

AQUA CUTTER 450A/450V
Hydrodemolition robots

Compact, electric hydrodemolition



AQUAJET



AQUA CUTTER 450

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The Aqua Cutter 450A and 450V are the latest high-performance hydrodemolition robots from Aquajet, combining advanced technology with a compact, electric-powered design. While both models share core innovations, each is designed to excel in different applications, offering distinct advantages based on project requirements. Despite their compact footprint, the 450A and 450V handle reaction forces up to 1600N, delivering exceptional power and reach in confined spaces and zero-emission environments—making them ideal for applications where larger machines can't go.

The new electric 450 series brings the power and innovation of Aquajet to a more compact, maneuverable design. As smaller siblings to the Aqua Cutter 750V, these models incorporate the advanced Evolution 3.0 control system, the patented Infinity oscillation system, and an array of other cutting-edge features. Despite their reduced size, they can handle reaction forces up to 1600N, making them highly effective in confined spaces without compromising performance. Like all Aqua Cutter robots, the 450A and 450V efficiently clean and descale rebar without causing microfractures, ensuring structural integrity. They also deliver exceptional reach in horizontal, vertical, and overhead applications, making them ideal for a wide range of hydrodemolition projects.

Electric powered for sustainable operations

Both robots in the 450 series are electric-powered, making them ideal for urban hydrodemolition projects and other environments where zero emissions are required. They also feature a detachable Power Control Module (PCM), allowing the PCM and the robot's tracked crawler to operate separately. This enables the PCM to remain in a safe location while the crawler — remotely controlled via radio — navigates confined or hazardous spaces such as narrow tunnels or flooded sewer pipes.

Seamless compatibility

The 450 series is fully compatible with the Aqua Spine 3.0 solutions in Aquajet's new Aqua Rail system, as well as a range of attachments and high-pressure pumps, including the Ecosilence. The robots also integrate seamlessly with Aquajet's Ecoclear wastewater treatment system, a fully automated solution that allows on-site water treatment and recirculation, ensuring environmentally responsible operations.



Aqua Cutter 450A vs. 450V

Two compact robots, two distinct advantages

While both models share core innovations, each is designed to excel in different applications. The 450A excels in maneuverability, making it ideal for tunnels and tight spaces, while the 450V offers superior vertical reach for confined environments. Both are fully compatible with the Aqua Rail System 3.0 for enhanced versatility.

Shared features

- » **Disconnectable Power Control Module (PCM)** allows entry into areas where the electric PCM cannot.
- » **Fully submersible crawler**, enabling operation under water.
- » **Compact design** allows for use on scaffolding, ledges, or other elevated positions.
- » **Ideal for urban hydrodemolition** projects and zero-emission environments.

Aqua Cutter 450A

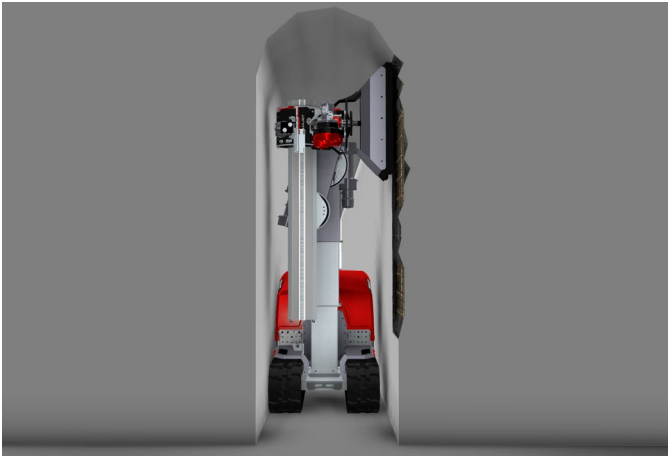
- » **Hydraulic, articulated arm** with two rotating joints and three telescopic extensions.
- » **Circular reach** of up to 3 m (9.8 ft).
- » **Fast and easy positioning** for efficient operation.
- » **Hydrodemolition positioning** - horizontal, overhead and vertical. (Robot works alongside walls.)
- » **Optimized for** confined spaces, such as tunnels, culverts, parking garages and other enclosed areas.



Aqua Cutter 450V

- » **Extendable tower system.** Add on tower sections for greater reach while maintaining a compact footprint.
- » **Extendable reach** up to 4 m (13.1 ft), without support.
- » **Use tower support** and reach up to 10 m (32.8 ft).
- » **Hydrodemolition positioning** - horizontal, overhead and vertical. Adjustable hoist and tilt function for precise positioning. (Robot can work against or alongside walls).
- » **Optimized for** vertical applications in tight spaces, including operations in shafts, high walls, and overhead work.

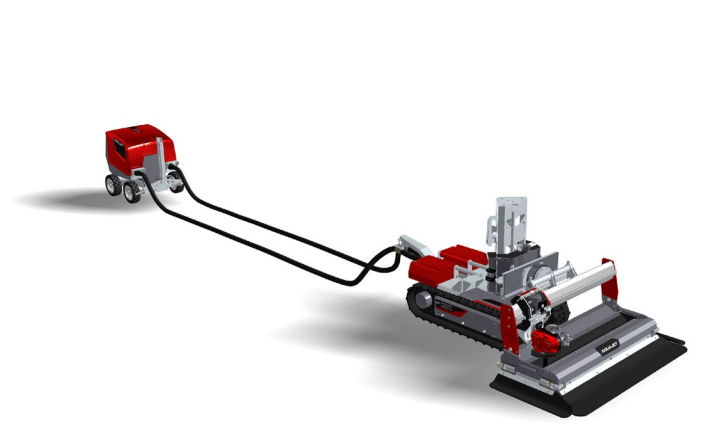
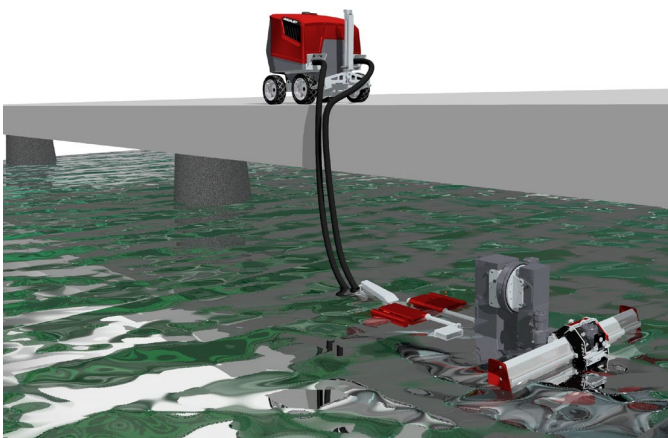
AQUA CUTTER 450 Hydrodemolition robots



The Aqua Cutter 450A is designed for efficiency in narrow and confined spaces like tunnels, culverts, and parking garages. Its hydraulic, articulated arm rotates to follow curved surfaces and extends up to 3 meters (9.8 feet) from the robot, enabling precise work on horizontal, vertical, and overhead surfaces. With zero emissions and low noise levels, it's an ideal choice for urban hydrodemolition projects, delivering powerful performance in enclosed environments.



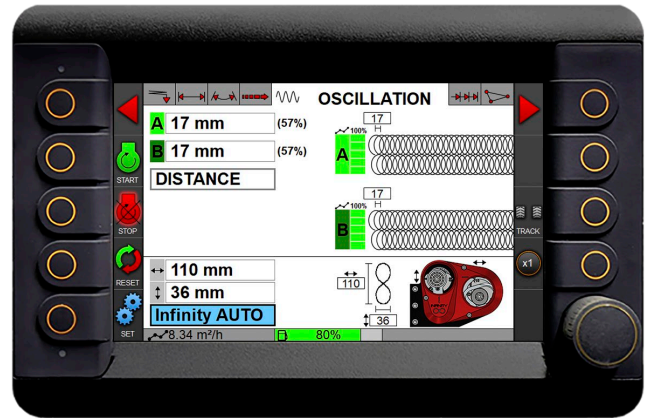
The Aqua Cutter 450V, equipped with an extendable tower system, is the perfect choice for vertical applications in tight spaces such as shafts, high walls, and overhead work, but it is just as efficient in horizontal work. It offers a reach of up to 4 meters (13.1 feet) without support and up to 10 meters (32.8 feet) with support. Its adjustable hoist and tilt function ensure precise positioning of the power head, making it easy to retract, inspect the results, and resume work seamlessly.



With a disconnectable Power Control Module (PCM), both Aqua Cutter 450 models can reach areas inaccessible to electric-powered equipment. Separating the PCM from the tracked crawler allows them to operate independently via radio control. This keeps the PCM in a safe location while the fully submersible crawler navigates confined or hazardous spaces, such as narrow tunnels or flooded sewer pipes.

AQUA CUTTER 450

Features



Features

Evolution Control system 3.0

The Evolution 3.0 control system enhances robotic management, integrating seamlessly with the Aqua Cutter 450 and 750 series. The interactive display shows the impact of settings, offering basic mode for quick setup or advanced mode for complex tasks.

- Programmable functions
- User-friendly interface and safety features
- Remote operation
- Data monitoring and maintenance tracking

Infinity Oscillation

The Infinity oscillation, a patented Aquajet innovation, improves concrete removal efficiency and creates a smoother surface. It allows the lance to move in a dual circular motion, rather than just a pendulum, maintaining a constant oscillation speed and eliminating pipe holes.

EDS (Equal Distance System)

All our Aqua Cutter robots feature our patented EDS system, short for Equal Distance System. The EDS keeps a preset distance from the nozzle to the concrete surface. This is a major advantage. Standard systems without EDS make the water jet lose a lot of power before it hits the concrete.

Smart Lance Technology

The patented Smart Lance software, standard on all Aqua Cutter robots, optimizes lance control by coordinating speeds between the power head and lance. It adjusts automatically during turns, ensuring consistent speed, reduced turning zones, and maximized surface coverage for greater accuracy and removal efficiency.

Tower positioning system

All Aqua Cutter V-models feature a tower positioning function, allowing forward and backward movement to adjust the distance to the target surface, ideal for wall work. When fully extended, the tower enhances stability for handling greater reaction forces and simplifies inspection—retract to check results, then extend to continue seamlessly.

Smooth ride tracks

Smooth ride tracks allow the machine to glide effortlessly over surfaces, ensuring precise nozzle distance and seamless transportation.

Precision drive

This technology ensures precise hydraulic movements, eliminating inconsistencies. In automatic mode, the robot's lance maintains the water jet in the ideal position for optimal hydrodemolition results.

Intelligent Sensing Control

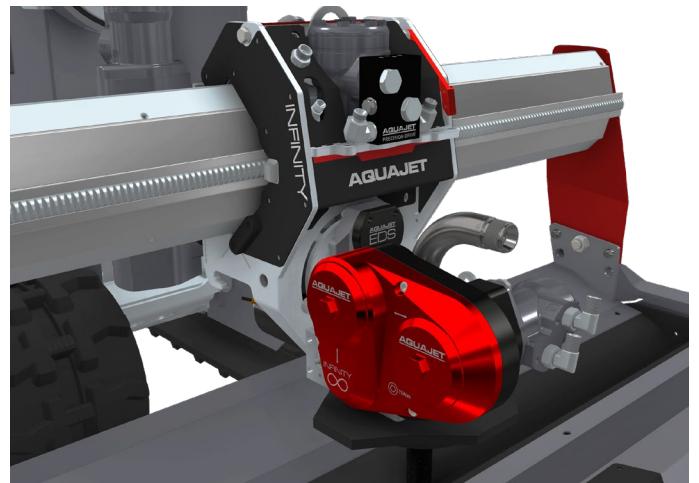
Intelligent Sensing Control (ISC) uses advanced software and closed-loop systems to track water jet movements and monitor the process based on the operator's settings. This reduces downtime and eliminates the need for cables.

Aquajet Online (option)

A cloud-based system for equipment tracking, real-time diagnostics, data collection and analytics. The tool allows customers to track the long-term value of equipment and its impact on their overall operation.

Easy service

The Aqua Cutter 450's innovative design ensures easy maintenance and minimal downtime. A foldable back cover on the Power Control module provides full access for daily tasks and service jobs. The Evolution 3.0 control system further simplifies maintenance with an extensive alarm list. The system also automatically tracks service schedules, notifying operators when maintenance is due, thus keeping downtime to a minimum.



AQUA CUTTER 450

Facts

FACTS	450A	450V
Length	2,17 m (7,1 ft)	2,17-2,34 m (7,1-7,7 ft)
Min. width	0,78 m (2,6 ft)	0,78 m (2,6 ft)
Track width	0,78-1,16 m (2,6-3,8 ft)	0,78-1,16 m (2,6-3,8 ft)
Min. height	0,99/1,07 m (3,2/3,5 ft)	0,99/1,29 m (3,2/4,2 ft)
Operating height	3 m (9,8 ft)	4 m (13,1 ft)
Operating height with top support	-	10 m (32,8 ft)
Side shift stroke	-	0,42 m (1,38 ft)
Side reach	1,27 m (4,2 ft)	0,86 m (2,8 ft)
Lance angle	±45°	±45°
Max reaction force	1600 N	1600 N
Max roller speed AUTO	25,0 m/min	25,0 m/min
Max track speed AUTO	15,0 m/min	15,0 m/min
Noise level	55 dB	55 dB
Hydraulic pressure (operation)	35-200 bar	35-200 bar
Max hydraulic flow	46 l/min	46 l/min
Hydraulic oil tank volume	48 l	48 l
Motor power	Electric motor, 3 phase, Direct start, 5,5 kW	Electric motor, 3 phase, Direct start, 5,5 kW
Sensors	Absolute	Absolute
Control system	Evolution 3.0	Evolution 3.0

Aqua Cutter 450A



Aqua Cutter 450V

