25 operators with jackhammers. Even better, the ACR™ robot significantly limits the noise and eliminates dust and vibrations caused by conventional jackhammer methods.

## KEY BENEFITS WITH AUTOMATED CONCRETE REMOVAL



### AUTOMATION

The Conjet ONE control system allows operators to easily set removal parameters.



### SAFETY

Bluetooth communication allows operators to control the robot and pump while standing at a safe distance from the removal site.



### VERSATILITY

Operators can quickly transition from horizontal to vertical to overhead removals with the push of a button.



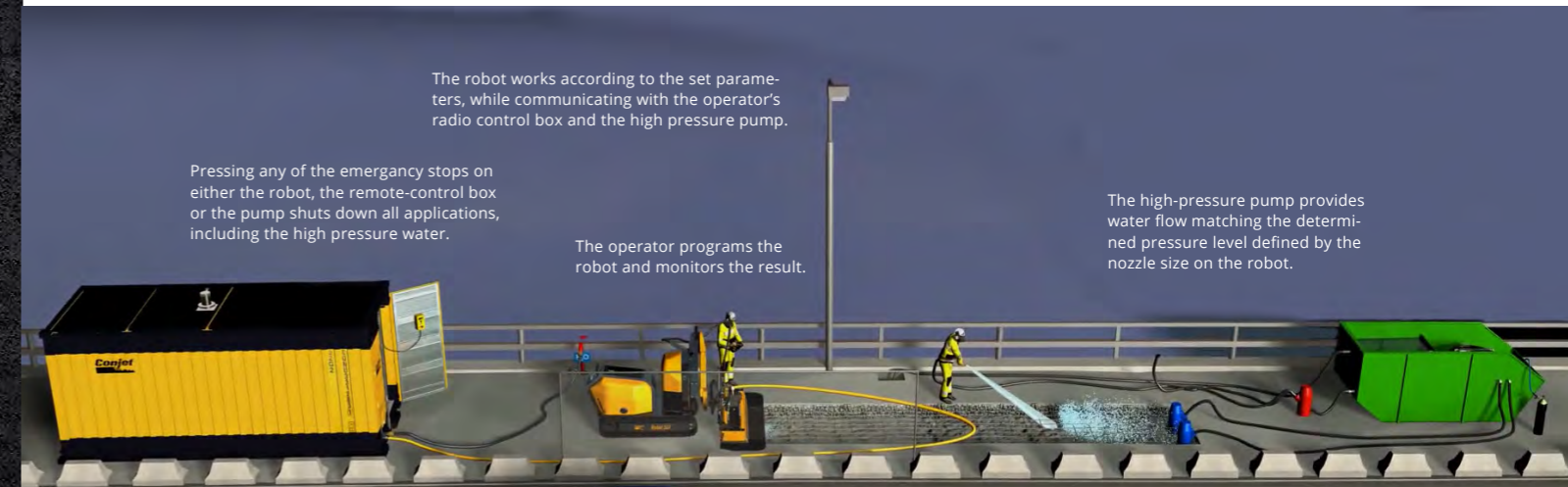
### CLOUD CONNECTIVITY

Our Conjet Connect cloud platform allows customers to monitor performance and plan ahead for equipment service.

## HOW DOES ACR™ WORK?

After completing the start-up routine, the operator can load a saved set of parameters or enter new parameters on the ACR™ robot, either directly on the robot's display or using the handheld remote control. The operator then positions the robot and starts the automated concrete removal process from a safe distance of 15-30 feet (5-10 meters).

The robot then operates autonomously according to the chosen parameters, working its way in a straight line, in a curve, or in a circle, while the operator monitors and supervises the process.



The robot works according to the set parameters, while communicating with the operator's radio control box and the high pressure pump.

Pressing any of the emergency stops on either the robot, the remote-control box or the pump shuts down all applications, including the high pressure water.

The operator programs the robot and monitors the result.

The high-pressure pump provides water flow matching the determined pressure level defined by the nozzle size on the robot.



**Safety first!** All Conjet ACR™ robots require reactivation within a pre-set timeframe to continue the automatic operation.





# WHAT IS HYDRODEMOLITION?

The superior method for long-lasting, high-quality concrete repairs.

Conjet's ACR™ robots use a high-pressure water jet, which travels over the concrete surface at a constant speed, taking advantage of the concrete's permeability to create an overpressure that breaks it apart. The automation of the ACR™ robots allow operators to easily execute both selective and non-selective removals.

**Selective removal** is the preferred method when only the deteriorated concrete needs to be removed. The ACR™ robot uses high-pressure water up to 22,000 psi (1500 bar) to selectively remove concrete at a predetermined quality level.

**Non-selective removal (also known as "hydromilling")** is the preferred method when concrete needs to be removed to a predetermined depth, independent of the quality of the concrete. The ACR™ robot uses high-pressure water above

22,000 psi (1500 bar).

No matter what option you choose, the high-pressure water jet technology will create a rough surface optimal for bonding of new concrete without creating any micro-cracks or damage to the remaining structure. At the same time, it leaves the rebar intact and cleaned from rust and corrosion.

With Conjet ACR™ robots, you control the end result, always ensuring you meet the customer's specifications.



## KEY BENEFITS USING HYDRODEMOLITION



### OPTIMAL BOND

Does not create micro-cracks in the remaining structure, which ensures that the repair will be long lasting and high quality.



### SUSTAINABILITY

Extends the useful life of the structure. Eliminates vibrations and dust; dramatically reduces noise.



### PRECISION

Allows selective removal of damaged concrete only, or non-selective removal to a pre-determined depth.



### EFFICIENCY

One Conjet robot can do the work of 25 workers with jackhammers, reducing costs and increasing productivity.

## HYDRODEMOLITION VS. HYDRAULIC BREAKERS AND JACKHAMMERS

Repairing a large surface with hydraulic breakers or jackhammers is simply ineffective and causes damage to the remaining structure, requiring extra work to repair.

Hydraulic breakers or jackhammers do not give the operator the control needed for optimal and precise concrete removal.

One Conjet ACR™ robot can do the work of up to 25 jackhammer operators, reducing cost and increasing productivity and safety.

Noise is greatly reduced, and silica dust exposure and "white-fingers syndrome" (caused by vibrations from jackhammers) are completely avoided using Conjet ACR™ robots.







Nalta Jetframe 101, equipped with a rotor cradle and vacuum suction, used on a steel pipe for toxic paint removal.

# SURFACE PREPARATION

USING CONJET ACR™ ROBOTS AND HYDRODEMOLITION TECHNOLOGY

Successful surface preparation involves scarifying the old surface to remove deteriorated or dirty coatings while making the remaining surface rough, which creates an optimal bond between the old surface and new coating material. At the same time, it is important to remove as little structural material as possible.

The best way to accomplish this is to use a rotor attached to the Conjet ACR™ robot. The rotor will quickly and accurately remove the old coating to a shallow depth and provide a superior bonding surface for the new coating material.

The surface preparation process can be used for heavy industrial cleaning as well as concrete, membrane and paint removal.



From an environmental perspective, using high-pressure water for surface preparation is a great alternative to sand blasting, mechanical scarifying, shot blasting and grinding. The concrete, paint, barnacles and/or rust residuals can be collected in a controlled way by vacuuming the slurry directly during the removal process.



Using a Conjet ACR™ robot for surface preparation increases productivity, operator safety and at the same time provides a uniform end result.



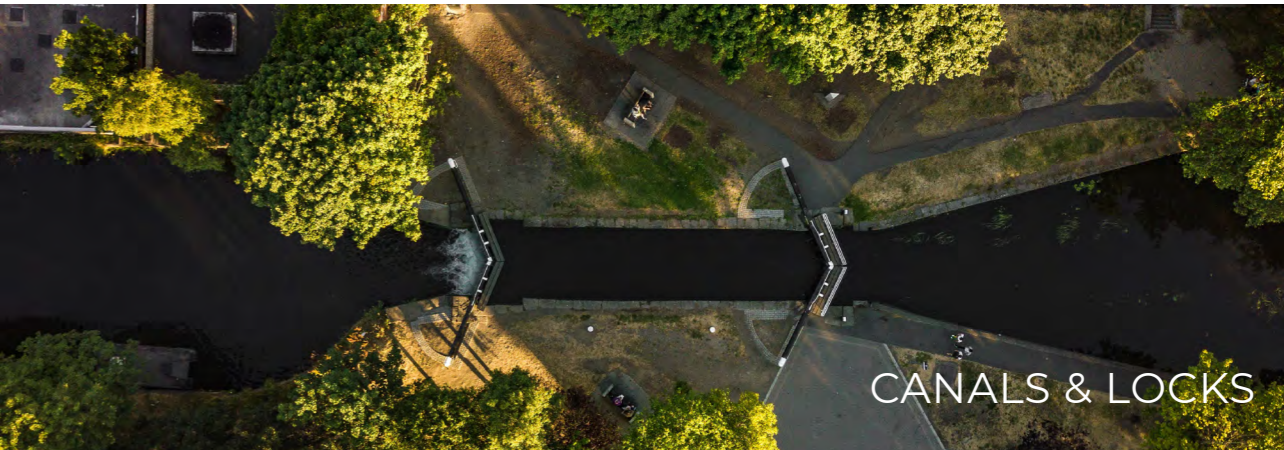
Using high-pressure water for surface preparation is fast and eliminates the handling of abrasive materials, reducing purchasing, handling and transportation costs. The deposit of abrasive material mixed with paint is far higher than the cost of purchasing the abrasive material itself.



# ENDLESS FLEXIBILITY

Flexible ACR™ robots for every application. Automated Concrete Removal is the preferred method for removing concrete to restore any type of structure, anywhere. Whether the removal area is horizontal, vertical, overhead, on high scaffolding, or even underwater, our ACR™ robots have been designed to get the job done safely and quickly without the need to spend time attaching specialized tools.

Over the past 35+ years, the Conjet ACR™ robots have been successfully used on almost every type of structure imaginable. Here are some examples:



CANALS & LOCKS



ROADS, BRIDGES & RUNWAYS



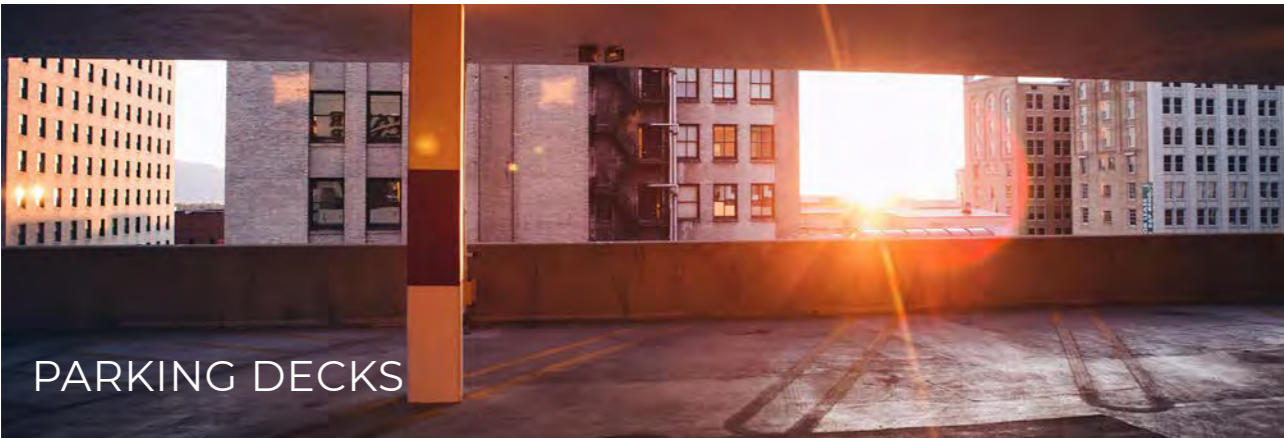
DAMS & TURBINES



PIERS & QUAYS



TUNNELS & PIPES



PARKING DECKS



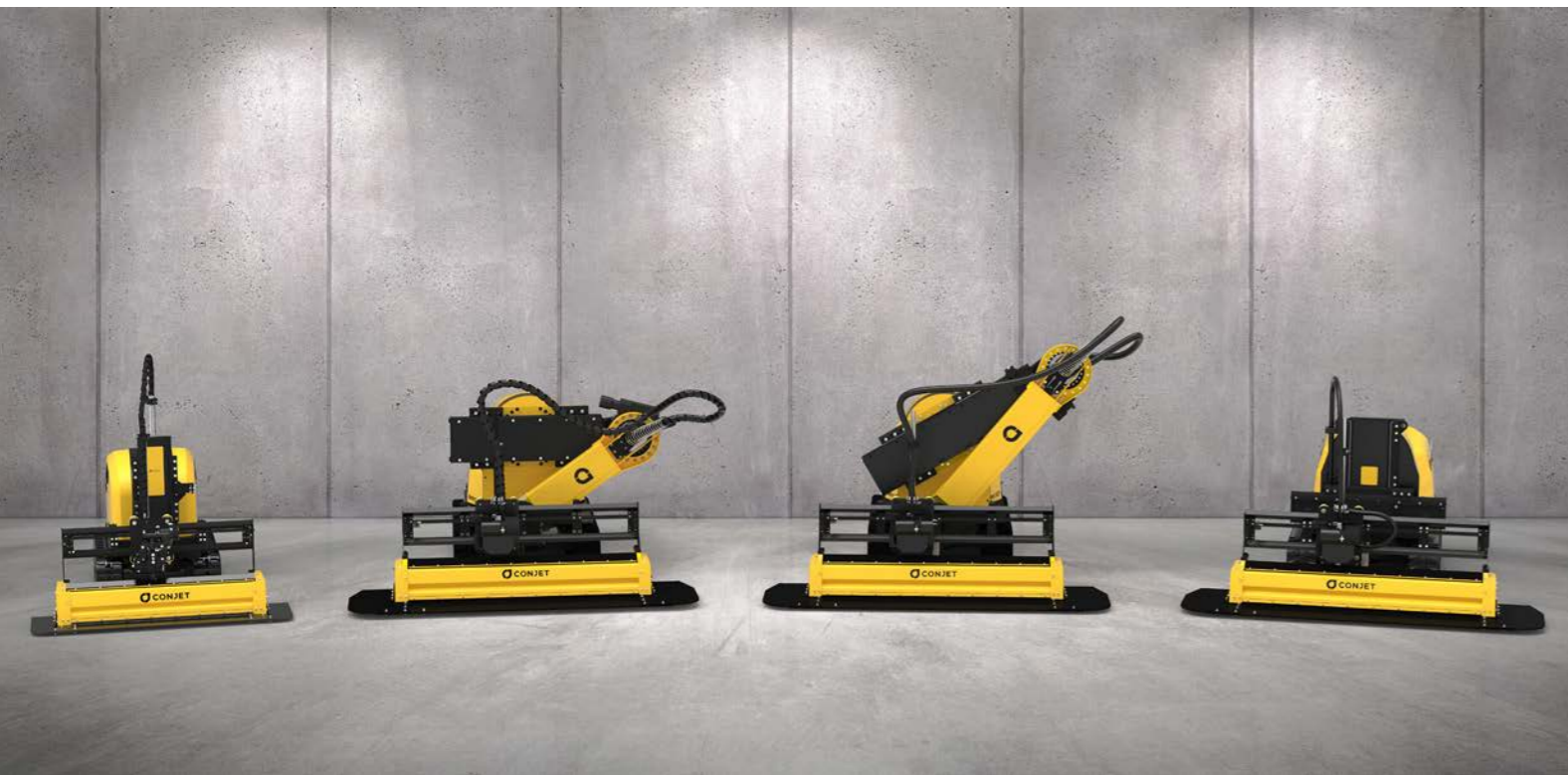
PILLARS



Conjet presents

# THE 7-SERIES TAKE CONTROL

Conjet's 7-Series ACR™ robots are developed with focus on versatility and reliability. Our goal is to make you successful using our equipment in a safe, easy, and efficient manner in order to obtain the best possible result. With Conjet ACR™, you can let the robot do the hard work!



## Advantages of the 7-Series hydrodemolition robots

### RELIABILITY

Using industry leading components, Conjet's ACR™ robots are built for the harshest environments. Conjet's durable ACR™ robots ensure trouble-free operation over time with minimal unplanned downtime.



### USER-FRIENDLY

Each 7-Series Conjet ACR™ robot is equipped with a remote control unit with color screen, giving operators the opportunity to set and visualize the parameters at their fingertips. Operators can easily maneuver the Conjet ACR™ robot by using two joysticks. In addition, an Intuitive GUI (Graphical User Interface) allows for trouble free programming and monitoring of the hydrodemolition process.



### SAFETY

The operator can stand at a safe distance and supervise the hydrodemolition process, controlling both the robot and the pump via Bluetooth communications as if they were ONE unit. We call it Conjet ONE – the safest way to remove concrete.



### VERSATILITY

A 7-Series Conjet ACR™ robot allows you to perform a wide variety of tasks. For example, the unique MPA (Multi-Purpose Arm) on the Robot 557 can be adjusted to various positions and heights by the flick of a switch, allowing you to reposition the cutting head in seconds. We also offer a range of accessories to further increase flexibility and meet your specific project needs.





# A CLOSER LOOK

All Conjet ACR™ robots in the 7-Series are designed with the same core components. That means that they share parts, software, and solutions between them.

Easy to service on site by opening hatches and covers.

For safety reasons, operator reactivation of automated process is a feature incorporated into all 7-Series robots.

Bluetooth communication between robot and pump to control high-pressure water.

Display on the robot mirrored to the operator's remote control box for easy configuration and monitoring.



Tracks extend and side shift for stability control.

Modular feed beam system enables adjustment of cutting width and reach.

## USER INTERFACE

# EASE OF USE

The user interface has been developed with simplicity and functionality in focus. Start the working day with a short GUIDE to refresh your skills before selecting operational mode. Choose from 10+ languages, with the option to set one language on the robot and another on the remote control.

Go through five easy steps to configure the robot before starting the Automated Concrete Removal (ACR™) process, or simply select and use a previously stored configuration.

### SAME EXPERIENCE



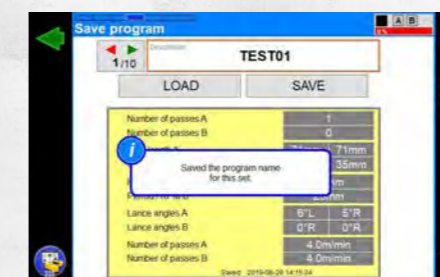
Remote control box shows the same information as the robot.

### DOCUMENTATION



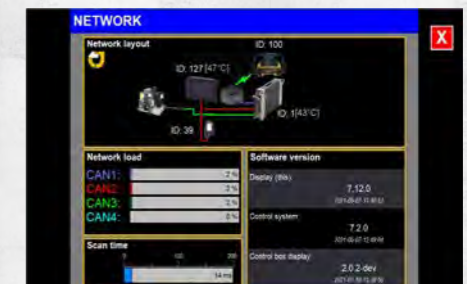
All documentation is available at a push of a button.

### SAVE PROGRAMS



Save up to 10 named programs that can be easily reloaded when needed.

### SYSTEM STATUS



Visualize system status  
Check connection to the high pressure pump  
Easy trouble shooting





# MAXIMUM FLEXIBILITY

RIGHT AT YOUR FINGERTIPS

Robot 557 standard and XL models are factory equipped with an MPA (Multi-Purpose Arm) that allows you to easily adjust and position the cutting head from the remote control.





# CONJET ONE SYSTEM

With Conjet ONE, you are always in charge. No matter where you are, you are in full control of the process. By utilizing state-of-the-art hardware and software, we have made all necessary information available at your fingertips.



## Know ONE – Know ALL

All Conjet ACR™ robots share the same control system – Conjet ONE.

Conjet ONE allows all operations to be configured from the remote control unit or on the robot display, resulting in easy configuration, fast start-up time and high efficiency. Fast start for beginners and advanced features and functions for experienced operators.

All robot functions are controlled from the remote control unit. Parameters can be set from the main display or remote control display, providing a shorter setup time and safer remote operation.

## INDUSTRY 4.0



# CONJET CONNECT

Conjet Connect is a cloud-based solution for easy fleet management, including real-time monitoring of operational data, diagnostics and data history. Conjet Connect also monitors the location of each robot for easy planning.

The REST API allows you to exchange data with other systems when necessary.

Conjet Connect sends messages regarding upcoming service and troubleshooting to the operator and machine owner. That makes planning easy and takes the guesswork out of the equation.

## HOW DOES IT WORK?



Continuously collecting operational data. Secure two-way communication to cloud based storage.



View your collected data of choice as a graph, table or pie chart.



Analyze data on any device.



A solution for all Conjet ACR™ robots.



# WE ARE CONJET



At Conjet, our mission is to lead the development of products and solutions that enable safe, sustainable and reliable concrete removal and surface preparation while also generating value to our customers.

With passion, dedication and a strong customer focus, our ambition is to make our customers successful using our technology in their daily operations.

The cornerstones in everything we do are **SAFETY, RELIABILITY, SUSTAINABILITY** and **EFFICIENCY**.

Our vision is to be first in mind for Automated Concrete Removal (ACR™) and surface preparation, and we are not satisfied until our vision is your reality!

## OUR HISTORY



**1990**

Senior staff in charge of Atlas Copco's Conjet project did a management buy-out and established Conjet AB. The new company focused all its attention on the design, development and manufacturing of robotic high-pressure water jetting equipment.



**1999**

Launch of Robot 322 – a smaller version of the 360, quickly gaining popularity.



**2008**

Hydrodemolition is specified by the European Union and approved as European Norm EN1503-4.



**2013**

Launch of the robots 327 and 437 and the new control and steering system, the 7-Series, which is harmonizing steering for all robots, making life easier for operators, as well as reducing complexity for Conjet.



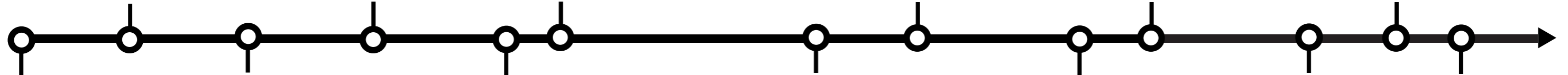
**2019**

Ease-of-use is radically improved by the introduction of a new user interface, allowing intuitive programming of the robot, making it even safer and easier to operate.



**2020**

Conjet embarks on the journey for rapid growth by strengthening our global footprint.



**1984**

Swedish National Road Administration requested a non-destructive method to remove concrete on bridges. Atlas Copco was tasked to develop the product.



**1992**

Launch of Robot 360 – the first robot in the market that can move 360 degrees, thus optimised for use on horizontal surfaces, walls and ceilings.



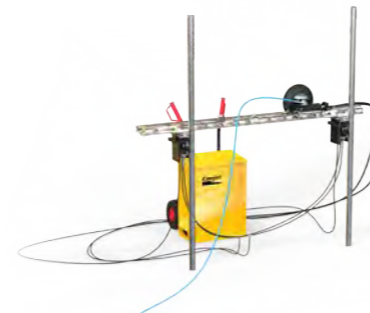
**2000**

Launch of Robot 432 – the world's most powerful machine for horizontal removal.



**2009**

Launch of Nalta – the smallest robot in the market. Nalta climbs on scaffolding pipes and is extremely light weight and is optimized to work in confined spaces.



**2014**

Launch of Robot 557 – an all-round robot thanks to its multi-purpose arm, extended reach and outstanding stability, allowing quick repositioning.



**2019**

Gulfstream Nordic Holdings AB acquires the majority of shares in Conjet AB.



**2021-**

Conjet North America headquarters established in Charlotte, North Carolina.



An education  
for professionals

A WORLDCLASS EDUCATION WITH GLOBAL REACH



# CONJET UNIVERSITY

Conjet University aims to give operators and supervisors the correct knowledge base for performing Automated Concrete Removal in the safest and most profitable manner possible.

Understanding the machine and the method is essential for both operators and supervisors. Correct knowledge presents new possibilities and maximizes the potential for utilization of both machine and technique.

Safety is the guiding light when it comes to using high-pressure water and a main topic at Conjet University.

At Conjet University, you will receive hands-on experience using the ACR™ robot and high-pressure water.

The topics during the one and a half day course are:

## SAFETY

- Personal safety
- Work site safety
- Machine related safety
- Regulations and laws

## HYDRODEMOLITION AND SURFACE PREP

- The method
- Concrete fundamentals
- The need for cleaning
- Damage types
- Which ACR™ robot is suitable?

## PRODUCTS

- ACR™ operation, manual and automatic
- Service and troubleshooting

## ENVIRONMENT

- Handling wastewater
- Treating wastewater
- Recycling







“WE ARE SPECIALISTS IN  
AUTOMATED CONCRETE REMOVAL AND  
SURFACE PREPARATION. SAFE FOR THE  
STRUCTURE, FOR THE OPERATOR AND  
FOR THE ENVIRONMENT.”

Our secret? We use Automated Concrete Removal (ACR™) robots to get the job done. The technology, based on hydrodemolition, has been developed in Sweden for 35+ years and has a proven track record of being the best technology to use for concrete removal and surface preparation.

Safe, automated concrete removal with reliable results – that’s our spirit and passion!

Join **TEAM CONJET** by signing up for a qualifying training session at Conjet University. This is how we make sure **TEAM CONJET** is made up of experts in safe, automated concrete removal.

**TEAM CONJET** consists of qualified team members across the full value chain:

- Qualified Sales Representatives
- Qualified Service and Support Technicians
- Qualified Operators
- Authorized Channel Partners

  
**TEAM CONJET**

Want to learn more? Visit [conjet.com/teamconjet](https://conjet.com/teamconjet)

**TEAM CONJET**



# EXPLORE OUR PRODUCT RANGE



Conjet Automated Concrete Removal (ACR™) robots using hydrodemolition technology.





## ROBOT 557

# User-friendly with reach and flexibility

The track-driven and fully automated Robot 557 is available in a horizontal, standard or XL versions. The standard and XL models are equipped with an MPA (Multi-Purpose Arm) that allows you to easily adjust and position the cutting head with the help of the remote control. Together with the adjustable chassis and track extension, the robot is versatile and compact with unique reach and stability. The Robot 557 is also equipped with a sliding main body to adjust the robot's center of gravity to ensure stability during overhead operation. All versions of the Conjet ACR™ Robot 557 are available with a diesel or electric engine.

The horizontal version of the Robot 557 is optimal for fast and easy concrete removal on parking decks, bridges and other horizontal areas, while the standard or XL version are preferred for wall and over-head tasks. The standard and XL versions can also be used for larger horizontal applications.

As with all Conjet ACR™ robots, the Robot 557 is fully compatible with the Conjet ONE system.







## ROBOT 327

# Compact and flexible

The Robot 327 is an electrically powered, track-driven, fully automated concrete removal robot that is compatible with the Conjet ONE control system. The robot has been developed to work in confined spaces and areas. It passes through an opening less than 3 feet (0,9 meters) wide.

The Robot 327 is highly customizable. Different variations of tools and arms can be combined to match your project's needs. Apart from the arm and tool configurations, the high-pressure lance on the Robot 327 can be equipped with either a single nozzle or a double nozzle assembly depending on the type of work. The robot can also be equipped with a winch for working in slopes. Further, a rotary head can be attached for surface preparation.







## JETFRAME 101 NALTA

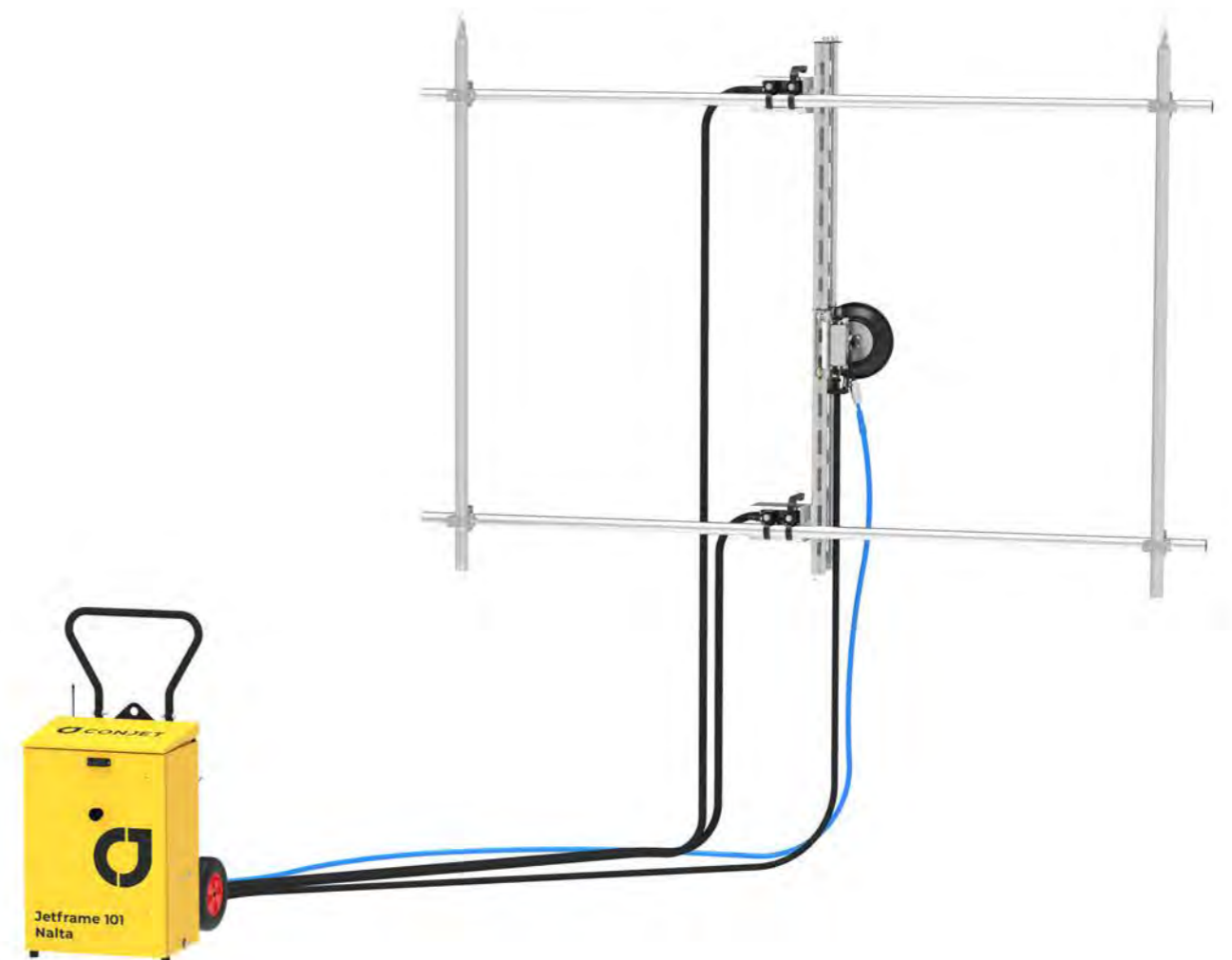
# Efficient and portable

The name Nalta, the Northern Swedish word for half of half, embodies the goal when Conjet designed the Jetframe 101 Nalta, the smallest and lightest fully automated concrete removal robot on the market. The Nalta is specifically designed to operate where space is limited, such as between a building and scaffolding. It can also quickly be dismantled into components small and light enough to be carried by one person.

The Nalta allows selective concrete removal in narrow, confined areas inaccessible with other methods. The Nalta is remotely operated from a distance of up to 164 feet (50 meters) on horizontal, vertical or angled surfaces.

Due to the unique design of the Jetframe Nalta 101, where no electricity is present at the cutting head, the robot can safely be used underwater for repair of bridge foundations and similar structures.

The Nalta consists of a cutting head mounted on a feed beam. The feed beam features step units that connect to standard scaffolding pipes. You also have the ability to design custom pipe framing to suit your specific needs.







# POWERPACKS

High pressure water pumps for all Conjet ACR™ robots

Conjet's ACR™ robots use hydrodemolition to remove concrete. This technology requires a reliable supply of high-pressure water.

The Conjet ACR™ robots operate seamlessly with the powerpack thanks to the steering system, Conjet ONE. The Conjet ONE system makes it possible to control both the robot and the pump remotely using the wireless radio control box. All operations can be communicated from the control box or from the display on the robot, resulting in shorter start-up times, safer and more precise operations, and better results.



## FEATURES

- Integrated emergency stop circuits for improved safety
- Exhaust emissions are controlled to meet U.S. EPA and EU regulations
- Silenced and insulated to meet noise emission requirements and tough climate conditions
- Designed to operate 24 hours/day, 7 days/week
- Electronic control system for the pump and engine
- Force-feed lubrication of the high-pressure pump protects the pump even under extreme operating conditions
- Rigid design certified for sea transport (ISO standard)
- Side doors for easy access during maintenance

Leaving minimal environmental impact

# WATER TREATMENT



Automated Concrete Removal (ACR™) uses hydrodemolition technology, where water consumption and disposal of water and solids are factors to be considered. That is why all ACR™ robots can be operated together with a sufficient system for water treatment.

Through Conjet's collaboration with Reprotex, a leading company for mobile wastewater treatment, our customers can utilize a 'closed water circuit' – where water will circulate from the pump to the ACR™ robot, to the water recycling unit, and back to the pump for continued usage.

The main items to be considered for water treatment

in connection to restoration of concrete structures are suspended material, pH adjustment and other pollutants such as organics and anhydrous substances and metals.

## ADVANTAGES

- Cost savings (water/sludge transport)
- Flexibility and mobility
- Easy to operate
- Innovative recycling technology
- Water management in conformity with applicable regulations







We have 35+ years of experience working with and developing ACR™ hydrodemolition robots. When you need us, we are there!

## WORLD CLASS SUPPORT

Conjet's aftermarket support services focus on keeping you and your robot running at all times. We provide the expertise, parts and tools for you to maintain the highest utilization rates possible. Years of experience have taught us the needs in the field. We want to share that knowledge with you through extensive aftersales support.



### TECHNICAL SUPPORT

No matter when and where you are, you have access to world class technical support from Conjet. Utilizing merged reality technology, we are able to assist you "as if we were at your side."



### SPARE & WEAR PARTS

We stock and supply the correct parts for your equipment, with a focus on maximizing delivery speed, to minimize downtime.



### ADD-ONS

If you find a new potential project for your equipment, we are happy to assist you in selecting the proper tools or add-ons to get the job done in a fast, cost effective and professional manner.



## WORLD CLASS TRAINING

Safety and correct handling of the equipment is paramount for successful operation and maximized lifetime. We take pride in sharing our knowledge with you through our extensive training sessions when commissioning a new robot.

### SAFETY

Personal safety as well as machine related safety are two topics that are covered extensively in all training sessions.

### OPERATION

Learning how to maneuver and configure your machine are essential to utilize the full capability of your robot.

### SERVICE

To maximize uptime, service is paramount. We go through every aspect of routine maintenance to ensure consistent operations.

### SUPPORT

We train you on how to utilize the robots' troubleshooting functions to avoid unplanned downtime.



**Conny Tångring**  
Service Manager, Conjet

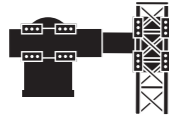
"I became a Conjet technician in the mid-80's while Conjet was still a product in the Atlas Copco company, and made my first visit to a Conjet customer jobsite 1986. All my visits to different sites around the world have shown me the importance of proper training. Training not only improves the final hydrodemolition result, but also equips the operator and colleagues with a confidence that brings out the best in both operator and machine."



## Tools and spareparts



MULTI-PURPOSE ARM



MAST KIT



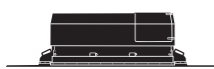
TOWER KIT



BASE EXTENSION



STANDARD



HEAVY DUTY (STANDARD)



RADIUS



STANDARD



WIDE PROTECTION



SHIP/SURFACE PREPARATION



ROTOR



ROTOR



TUNNEL OSCILLATOR



NALTA ROTOR



NALTA OSCILLATOR

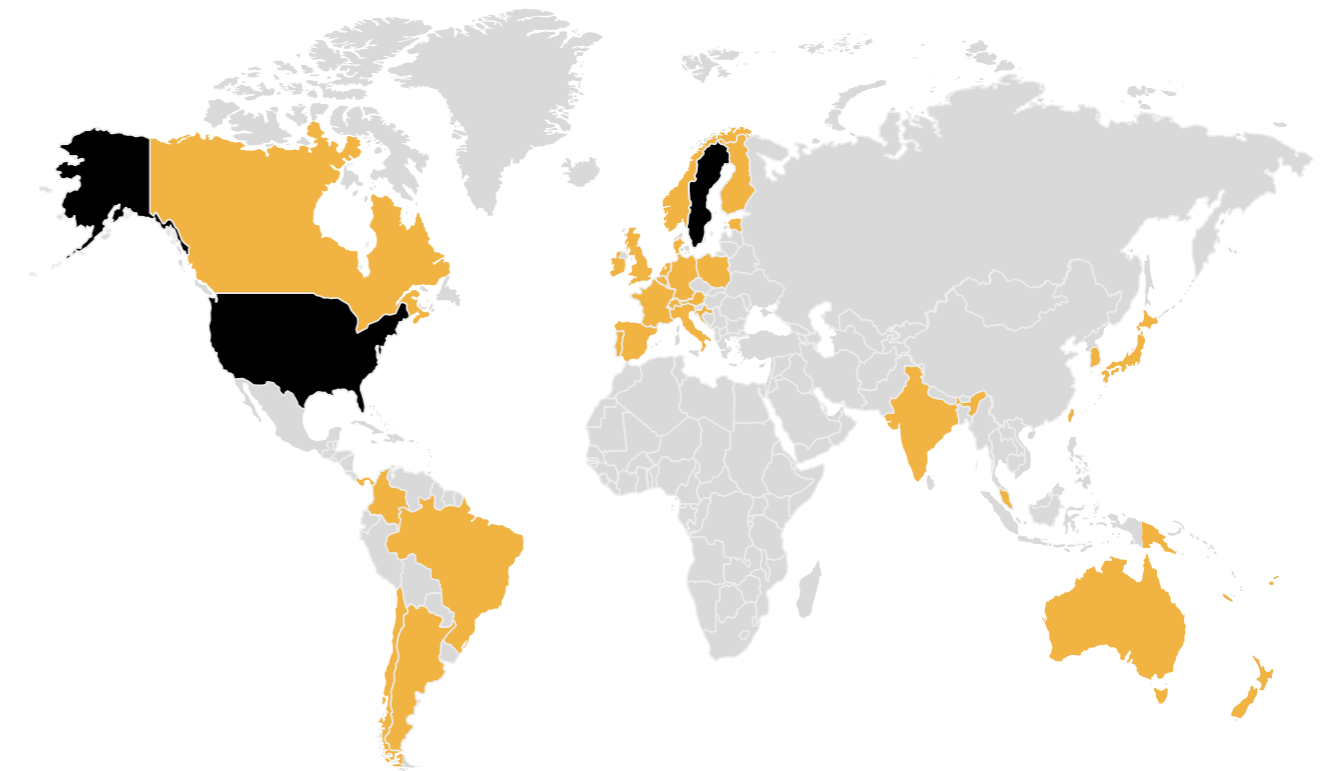
# PREMIUM IS THE STANDARD

We offer a wide range of tools and accessories that easily can be mounted on or used with the standard Conjet ACR™ robots to accommodate your specific needs. We also offer a complete assortment of original spare parts and consumables to make sure your robot is always equipped with the quality it deserves. For more information about tools, accessories, spare parts and consumables, please visit [www.conjet.com/accessories](http://www.conjet.com/accessories).

If your robot needs service or maintenance, we or one of our authorized partners are always ready to help. For more information about service and maintenance, please visit [www.conjet.com/aftermarket](http://www.conjet.com/aftermarket).

Together with our partners, we are Team Conjet and we are ready to support you!

## WORLD OF CONJET



Conjet Office

Team Conjet Partner

For updated information about our partner network, please visit [www.conjet.com/teamconjet](http://www.conjet.com/teamconjet).

If you do not find a Team Conjet partner in your country or region, please submit your contact information at [www.conjet.com/contact](http://www.conjet.com/contact) and we will get back to you.

### CONJET OFFICES

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Bridges. Parking Decks. Dams. Tunnels. Piers. If a concrete structure needs repair, Conjet has the optimal concrete removal solution for the task.

For over 35 years, we have led the development of robotic hydrodemolition technology – a technology with a proven track record as the most sustainable and effective method for concrete removal and other types of surface preparation.

We provide world class training and aftersales support for our partners and customers, Team Conjet, to ensure that projects are successfully performed in a safe, precise and efficient manner.

At Conjet, our collective knowledge and expertise has been built into our Automated Concrete Removal robots. Safe for the structure, safe for the operator and safe for the environment.

**We call it ACR™**



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