

# How advanced CRN pumps brought a reliable water supply to thousands of people



Aging pumps and pipework, operational problems, complicated maintenance, and major water leakages. These were a few of the reasons why the Carbonero el Mayor City Council decided to take action and implement new technology to improve the performance of both the hydraulics and motor of one of its water installations. Grundfos CRN pumps helped to optimise the system and maintain a reliable, efficient operation for years to come.



## The situation

The existing installation comprised two 25-year-old 75kW (100 hp) horizontal pumps operated by a shared soft starter. One of the pumps had serious operational problems and the other, due to its age, was not sufficiently reliable – an issue rendered particularly sensitive because of the application for which they were intended. In addition, the installation did not include the necessary lifting capabilities to remove the pumps for maintenance, with the design of the horizontal pumps causing further complication.

The installation also suffered numerous severe leakages due to an aging pipeline composed of fibrocement. And since the new European Water Quality Directive for drinking water requires that operators report the water leakage rate alongside data on the overall performance and efficiency of the supply system, leakages became another major issue for plant owners.

For a city council looking to provide its community with reliable, efficient water supply, these were major issues that needed to be rectified fast.

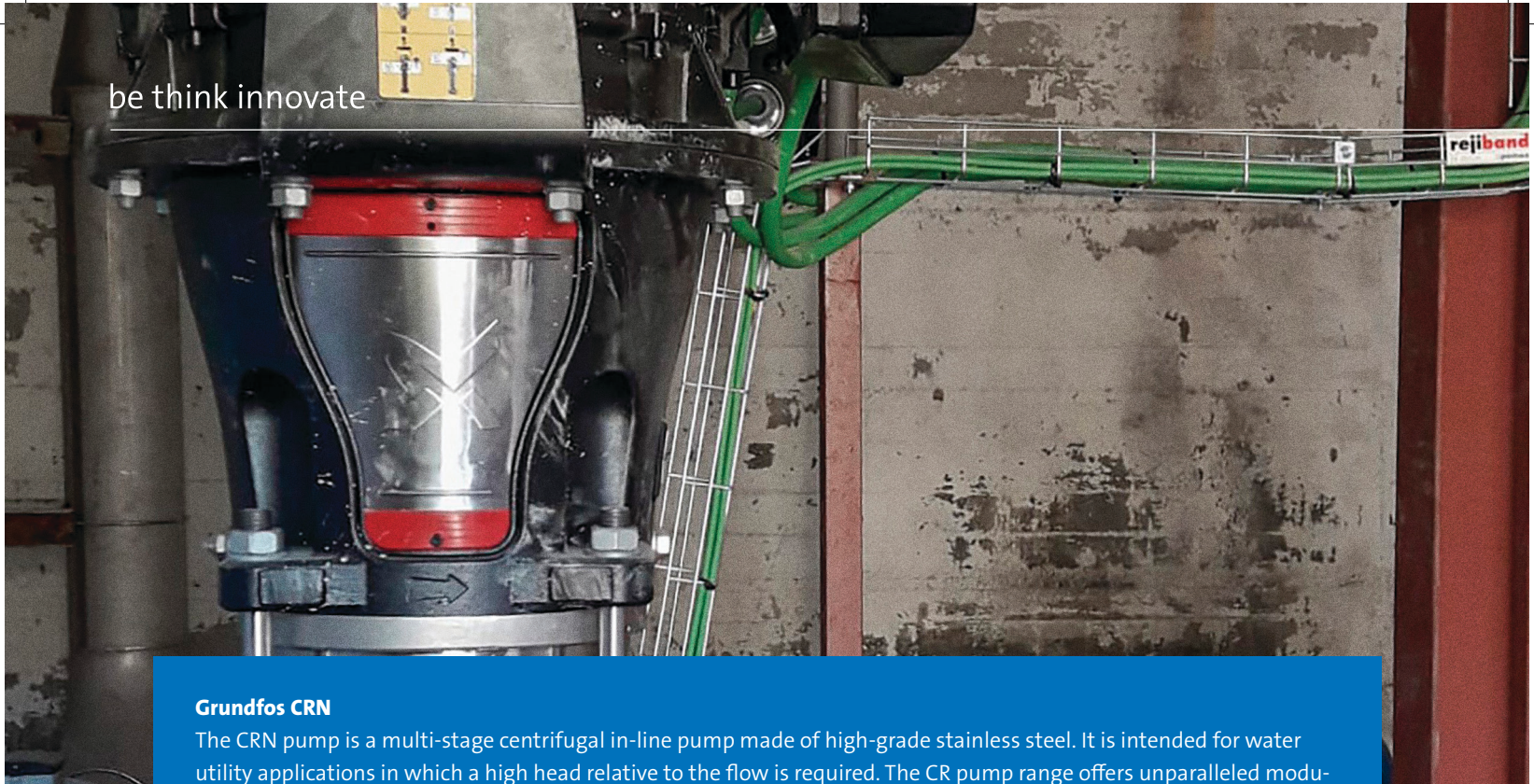


*A detailed view of the new pipes inside the pumping station at the plant.*

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### Grundfos CRN

The CRN pump is a multi-stage centrifugal in-line pump made of high-grade stainless steel. It is intended for water utility applications in which a high head relative to the flow is required. The CR pump range offers unparalleled modularity for water utility and industrial applications including material variants, flow sizes, a variety of shaft seals, rubber materials, and supply voltages.

### The solution

Grundfos was brought in to help and soon supplied new CRN centrifugal pumps offering advanced control and the highest levels of efficiency. With the design features of CRN, such as the ability to change mechanical shaft seals and undertake regular hydraulic checks without the need to remove the pipeline connections, maintenance tasks were significantly simplified, saving time, boosting reliability, and improving peace of mind.

In the existing system, the pipeline was one of the main primary causes for concern. But the CRN pumps were soon able to supply large flow rates of water at high pressure, reducing the risk of leakages and ultimately ensuring a reliable water supply.

The new CRN pumps allowed the supply system to retrieve water from a reservoir and pump it into a tank from which the consumers were supplied.

### The outcome

Since the new CRN pumps were installed, leakages in the installation have not only reduced, they've dropped to zero. This is, in part, due to a better control of the variable frequency drive which helps to avoid overpressure in the pipes.

Energy consumption has also been minimised, and maintenance tasks have been substantially simplified, but perhaps most importantly of all, the CRN pumps have shown that they can manage the supply of large flow rates at high pressure, ensuring a reliable water supply to Carbonero el Mayor's population of 2,500 people.



Two Grundfos CRN pumps provide a reliable water supply to thousands of people.

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