

## Everything you need, everywhere you need it

Alfa Laval is a world-leading supplier of installation material for a wide range of sanitary applications within the food, dairy, beverage, pharma and personal care industries. Our products are developed not only to meet your exacting demands for safety, reliability, efficiency and hygiene, but also to ensure the careful handling of your products.

One of the features that distinguishes us from our competitors is our wide range of application. We can supply components for all stages of your process – besides installation material, our sanitary range includes pumps, valves, tank equipment and heat exchangers.

For more detailed technical information and specifications of our products, please refer to the relevant product sheet provided by your local Alfa Laval supplier, or to our website,

## Unions, clamp fittings and flanges

In order to sustain high quality, it is important that the products are uniform. Therefore tolerances and finishes are carefully controlled. Alfa Laval follows developments in the area of standards.

To enable you to select the best quality rubber seal for your process, Alfa Laval is able to offer various options in addition to its standard seal, including:

- NBR, Nitrile Rubber
- FPM, Fluorine Rubber
- EPDM, Ethylene Propylene
- Nitrile (Buna-N)
- White Nitrile (White Buna-N)
- Viton ®
- PTFE
- Silicone (Q)

Flanges and clamp fittings are suitable for flexible and easy maintenance. Flanges and clamp fittings with finger nuts are especially suited for processes where the load on seals is extra high, where easy control and replacement of seals is necessary and where optimal cleaning is required.



Unions are available in a number of standards, including SMS, ISO, BS, IDF, DS, DIN and clamps.

tees and reducers are available in diameters from 1" to 4" and from DN10 to DN150.



## Bends, tees and reducers

Alfa Laval constantly focuses on producing installation material with long durability, problem-free welding and assembly, and highest possible strength. Key criteria in the manufacturing process include tight tolerances, a variety of finishes and uniform wall thickness.

### Welding

Alfa Laval is aware of the constantly increasing demands for the quality of welding. In accordance with these demands, all our weld end fittings meet the highest of standards.

The reducers have welding ends and are available for all tube combinations, ensuring you the right diameter and wall thickness for your process.

### Tolerances

Alfa Laval ensures that all the angles are exact and that all the tube, bend and tee connections are uniform. It is very important that you do not have to compensate for any welding irregularities.

### Finishes

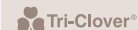
In order to ensure that you are able to select a finish that exactly matches your process, Alfa Laval offers a wide range of finishes, including matt, raw, bright and polished.

## The right part for your application

Alfa Laval provides many different standards of tubes and fittings. This means you can always find the part most suitable for your specific application, with exactly the process quality you need.

### Sanitary range tubes and fittings

This product range provides a wide range of tubes and fittings with internal surface finishes that have a Roughness average (Ra) of <math><0.8-1.6 \mu\text{m}</math>. Tubes and fittings in the Sanitary range comply with DIN 11850, ISO 2037, BS 4825, JIS G 3447 and ASME dimension standards.



### Tri-Clover BioPharm range tubes and fittings

The Tri-Clover BioPharm product range includes a comprehensive selection of tubes and fittings with internal surface finishes with a Roughness average (Ra) of <math><0.4-0.8 \mu\text{m}</math>, either electropolished or mechanically polished.

Tubes and fittings in this range comply with DIN 11850, ISO 1127 and ASME BPE dimension standards.

## Tubing

Alfa Laval offers a variety of tubes for the sanitary application process in all worldwide standards.

A flexible pipe support system is also included in the Alfa Laval product program. The system can be used for floor, wall or ceiling installations, by means of a combination of connection pieces and anchor plates.

### Tri-Clover BioPharm tubes

The Alfa Laval tubes are the perfect choice for ultra-clean processes within the demanding pharmaceutical, biotech and light chemical industries.

The tubes are produced in compliance with the DIN 11866, ASME BPE, ISO 2037 and BS 4825, with extremely high demands on materials, hygiene and manufacturing accuracy.



Whatever your sanitary application, Alfa Laval is able to supply the right tube.

## Tri-Clover BioPharm packages

Alfa Laval is your complete source for specialized tubing and fittings required in biotech and pharmaceutical process applications. The quality and surface finish of the Tri-Clover BioPharm products match the exact requirements of the industry. So regardless of your installation material needs, we are able to supply you with the right product – making sure that your process quality is never compromised.



Tri-Clover BioPharm.

### Tri-Clover BioPharm tubes and fittings

Tubes and fittings in the BioPharm range are manufactured in accordance with extra-strict quality assurance procedures.

All cold-formed BioPharm tubular products feature consistent wall thicknesses as a result of the use of fabrication-grade tubing. Once cold forming has been completed, these tubular products are resized to ensure that their ovality always falls within the prescribed tolerances.

A machined square-cut method is used to provide properly finished end facings, ensuring the most accurate, consistent orbital welds. All fittings are inspected visually, while ovality and squareness tolerances are inspected with calibrated equipment. All surface finishes are inspected with a calibrated profilometer to measure the Roughness average (Ra).



The quality and surface finish of the Tri-Clover BioPharm products are determined to match the exact requirements of the industry.