

Stainless Steel Products for the Brewing Industry

Precise Temperature Control And **Zero Corrosion**

In brewing, it is all about hygiene and temperature control. Danfoss offers a wide range of stainless steel components for the brewing industry, including the new SVL SS Flexline™ series of modular line components.

All

the valves you need
for your refrigeration
plant - including
stainless steel
products for internal
placement.



The stainless steel products by Danfoss

Danfoss stainless steel products for industrial refrigeration are designed for highly demanding production environments, where corrosion is a risk due to harsh environments, such as process industries and marine

applications. A broad temperature range and high pressure approvals make them suitable for refrigerants like CO₂.

All products are designed for industrial

refrigeration and are approved for the most commonly used refrigerants within industrial refrigeration such as ammonia, CO₂, HCFC and HFC. Flammable hydrocarbons can be used with some of the products.

The new SVL SS Flexline™ line component range – one platform and all in stainless steel

Modularity and flexibility

The SVL SS Flexline™ line component range in stainless steel is based on the idea of just one housing (angle- or straightway) for multiple functions: Stop, stop/check, check, regulating and filter, all designed to fit into the same housing.

The benefits of choosing SVL SS Flexline™ components are many:

- All functions fit the same standard housing
- High pressure approval
- Color coding making identification of the valve type easier - also once it is fitted in the system
- Shared spare parts allowing for reduced stocking cost and fast and easy service

- Fit and forget thanks to the robust design that gives a smooth and trouble free operation
- Extremely tight and leakage proof design

The new REG-S SS stainless steel regulating valve features a new cone and

insert design and an extended lift giving improved precision and regulating performance. The new SCA-X SS and CHV-X SS stainless steel stop/check and check valves feature a new, optimized piston design and a new fully-assembled insert making installation and servicing easier and quicker.



OFV-SS Stainless steel overflow valves



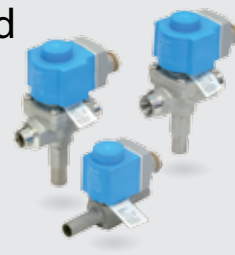
The stainless steel overflow valves from Danfoss (OFV-SS) offer three functions in one valve: Overflow valve, check valve and stop valve. They have a maximum operating pressure of 52 bar and a wide temperature range. The adjustable opening pressure can be adjusted in the range of 2 to 8 bar. The valve can be closed manually, e.g. during plant service. It is fitted with backseating which allows the spindle seal to be replaced with the valve still under pressure.

SNV-SS Stainless steel needle valves



The stainless steel needle valves (SNV-SS) are compact and light service valves. They are especially suited for heavy-duty industrial applications due to their sturdy design and high level of operating safety. Their design provide a high flow characteristic. The SNV-SS valves have a maximum operating pressure of 52 bar in the pressure range of -60 °C to +150 °C.

EVRS and EVRST Stainless steel solenoid valves



EVRS and EVRST stainless steel solenoid valves are based on three different principles: Direct, servo or forced servo operation. The forced servo operated valves, designed for keeping open at a pressure drop of 0 bar, can be used in liquid, suction, hot gas and oil return lines. EVRS and EVRST come equipped with a spindle for manual opening and have a working pressure of 50 bar and can handle media temperatures from -40 °C up to +105 °C (max temperature is dependent on coil).



Stainless steel: Longer life span and lower maintenance costs

Wherever hygiene really matters and corrosion is a real risk due to the harshness of the environment, stainless steel is your ideal choice for refrigeration systems.

Typical application areas for stainless steel refrigeration systems are the brewing industry, food production, marine cooling, dairy production, meat processing and many other types of

process industry applications. Danfoss has developed and produced stainless steel valves for these industries for several years and has a wide specialized application knowledge.

With the introduction of the SVL SS Flexline™ line components in stainless steel, Danfoss now offers a wide range of stainless steel valves for internal placement. With the high pressure

approvals for the products the stainless steel valve range now covers all modern refrigeration systems including CO₂.

All products come with a wide range of approvals, of course.

Your benefit: Longer life span of the system and its components and significantly reduced maintenance costs.

The latest in refrigeration technology

With innovation as our main focus at Danfoss, you can rely on us to deliver the latest in refrigeration technology. Backed by more than 80 years of experience in the global refrigeration business, we develop and

supply the right products for advanced, environmentally friendly cooling installations. With our wide range of components for industrial refrigeration Danfoss can deliver all valves for a project reducing complexity and

optimizing project deliveries. Our know-how is always available to you locally – just contact your local Danfoss representative for more information.

Precise temperature control from mash to bottle: Stainless steel products for the brewing industry

In brewing, control is the key word all the way from mash to bottled product. It is absolutely crucial to be able to control temperatures with a very high degree of accuracy in all the

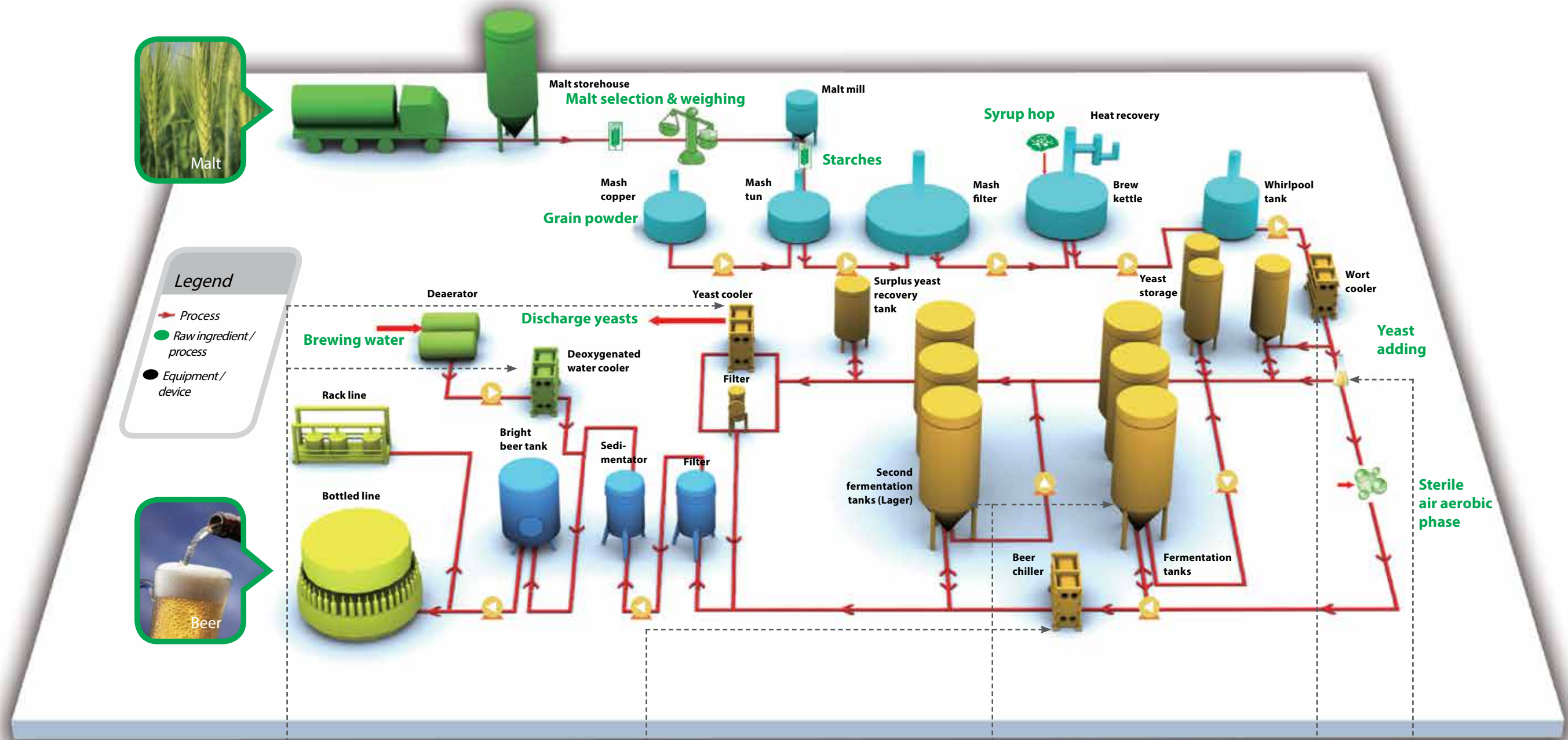
key processes in the brewery: Wort processing, yeast propagation, fermentation and final cooling. Danfoss has the experience and the know-how to act as a competent and

trustworthy partner for the global brewing industry – and we have all the refrigeration solutions to provide our customers with accurate temperature control and consistent production flow.

Our stainless steel products deliver reliable, precise and efficient refrigeration for all breweries, regardless of production scale and geographical location. The valves and filters can be

used with naturally occurring refrigerants such as CO₂ and ammonia for a more environmentally friendly production line. This diagram shows some of the critical production phases

in which Danfoss solutions help breweries obtain consistently high quality through meticulous temperature control.



Deoxygenated water preparation

Deoxygenated water is used as fermentation liquid and is also vital in such processes as filtration, attenuation, clarification and tank flushing. Deoxygenated water must remain at the same temperature as the medium it is used to cool, for which very precise temperature control is required.

Cooling way: Ammonia, CO₂ or ethanol brine

Beer chilling

Uniform product quality is dependent on maturation in a strictly controlled temperature regimen. The fermented beer is cooled quickly to a standardised temperature level and left to mature in the bottle or cask.

Cooling way: Direct ammonia, CO₂ refrigeration or alcohol/water

Fermentation

Flavor and alcohol content both rely on precise fermentation. To ensure a product of consistent quality and alcoholic content, fermentation temperatures need to be very accurately controlled.

Cooling way: Direct ammonia, CO₂ refrigeration or alcohol/water

Wort cooling

Beer quality relies on accurate yeast propagation in the wort. This in turn relies on highly precise temperature control to ensure that the boiling wort is cooled as quickly as possible.

Cooling way: Ice water, ammonia or CO₂ for direct cooling

Yeast propagation

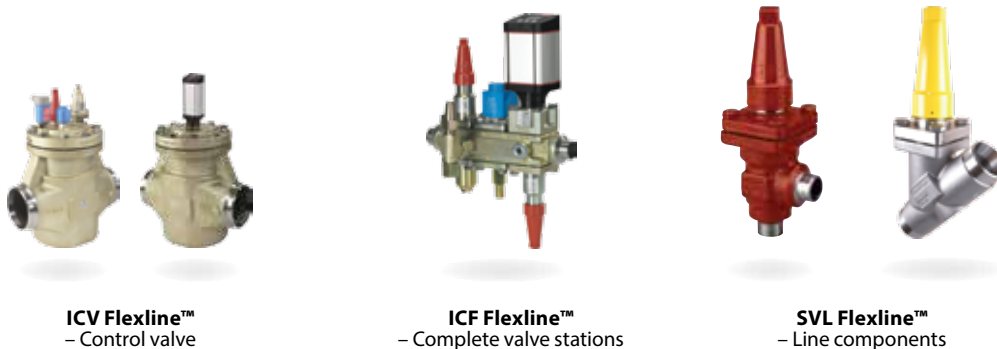
Yeast propagation means providing sufficient high-quality barm at the right point in the production process. Temperature control at this stage in the beer production is vital.

Cooling way: Ammonia or CO₂ cooling

Danfoss Flexline™

Simple. Efficient. Flexible.

Designed to offer clever simplicity, timesaving efficiency and advanced flexibility the Flexline™ series includes three popular product categories:



ICV Flexline™
– Control valve

ICF Flexline™
– Complete valve stations

SVL Flexline™
– Line components

All products are based on a modular design with no functionality in the house. This set-up reduces complexity right from the design phase to the installation, commissioning and service. All key to lower total life cycle costs – and major savings.

Go to www.danfoss.com/flexline for more information on the Flexline™ platform.

Global knowhow

Local support

Backed by more than 80 years of experience producing valves and controllers for refrigeration applications Danfoss is a solid partner to turn to when you are looking for quality components.

Our global knowhow combined with local support offers you the best possible products and service.