

# Meet Alfa Laval HyBloc™



## Fuelling the future of hydrogen precooling

With the rising demand for hydrogen-powered vehicles comes the need for fuelling stations that deliver high-capacity, high-speed, zero-waiting-time performance. That's why Alfa Laval developed new HyBloc heat exchangers. Engineered to meet these challenges, we can ensure fast, efficient, and safe refuelling for all types of hydrogen vehicles – from passenger cars to heavy-duty trucks, buses, and beyond.

### HyBloc gives you a head start in hydrogen

"One of the greatest challenges in transitioning to hydrogen fuel vehicles is establishing the necessary infrastructure and ensuring reliable, high-quality technology that integrates seamlessly with existing systems", says Ron Faber, Product Leader for Printed Circuit Heat Exchangers at Alfa Laval. "It's not enough to develop the technologies, we need to make them easy to use, so that the market will take them up on a meaningful scale. If we consider hydrogen vehicles as an example, they represent a technology that is being implemented across the globe. Alfa Laval has been focusing on how our printed circuit heat exchangers can help hydrogen vehicles become more mainstream."

### It's elementary

"In developing HyBloc, we took our inspiration from hydrogen itself," continues Ron. "It's the lightest, most energetic element in the periodic table – and we've made a product to match. HyBloc it's small, modular, scalable, and designed to fit easily into existing dispensers. So, it's simple for customers to make the switch and to adopt this technology. We believe that this new level of

accessibility will play a significant role in accelerating the transition to clean hydrogen in vehicles all over the world."

### **Exceptional performance, today and tomorrow**

HyBloc's exceptional performance comes from its ability to handle high operating pressures and deliver large cooling capacities. This combination shortens refuelling times while reducing wait times between fills.

Durable, fusion-bonded plates make HyBloc units extremely robust. They can withstand pressures up to 1,250 bar (18,125 psi), and operating temperatures as low as -196°C (-320.8°F).

Designed for today's H70 systems operating at 700 bar and tomorrow's even higher refuelling pressures, HyBloc is future-ready for the next generation of hydrogen fuelling applications.

### **Continuous cooling, with a tiny footprint**

Unlike other heat exchanger technologies, which require time to recharge between fuelling sessions, HyBloc's combination of a compact, thermally responsive design and a continuously operating cooling loop enables back-to-back filling, with no waiting time. And as HyBloc precoolers are approximately 85% smaller than comparable shell-and-tube heat exchangers, they fit easily into existing dispensers. The compact design eliminates the need for costly, time-consuming underground installations, making them ideal for use in limited-space environments.

### **A fully customized solution**

The HyBloc range consists of seven standard models designed to meet diverse capacity requirements and accommodate all types of vehicles. This includes four models suitable for liquid cooling (HyBloc) and three models optimized for vaporizing cooling with carbon dioxide (HyBloc C).

If you need a customized solution, HyBloc can be engineered-to-order and optimized for your specifications, including cooling fluid and capacity requirements, to ensure maximum performance.

### **There is no substitute for experience**

"Choosing a HyBloc is only the beginning," says Ron. "Our application experts are ready to support you throughout the development phase. We can advise how to optimize your precooling process to get the best out of your system. And as one of the world's largest heat exchanger manufacturers, you can also rest assured that we have the capacity to meet your supply demands as your business increase."

### **Worldwide support**

As a truly global supplier, Alfa Laval can provide expertise wherever and whenever you need it. Our local technicians can support you during installation and commissioning, as well as with any service needs you may have during your equipment's lengthy operational life.

To learn more about Alfa Laval HyBloc heat exchangers, please visit:  
<https://www.alfalaval.com/hybloc>

## This is Alfa Laval

The ability to make the most of what we have is more important than ever. Together with our customers, we're innovating the industries that society depends on and creating lasting positive impact. We're set on helping billions of people to get the energy, food, and clean water they need. And, at the same time, we're decarbonizing the marine fleet that's the backbone of global trade.

We pioneer technologies and solutions that free our customers to unlock the true potential of resources. As our customers' businesses grow stronger, the goal of a truly sustainable world edges closer. The company is committed to optimizing processes, creating responsible growth, and driving progress to support customers in achieving their business goals and sustainability targets. Together, we're pioneering positive impact.

Alfa Laval was founded 140 years ago, has customers in some 100 countries, employs more than 21,300 people, and annual sales in 2023 were SEK 63.6 billion (5.5 BEUR) in 2023. The company is listed on Nasdaq Stockholm.

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### For further information, please contact:

**Ron Faber**  
Product Leader Printed Circuit Heat  
Exchanger  
Phone: +31651638202  
E-mail: [ron.faber@alfalaval.com](mailto:ron.faber@alfalaval.com)

**Aurelie Auve**  
Marketing Manager  
Phone: +33604525767  
E-mail: [aurelie.auve@alfalaval.com](mailto:aurelie.auve@alfalaval.com)