

# BLUE STEAM

Your regional newsletter

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your F&B manufacturing  
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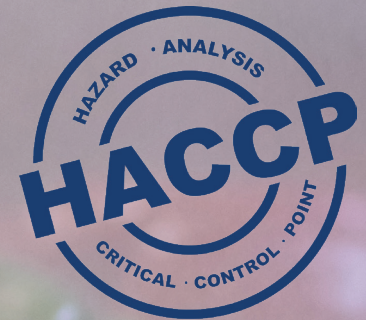
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Use clean steam  
Clean the risks



# Is steam in direct contact with your Food & Beverage manufacturing process?

Spirax Sarco can help your organisation avoid costly contamination



## Steam - Have you considered the contamination risk?

If you're using steam in direct contact with you Food & Beverage process have you considered the risk of exposing your finished product to potentially harmful and costly contamination?

Whist steam is the most efficient method of transferring heat to your process, we must ensure it is free from the following contaminants:

- Particulates contamination - rust, scale and other pipe debris
- Chemicals contamination - from boiler chemicals or cross contamination from other sources, such as Cleaning in Place (CIP) chemicals.

Where steam is in direct contact with food or drink process, manufacturers should consider it as an ingredient and be assessing and managing any potential risks of steam contamination occurring.

## The power of a Steam Quality Audit

Our Steam Quality Audit use HACCP (Hazard Analysis Critical Control Points) principles to minimise the risk of contamination to your process..

A typical audit can also help cut energy costs, and improve productivity, product quality and maintenance workload by removing wet or dirty steam.

## A Typical Spirax Sarco Steam Quality Audit will provide:

A comprehensive review of your complete steam system from a contamination risk.	✓
>40 Audit point system checks of your entire plant. This would include: <ul style="list-style-type: none"> <li>• Boilerhouse</li> <li>• Steam distribution</li> <li>• Process applications</li> <li>• Condensate recovery</li> </ul>	✓
Boiler chemical compliance	✓
Cross contamination risks from Cleaning in Place (CIP)	✓
Best practice steam system design	✓
Steam tap management	✓
A full report detailing a rprioritised list of potential contamination risks	
Corrective actions to improvme steam quality	

*\*This service is not provided in every country*



**Contact us today and discover how a Steam Quality Audit could help your business.**

Contact your local engineer or use spirax sarco website  
[www.spiraxsarco.com](http://www.spiraxsarco.com)

Your Steam Quality Audit will be tailored to your requirements and business size. The table above indicates just of the few of areas your audit could cover.



Pure  
Steam



Clean  
Steam

Steam  
Quality

## Clean Steam - The best choice for the Food & Beverage Industry

There are three grades of steam commonly used in the food and drink industry today; plant steam, filtered steam (culinary) and clean steam.

While plant steam meets the demand for heat transfer applications in many industries, it will contain both particulate and chemical contamination and so it is not recommended for direct contact with food and beverage applications. Filtered steam will take out most of the articulates, but will not remove any potential chemical contamination within the steam or water droplets. Clean steam however will eliminate the potential risk of both particulate and chemical contamination, by using high quality feedwater with no boiler chemical additives.

Most suitable for use in direct contact with food or beverage products

### Assess your Steam Quality Risks Today!

Contact your local Spirax sarco representative today to discuss how we can help you minimise any potential contamination risks to your steam system through our Steam Quality Audit:

1. Identify hazards - a full risk analysis of your steam system
2. Implement corrective measures that will minimise the risk of contamination
3. Adopt best practice and improve product quality

Filtered  
Steam

Plant  
Steam

### Typical applications for clean steam

- UHT Milk processing
- Bread humidification
- Baby food production
- Sauce manufacturing
- Vegetable flash peeling
- Meat cooking
- Soup manufacturing
- Sterilise in Place (SIP)
- Noodle manufacturing
- Aseptic filling

Contact us today and discover how improving your steam quality could help your business.

Contact your local sales engineer or use spirax sarco website\* [www.spiraxsarco.com](http://www.spiraxsarco.com)

-This service is not provided in every country





## IS STEAM IN DIRECT CONTACT WITH MY PROCESS?



RAW MATERIALS



PROCESS



PACKAGING

blanch **cook** seal peel cure  
**sterilise** **prove** **extrude** humidify  
 defrost pasteurise sterile package

## WHICH TYPE OF STEAM IS RIGHT FOR MY PROCESS?

**PLANT STEAM**

**FILTERED STEAM**

**CLEAN STEAM**

Contamination hazard



Suitable when not directly in contact with food and drink process and products.



Reduce contamination



Improve steam system design and test regularly to reduce contamination risk.



Eliminate contamination 100%



Generate contaminant free steam and completely remove contamination risk.

To learn more, visit [spiraxsarco.com](http://spiraxsarco.com)



# World News



Sweden

**Industry:** Food & beverage

**Place:** Sweden

**Objective:** To avoid contamination risks

**Solution:** Installation of a Clean Steam Generator

**Results :** Customer is knowing that now his product will be high quality thanks to a high steam quality

## Swedish dairy ensures a high level of product quality by installing a Spirax Sarco clean steam generator

### The Issue:

Whilst steam is still the most efficient and clean method of applying heat to many food and beverage process applications, care must be taken to ensure that all steam systems are correctly designed, installed and maintained. This guarantees high quality steam is delivered to the point of use.

When plant steam is used in direct contact with the process, for example, UHT milk, contamination can occur from a number of sources; e.g. boiler chemicals, particulates in the pipeline and cross contamination from other applications such as clean-in-place (CIP). Therefore, correct measures must be adopted to measure the quality of the steam entering the process. The benefit of using steam in this way is that the product is quickly brought up to sterilisation temperature, ensuring that product quality and taste is maintained to the highest standard. In addition to being used in direct contact with the product, steam is also extensively used to sterilise areas such as process lines, filling heads and clean air filters. It is essential that any steam supplied to process applications should be of the correct standard and not compromise the quality of the product in any way. Our customer was aware of all these issues and wanted to assess any potential risk of contamination in their process.

### The Solution:

For the particular process application in question, steam was being directly injected into the product itself and so the customer wanted to guarantee the quality of steam entering their process. Therefore, we worked with the customer to identify what the potential risks were and advised them how these risks could be reduced.

We identified that by supplying the process with steam generated by an independent clean steam generator and using a higher quality water supply, the customer will be able to eliminate the potential risk of contamination from boiler chemicals, particulates and CIP applications. As a result, we were engaged to design, specify, supply and commission a Spirax Sarco clean steam generator for their new process line.

### The result:

By installing the clean steam generator, the customer is now able to continuously run their process safe in the knowledge that product quality will not be compromised as a result of poor quality steam.





# What does a clean steam process look like ?

## The key to food manufacturers eliminating these risks is

a more widespread use of clean steam. Whereas some operators in the food and drink industry still view the use of clean steam as discretionary due to the lack of concrete regulatory requirements, it can be crucial in helping manufacturers to demonstrate that they are applying an effective food safety regime according to HACCP principles. In contrast to both plant and filtered steam grades, clean steam is already being used as standard in a range of quality critical processes in other industries, such as pharmaceuticals and healthcare, making it a go-to option for food and beverage manufacturers.

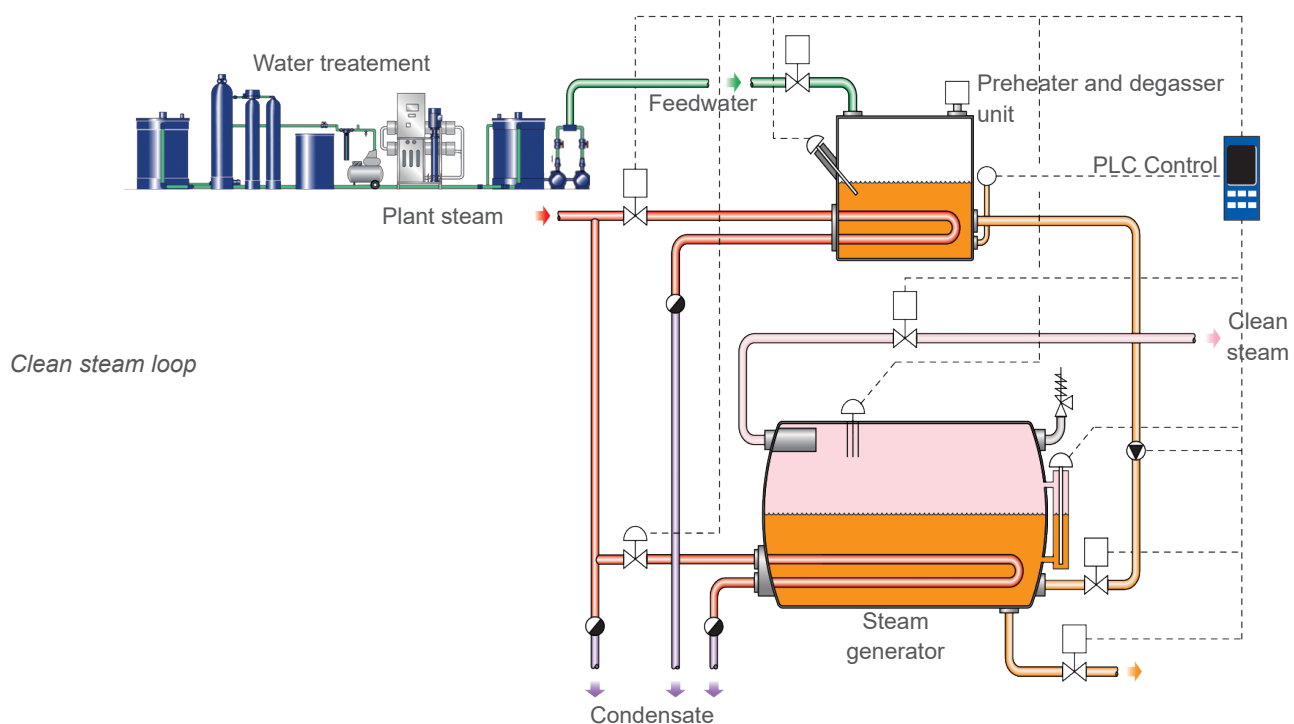
## Generating and using clean steam within a process means controlling feedwater quality at source.

By doing so, there is no longer a reliance on filtered steam, and this ultimately eliminates the risk of the final product being contaminated by the steam used in the manufacturing process. Since filtered steam can often be in direct contact with food, it must be dry and free of boiler water treatment chemicals.

But how do you go about introducing a clean steam process? What technology is needed, and how much of an overhaul does this mean for your plant?

Rather than relying on a filtration process to extract particulates, the production of clean steam utilises a secondary steam generator with the ability to control chemical-free feedwater quality. The design of the steam distribution network, material selection and installation practices are all critical for minimising steam degradation, thus ensuring acceptable purity and quality at the point of use. As a result, clean steam requires the use of stainless steel pipework and components that eliminate the potential for corrosion of steam traps, valves, and pipeline equipment made from traditional carbon steel materials.

With the introduction of appropriate controls, companies need to decide whether the risk in relation to direct steam is acceptable, or whether they need to mitigate against it. The absence of more appropriate control at the plant leaves the final product at risk of unexpected boiler-related contaminants. If a company determines that this is not acceptable, dedicated clean steam generation becomes more than just the desirable option – **it becomes the only option.**





# Technical zoom

## m-CSG - Mini Clean Steam Generator

### Is the m-CSG right for you ?

Clean steam is providing the answer for many applications in the food & beverage industries where standards are increasingly demanding and public concerns on the safety of food consumption has made steam quality of paramount importance. The m-CSG can help meet those standards and ensure you deal with your customers concerns in a safe manner.

It is a compact, ready to install clean steam generator that is capable of generating up to 300 kg/h of clean steam.

The steam generator and all parts in contact with the clean steam and feedwater are made of 316L stainless steel. This eliminates the risk of contamination within the process, providing you with peace of mind and high quality product. Combining modern technology with package design expertise, we have created a mini clean steam generator capable of producing clean steam to the highest quality standards.



### Features

- EC 1935 certified design
- All parts in contact with the cleansteam and the feedwater are 316L stainless steel
- A range of service agreements available to suit your requirements
- Pre-assembled unit
- High quality, low maintenance components
- Precisely matched automatic controls give constant clean steam production
- Compact Modular design

### Benefits

- Supplying high quality clean steam to your processes
- Prevents risk of corrosion or contamination of clean steam supply
- Safety and efficiency assured – you can concentrate on your core business while we do the rest
- The unit is ready to install reducing downtime
- Clean steam supplied to your process at the correct pressure and flowrate demand fluctuates
- Fits through a plantroom door saving floor space and maximizing output from minimum footprint

### Applications

#### Sterilise In Place (SIP)

Steam is often used to sterilise filling heads and aseptic lines

#### Aseptic filling

Ensure product shelf life is not affected by guaranteeing the sterility of the product during the packaging process

#### Direct injection into the product

Large quantities of steam can be injected directly into the product for processes such as cooking. Therefore, steam must be closely controlled to avoid contamination

#### Humidification

This is where the steam is added to the air within the process. In food and beverage processes, the steam quality is a vital consideration to ensure product quality





**Use Clean Steam  
Clean the risks**



**YouTube**

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