Closed-loop cooling is the preferred way of cooling key processes in petrochemical plants, refineries, power plants and other heavy-duty industrial environments.

Closed-loop cooling is safe, reliable, effective and gentle on the environment. And Alfa Laval’s wide range of plate heat exchangers and filters make your system flexible, cost-efficient and long-lived.
Your closed-loop partner

Alfa Laval is a world-class supplier of closed-loop cooling solutions for just about any industry where such solutions play a key role. Alfa Laval offers a cost-efficient range of large plate heat exchangers and effective filters. We also have the expertise to design, manufacture and provide you with the project management experience to deliver exactly what you need.

Separating the loops

The principles behind closed-loop cooling are simple: We exclude any external cooling water from the actual process cooling water by setting them in independent circuits. The only connection between the circuits is a large plate heat exchanger.

Getting the job done

Closed-loop cooling projects are often complex. Selecting, designing, installing and keeping your process running entails delicate balancing, requiring expertise and skills and experience. - Alfa Laval has the expertise – a design engineering, material sourcing, quality, logistics and project management – to get the job done. They can support customers (contractors and utility duties). They are compact, efficient, flexible, and can easily be adapted to capacity changes. They are also very fouling-resistant, requiring a longer interval for cleaning. Compared to other technologies, e.g. stand-alone cooling towers, closed-loop cooling with PH-Es requires less make-up water and a minimum of water treatment. Consequently, there is less fouling and less maintenance – both of which result in significantly lower operating costs. In some parts of the world, an integrated cooling system is required, comparing closed-loop PHEs and cooling towers. This is a common solution when local authorities enforce a temperature cap for the returning water.

Adaptation is standard

Alfa Laval’s plate heat exchangers are extremely adaptable and easy to optimise for each duty at hand. This means that any number of plates, their thickness and corrugation patterns can all be varied number of plates, their thickness and corrugation patterns can all be varied according to pressure-vessel codes and extended until the returning water.

A perfect fit for every loop

Alfa Laval's line of large plate heat exchangers come with porthole sizes up to 500 mm and flow capacities up to 7,000 m³/h. Plates are available in a variety of materials and executions to suit different project circumstances. As a result, Alfa Laval can propose a right heat exchanger with a perfect fit, a perfect function and continually adjusted on line.

Alfa Laval has a strong business relationship with its suppliers. This helps ensure the availability of key components and materials, even in a situation of shortage. The Alfa Laval advantage

• No project is too complex for Alfa Laval's closed-loop cooling specialists.
• Alfa Laval's global presence, with more than 50 service centres worldwide, makes local customer support widely available.

The filter completes the cooler

If foreign materials such as seaweed, mussels and shells are allowed to enter a plate heat exchanger, the heat transfer is rapidly impaired. Sand and other erosion materials also increase the wear on plates and gaskets, ultimately causing costly shut downs and repairs. Alfa Laval offers proven solutions to these problems. Clean and precise in the filter basket before the water is discharged to the PHE. From time to time, the basket is flushed clean in an automatic two-step process, ensuring that all debris is removed from the basket and flushed out. The easiest place without interrupting operation. Flexible installation

Installation of the ALF filter is very flexible in terms of pipe dimensions, nozle orientation and location. The ALF filter comes in a variety of sizes, with connections and flow capacities up to 1000 mm and 5,000 m³/h, respectively. This means that a single filter can serve more than one plate heat exchange – a cost-efficient set-up in many situations.

The Alfa Laval advantage

• Alfa Laval's experience of industrial process cooling is unparalleled anywhere.
• No project is too complex for Alfa Laval's closed-loop cooling specialists.
• Alfa Laval's global presence, with more than 50 service centres worldwide, makes local customer support widely available.

Nuclear trouble-shooting

The two steam condensing systems on site in Denmark are identical and supplied by Alfa Laval (closed-loop systems). Both systems are in the critical chain of the nuclear reactor, which means that cold and clinical water systems need to be performing perfectly. The Alfa Laval ALF filters have been chosen for this harsh environment, as they are designed to perform in all extreme conditions. The filter is a crucial part of any process cooling system, ensuring that the systems function as they should, and that safety and environmental standards are met. This is why ALF filters are so important in the nuclear industry, as they contribute to the overall performance of the nuclear reactor.