

On location

Bridge on Highway A66
Seville, Spain

CUTTING EDGE HYDRODEMOLITION

AQS-ON088



ASSIGNMENT:
Refurbishment of expansion and structural
joints in 6 bridges

AQUAJET
SYSTEMS AB

SHORT FACTS

Pressure:	1000 bar
Flow:	204 l/min
Pump:	HDP 382 Hammelmann
Nozzle:	3,2 mm ceramic
Concrete hardness:	35 MPa
Hydrodemolition depth:	30 cm
Rebar depth:	10/20 cm (2 rows)

The bridge to success in sunny Seville

Hydrodemolition is the sustainable way to protect and preserve concrete constructions. It's also the fastest and safest technology of choice for emergency repairs. The Spanish contractor, Azul Construcción, knows all this. That's why they chose Aquajet's products to perform multiple surgical emergency operations on 6 bridges outside of the Andalusian capital, Seville.

The task, issued by the local government in Andalusia, Ministerio di Fomento, was to refurbish a number of expansion and structural joints in 6 bridges. Today, bridge work is the most common application for hydrodemolition equipment. Hydrodemolition is perfect when it comes to remove large surfaces, without damaging the underlying rebars. Aquajet's products can also expose highly sensitive bridge joints without damaging post-tensioned cables, and brackets as well as attachments within the joints.

KEEPING A COOL HEAD

To repair the joints at the Santiponce viaducts on highway A66 and Autovia Ruta de la Plata, Azul Construcción used the AQUA CUTTER 410A – one of the most versatile robots on the market. To make all operations as safe as possible, the bridges were completely closed for traffic in one direction. The cutting depth was set to 30 cm, and the rebars were positioned in two rows, 10 cm and 20 cm down. In total, they removed 625 cubic meters of damaged concrete. The majority of the operations were performed at an air temperature of over 40 degrees Celsius. However, that's no problem for Aquajet's robots as they aren't affected by the weather, like bridges and other sensitive concrete constructions.

TIME-SAVING AND SAFE OPERATION

Thanks to the AQUA CUTTER 410A and Aquajet's Evolution Control System 2.0, the performance has been optimal, especially around the edges and under the rebars, which in return has minimized manual finishing. Above all, one AQUA CUTTER 410A robot achieved the same objective in one shift, as one traditional

hydrodemolition unit had to do in two shifts. In other words, Azul Construcción saved time, water and money by choosing Aquajet.

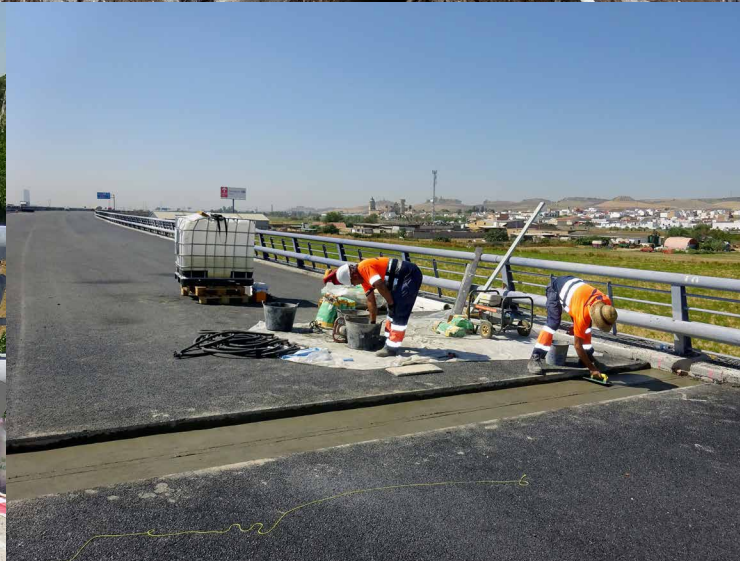
– They are really fast when it comes to demolishing concrete. The Evolution 2.0 control system provides a very accurate control of the tool for removing concrete under rebars. It saves a lot of manpower hours with manual picking after hydrodemolition. The EVO 2.0 is very efficient for cleaning under rebars and on edges of the demolished area, says José Antonio Rodríguez Roldán, Technical Manager at Azul Construcción.

WITH HELP FROM OUR FRIENDS

The hydrodemolition equipment in Seville were purchased from Aquajet's dedicated partner, Hammelmann S.L, in Spain. Hammelmann S.L was established on the Spanish market in 1993, as a subsidiary of Hammelmann GmbH. Since 2015 Hammelmann S.L. is an exclusive distributor of AQUAJET SYSTEMS AB in Spain and Portugal with a very good acceptance by our customers in the rehabilitation of structures. They provide a complete solution for the usage of high pressure pumps and pump units, tank and pipe cleaning systems, waterjet cutting, protective equipment and much more.

ABOUT AZUL CONSTRUCCIÓN

AZUL Construcción is a Spanish contractor specialized in repair and strengthening projects. They often work with applications in confined and tight areas as well as in inhospitable environments. The company has more than 30 years of experience and are highly qualified in Hydrodemolition.



AQUA CUTTER 410A EVOLUTION

Total weight	1190 kg (2620 lb)
Length	2,1 m (6,9 ft)
Min. width	0,78 m (2,6 ft)
Track width	0,78-1,16 m (2,6-3,8 ft)
Min. height	0,99/1,07 m (3,2/3,5 ft)
Operating height	3 m (9,8 ft)
Side reach	1,3 m (4,3 ft)
Lance angle	± 45°
Working width	0-1,7 m (0-5,6 ft)
Working width extended	0-3,2 m (0-10,5 ft)
Drive source	Electric motor 3 phase 5,5 kW 400 VAC 16A (other on request)

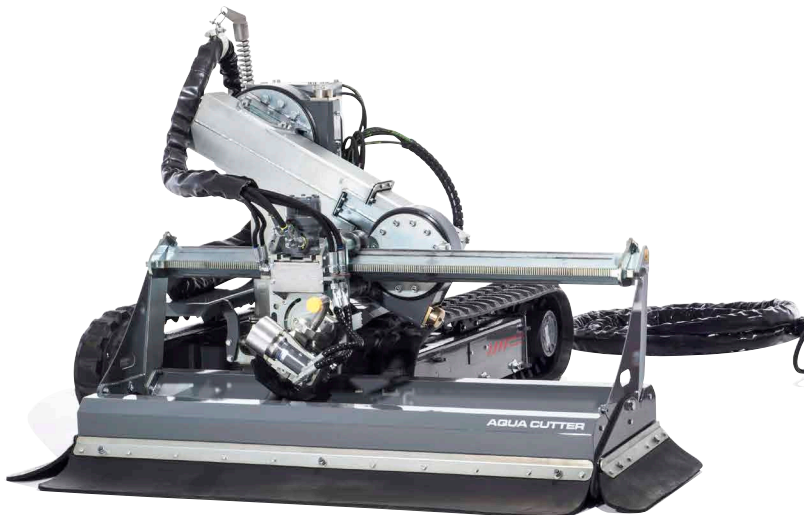
Small and destined for greatness

It's small, compact and suitable for all kinds of operations. But most importantly, it gets the job done every time. With the help of an articulated arm you can reach horizontal, vertical and overhead areas easier than ever before. Meet the world's smallest standard manufactured robot for Hydrodemolition and industrial cleaning – the AQUA CUTTER 410A.

The Aqua Cutter 410A is specially designed for applications within confined areas and to replace hand lance work. Its small size and low weight allow the robot to easily pass through narrow passages such as doorframes or operate from scaffoldings. The hydraulic and articulated arm, with two rotating joints and three extensions, can reach as far as 3 m (9,8 ft). This makes the robot agile, powerful and very easy to position.

CONTROL IN STICKY SITUATIONS

The Power Control Module (PCM) can be disconnected from the tracked crawler. This allows you to drive the crawler into tight and inhospitable environments, such as small tunnels and flooded sewer pipes. You can operate the crawler from a safe distance with a radio remote control. In such situations the PCM is connected to the crawler by a cord, ensuring complete control of the robot in horizontal, vertical and overhead operations.



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