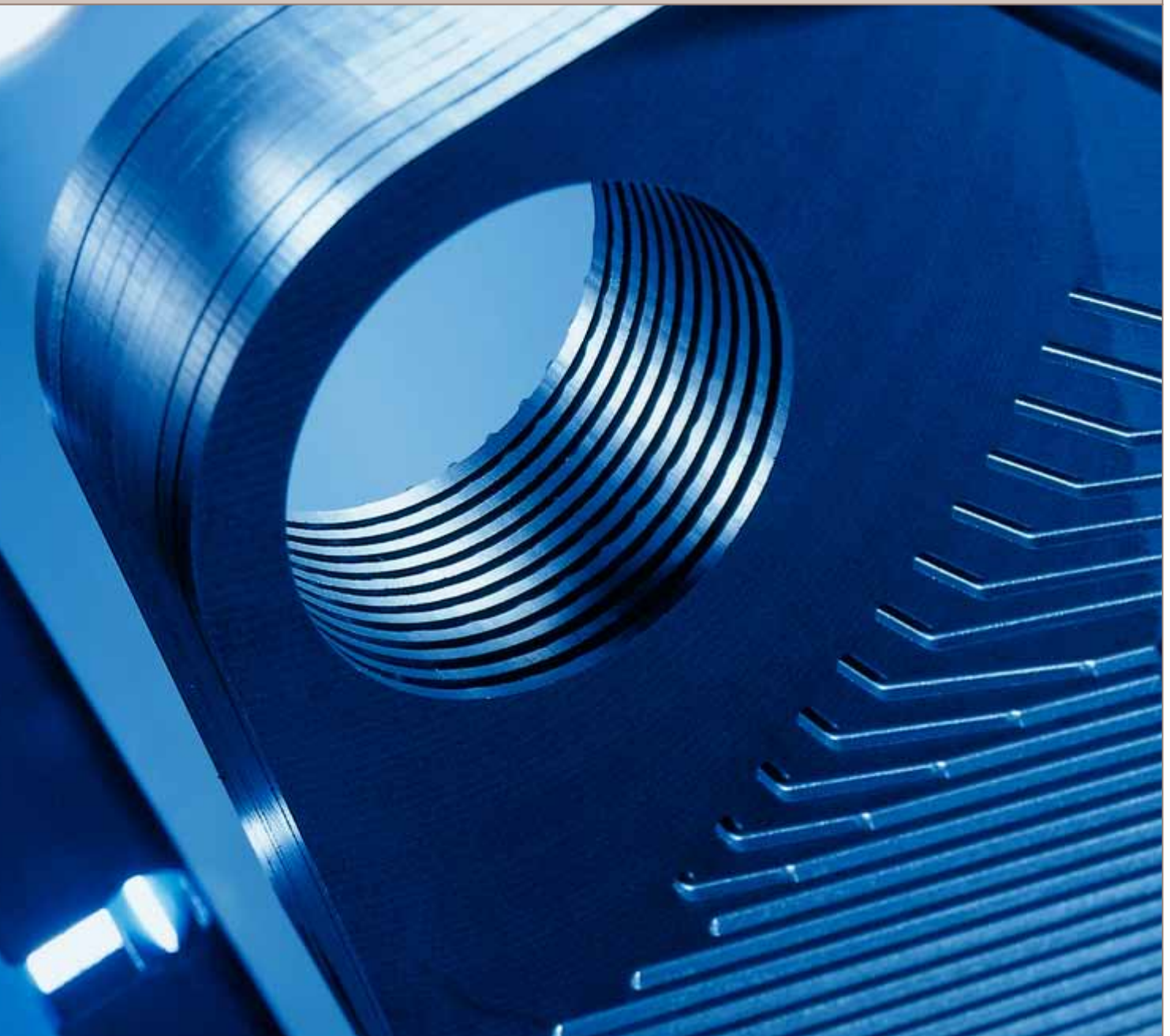




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## Smooth Efficiency for Tough Environments

Alfa Laval DIABON® plate heat exchangers



# Smooth efficiency for tough environments

Alfa Laval DIABON® graphite heat exchangers are designed to smoothly operate in the toughest environments. Allowing minimal downtime and maximum thermal efficiency with the smallest possible footprint. They provide excellent corrosion resistance and flexibility for the most demanding of processes.

Alfa Laval DIABON® plate heat exchangers are the ideal solution for processes in which metallic plates with low corrosion resistance cannot live up to service life requirements, and where the heat transfer efficiency of heat exchangers that use materials such as glass and Teflon® is unacceptably low.

Compared with other graphite solutions, such as graphite blocks, Alfa Laval DIABON® plate heat exchangers provide the additional advantages of reduced fouling and full access to the heat transfer surface.

# Standing strong against time

The unique graphite plate ensures high-efficiency heat transfer with exceptional corrosion resistance increasing both life-time and operational efficiency.

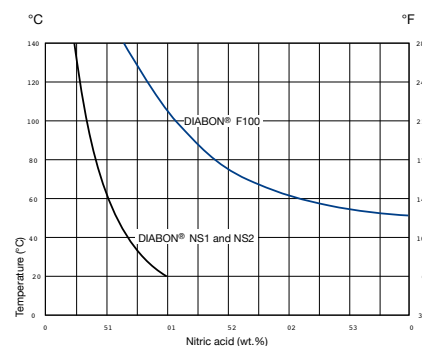
Alfa Laval DIABON® plate heat exchangers are available in three different material grades, DIABON® F100, NS1 or NS2. The channels are sealed by PTFE gaskets that provide a very thin seal, resistant to alteration by all known chemicals and can withstand very high temperatures.

DIABON® F100 is a unique composite of fused graphite and fluoroplastic which provides excellent resistance to oxidizing materials, long life and a greatly reduced tendency for fouling.

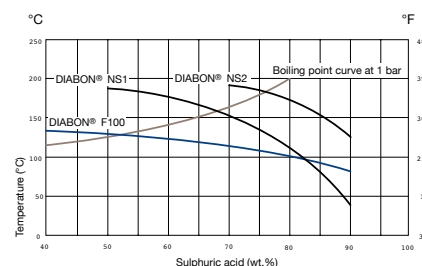
DIABON® NS1 and NS2 are both resin-impregnated fine-grain graphite materials with a highly homogeneous structure and uniform distribution of pore size. This provides a combination of high strength and excellent heat transfer properties with up to five times greater safety factor against stress and fatigue cracking than comparable graphite block heat exchangers.

## Reliable Operation

Alfa Laval DIABON® plate heat exchangers have been engineered to maximize your operational efficiency by providing the ultimate in corrosion resistance, decreased fouling and reduced stress and fatigue.



Compared with standard resin-impregnated graphite DIABON® F100 offers superior resistance in oxidizing environments



Resistance towards sulphuric acid for DIABON® F100, DIABON® NS1 and DIABON® NS2



### Corrosion resistance

Due to the outstanding corrosion resistant characteristics of DIABON® Graphite plates, there is very little need to stop operations to replace or repair components. Even in the harshest environments these materials provide a long life cycle minimizing your down time.

### Less fouling

A special plate pattern that enhances controlled turbulence in the flow greatly reduces the affects of troublesome fouling. In addition, the smooth non-porous surface with anti-adhesive properties also minimizes fouling on the plate surface. The anti-fouling properties of the plate design are also increased by a special plate pattern that enhances turbulence.

### Reduced stress and fatigue

The channels between the graphite plates are sealed by PTFE gaskets and the tightening bolts on the frame are fitted with springs to compensate for thermal expansion of the plate pack minimizing the risk of plate cracking.



DIABON® plate heat exchangers are ideal for handling highly corrosive fluids in the most demanding of applications including:

- hydrochloric acid and gas in all concentrations
- sulphuric acid up to 85%
- hydrofluoric acid up to 50%
- phosphoric acid
- pickling acids in surface treatment plants
- electrolytes used in the mining industry
- mixed acids
- chlorinated hydrocarbons
- catalysts such as aluminium chloride.

## Compact and flexible

Alfa Laval DIABON® plate heat exchangers are extremely compact often utilizing only 40% of the space compared to shell-and-tube and carbon block heat exchangers. Due to the very small footprint, new equipment can be installed even in extremely confined spaces, to boost the performance and capacity of existing plants.

Alfa Laval plate heat exchangers are all based on a design that is inherently flexible and easier to customise to adapt to changing requirements with easier adjusted temperature control. The number and specifications of the plates can simply be increased, reduced or altered as the capacity you require varies with time.







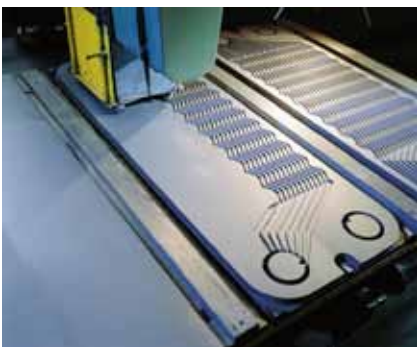
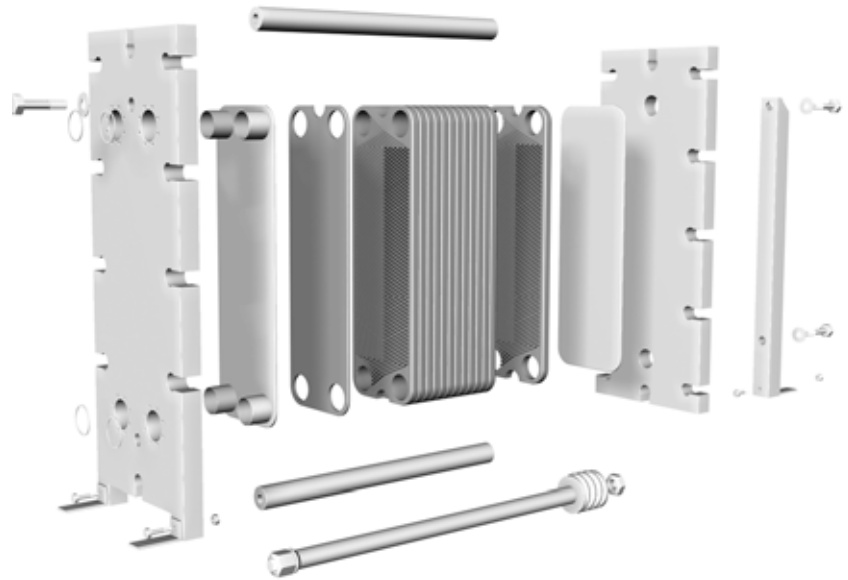
## Dependable Operation and Easy Maintenance

Our graphite heat exchangers are engineered to cut down on maintenance, service and cleaning and to dramatically lessen the down time these can involve. This results in fewer, much quicker inspections and rapid cleaning.

The Alfa Laval solution means that all cleaning or plate replacements can be done on site and within the physical footprint of the unit.

The plates are easily accessible and extremely safe to work with. The plates can be cleaned simply with high-pressure water or with an automated CIP (Cleaning-In-Place) system.

Our worldwide team of Alfa Laval service experts can provide training on site during installation and if needed can provide assistance on site.





## The economical sustainable solution

In a future of rising energy prices, demands for environmental responsibility and cost competitiveness your industrial processes require reliable, flexible solutions with lower installation costs and reduced operational downtime.

In large scale applications many customers find that multiple graphite plate heat exchangers provide a superior solution to blocks or shell-and-tubes due to the savings they can make with respect to maintenance, operational flexibility and increased uptime.

With 2-3 times more possible heat recovery than traditional block and shell-and-tube heat exchangers you can maximize your resource efficiency and dramatically lower your energy costs.

Less downtime and superior heat recovery leads to short pay back times for initial investments. With an eye on the bottom line and environmental responsibility, can you afford not to convert?

Alfa Laval and SGL Carbon have installed more than 3,000 DIABON® plate heat exchangers to date, for applications that include:

- hydrochloric acid processes
- carbon and stainless steel pickling
- mining
- chlorinated hydrocarbon processes
- fertilizer production
- etching of aluminium foil
- pigment treatment
- wastewater treatment.



### Secure partnership with Alfa Laval

Alfa Laval's business has the sole focus of providing our customers with technologies and solutions that help optimize your operations. Choose Alfa Laval and you choose the best equipment on the market. The impeccable quality and engineering of our

products ensure the highest standards of reliability and durability. We pride ourselves on being a dependable partner with guaranteed delivery times for our products, parts and services. Alfa Laval –The secure and responsible choice.

### **Alfa Laval in brief**

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

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