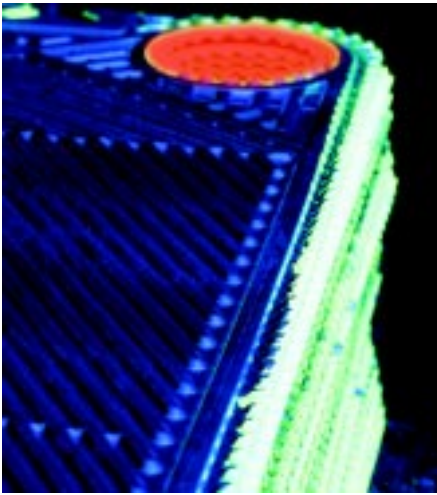


Reconditioning of plate heat exchangers



Reconditioning...



Wear and tear eventually take their toll on even the highest quality plant equipment. Plate heat exchangers, an integral part of production lines in many industries, are no exception.

In a plate heat exchanger, extreme temperatures, pressures and hostile conditions can threaten the gasket and lead to a failure of the sealing system.

Every gasket has a limited lifetime – even under the most favourable conditions. Without proper service from a reputable supplier, costly unplanned downtime can result.

For decades Alfa Laval has been known for plate heat exchangers of unrivalled reliability and endurance and outstanding service on its products. Now Alfa Laval is also becoming known for its FullService, a unique complete reconditioning service to restore plate heat exchangers to peak performance, regardless of the original manufacturer. All with a good-as-new guarantee.

Proper maintenance extends the plate heat exchanger lifetime and gives the plant a competitive edge by cutting operating and maintenance costs. So before you put plant profitability and operation at stake by letting a less-known supplier recondition your plate heat exchangers, ask yourself the following questions:

“Does the supplier provide reconditioning or just regasketing?”

Many suppliers provide just a regasketing service. Alfa Laval provides a unique reconditioning service program which includes a total assessment of the plate’s condition, not simply gasket replacement.

The Alfa Laval reconditioning program includes visual inspection and crack detection to determine if the plate is damaged by corrosion or deformation and to ensure correct alignment and optimal sealing.

“Who made the gaskets, where, when and of what?”

Look-alikes don’t necessarily perform alike. The grade of rubber should be carefully selected to conform to operating media and temperatures in a plate heat exchanger. Many less reputable gasket manufacturers don’t test their gaskets under operating conditions.

All gaskets should be clearly marked with the supplier code, the batch number and the date of manufacture. Otherwise the gasket could be past its prime before it is even fitted to the plate. Less known manufacturers don’t say which grade of gasket rubber has been used and how the gaskets have been stored. Most importantly, they don’t say how the gaskets perform under the actual operating conditions.

“Were the cleaning methods developed specifically for plate cleaning?”

Many service suppliers clean the plates with chemicals that can attack the plate material. Alfa Laval’s cleaning procedures have been specially developed for use on metal plates to ensure high heat transfer with-out damage to the metal.

Alfa Laval – your local service partner

Gasket removal and plate cleaning and evaluation

Upon arrival at the service centre, qualified service engineers assess the condition of the plates. Only plates passing Alfa Laval's rigid inspection tests are reconditioned.

Over the years suppliers have developed various methods for removing gaskets from the plates before regasketing. The most effective and gentlest method is freezing off the gaskets by dipping the plates in liquid nitrogen, a method developed and perfected by Alfa Laval. The plates are then cleaned in accordance with specially developed cleaning procedures specifically formulated to remove fouling and scaling without corrosion attack.

And last but not least, before regasketing, plates are inspected using ultraviolet light or dye penetrants to detect even the minutest pinholes or cracks.

Sealing technology – more than just a piece of rubber

Alfa Laval knows that no plant operator wants to gamble with operating security. One vital link in any plate heat exchanger is the sealing system and this sealing system is dependent on more than just a piece of rubber.

The correct sealing technology requires a service supplier with extensive knowledge of gasket materials, glue, gasket forms, gasket groove geometries, and plate pack alignment.

In contrast to some suppliers, Alfa Laval knows that the materials in a gasket have lower performance limits in the heat exchanger than in the laboratory. That's why Alfa Laval develops and manufactures gaskets together with major rubber suppliers and then tests them in Alfa Laval's laboratory and in operation in industry in co-operation with customers.

The perfect bond

A good glue is crucial to a perfect bond. Alfa Laval use a specially developed two-component oven-cured epoxy glue that provides a stronger bond than any other gasket glue. This can extend the sealing lifetime to up to ten times that of ordinary gasket glues if the unit is subject to frequent opening.

Alfa Laval's FullService – any brand, anytime, anywhere

Unlike many plate heat exchanger manufacturers, Alfa Laval has extended reconditioning service to include service on all plate heat exchangers, regardless of manufacturer.

This single-source service includes providing replacement gaskets manufactured in accordance with strict high-quality standards in Alfa Laval's ISO 9002-certified facility. Competitor plates are submitted to the same rigorous standards and procedures and given the same full one-year guarantee on workmanship and materials as Alfa Laval's own plates.

...of any brand of plate

1. Inspection upon arrival

As soon as the plate pack arrives at a service centre, visual inspection of the gasket groove, contact points and hangers determines whether plates merit reconditioning.



2. Gasket removal

The plates are immersed in a liquid nitrogen bath at -196°C (-321°F). After one minute at this temperature, the gaskets become brittle. They shrink and separate cleanly from the plate.



3. Rinsing plates

The deposits to be removed from the plate vary in composition. They can be removed by immersion in a series of chemical baths or with other innovative and effective cleaning methods.

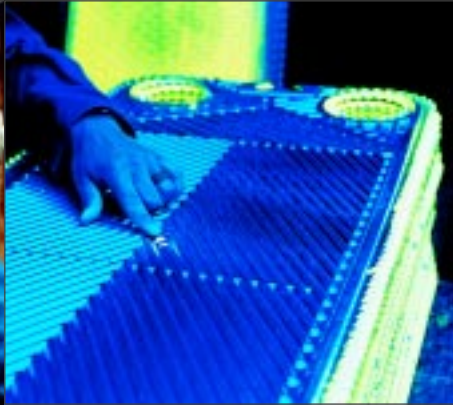


6. Oven curing

For maximum adhesion, the plates are cured in an oven at a high temperature.



ate heat exchangers



4. Crack detection

Excessively corrosive applications may have caused minute pinholes or cracks that are not visible to the naked eye. To identify such flaws, one side of the plate is sprayed with a dye penetrant. The plate is then inspected under ultraviolet light or with a developer to reveal the tiniest defect in the plate surface.



5. Regasketing

Date-stamped gaskets are selected from stock and then bonded to plates with a strong oven-cured two-part epoxy resin cement, designed specifically for strength. For optimal results, gluing demands experience and competence.



7. Pressure testing

Pressure testing at the service centre is one method to determine that the sealing function has been restored.

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an appropriate tempera-



In case time is short...

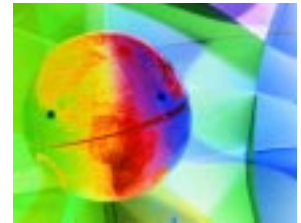
In case continuous operation is required, Alfa Laval can offer a Strategic Plate Pack, a spare set of plates for stand-by use during emergency reconditioning or repair. Alfa Laval can also provide exchange packs for some types of Alfa Laval heat exchangers. These fully-guaranteed packs can be delivered within a matter of hours.

The only global yet local supplier

Alfa Laval never leaves the customer alone once the heat exchanger is delivered. Alfa Laval is unique in being the only plate heat exchanger service supplier who can offer local service combined with access to a network of global service experience and trouble-shooting know-how.

Alfa Laval operates 30 plate heat exchanger service centres that can be contacted 24 hours a day, 365 days a year. These service centres recondition more than 500,000 plates annually.

Each centre has a staff of experienced personnel with a direct link to a stock of plates, gaskets and other plate heat exchanger components. Service engineers in an additional 50 countries are available to offer assistance to their local customers. All service representatives have access to comprehensive computer systems that compile Alfa Laval's 60 years of experience with plate heat exchangers. Should the local service centre be short on capacity or specialist experience, they have only to ask for help from the regional service centre network.



The Alfa Laval stamp of approval

If it has the Alfa Laval stamp of approval, a reconditioned plate heat exchanger measures up to Alfa Laval's high standards for its original equipment. In short, it means that Alfa Laval has a one-year good-as-new guarantee for workmanship and materials.

If you are a manufacturer of quality products, do you expect less from your suppliers?



FullService

Any brand, anytime, anywhere.

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