

BLUE STEAM

Your regional
news magazine

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Steam as an ingredient

For decades, food and drink manufacturers in the world have spent countless sums improving the quality of their products and experimenting with new ingredients. Yet there is one vital ingredient that repeatedly flies under the radar of even the biggest FMCG businesses. The quality and purity of steam has been fundamental to the healthcare and pharmaceutical industries for many years, yet food and drink – two other products designed for mass human consumption – are often manufactured, treated, or processed with little or no analysis of the type of steam used. So why is the quality of steam so important?

As a substance often injected into food, steam is one of these potential hazards. We all know that steam is sterile, but not quite as many realise that possible contamination, both upstream and downstream of the pipework, runs the risk of affecting the product, and ultimately, proving a hazard to human consumption. The confusion surrounding the difference between filtered and clean steam could be proving very costly to many businesses – which is exactly where this white paper comes into play. By understanding the pitfalls of not having a clean steam process in place, what a clean steam process should look like, and the advantages it can deliver, food and beverage companies should soon be making sure clean steam sits at the very top of any list of ingredients.

1. Quality control

The term clean may be synonymous with sterilisation, but the benefits of clean steam extend much further. Clean steam is often used in applications such as sterilisation, not only to ensure there are no contaminants, but also to ensure the quality control of critical attributes such as dryness, superheat and the production of non-condensable gases, all of which could adversely affect the process and equipment.

2. Conformance to HACCP approach

Those concerned with food safety can rest assured that a clean steam system complies with regulatory requirements and conforms to most commercial requirements.

3. Product consistency

With no risk of contaminants, such as boiler carry-over or particulate matter, food technologists can be assured of their ability to deliver consistent quality of the final product, time after time.

4. Customer and consumer confidence

Clean steam which is consistently free of boiler water treatment chemical taints, offers much better assurance for the

consumer, creating a real benefit to major retailers who are becoming increasingly aware of the effects filtered steam can have on the colour and taste of their products. This in turn creates customer confidence and protection of the brand.

5. Reduced waste and downtime

Many industrial applications now view clean steam as their first choice when it comes to transferring large quantities of energy over a long distance as it is an economical source of energy. Clean steam is also easy and economical to produce, as water is one of the most accessible natural resources. What's more, the reliance on chemicals previously used to clean the water is reduced, helping to minimise waste which results in a positive impact on overall costs.

Eight advantages of a clean steam process

Dear customers,

Spirax Sarco is happy to present to you our new regional magazine, Blue Steam, which has been produced to share information with our valued customers in the Middle East, Africa, and Western European countries. Blue Steam aims to share some useful information about steam systems, our latest Spirax Sarco technologies, as well as customer's case studies. For the first time learn about Spirax Sarco's capabilities abroad and the new energy saving opportunities we can help you with. Finally, test your knowledge with our quiz and find out how much you know about steam.

We hope you find Blue Steam to be of interest.

Andy Babbage
Regional Manager
Middle East Africa &
Western Europe



6. Greater diversity

Clean steam is applied in almost all applications in industry for heating purposes, for cooking or preserving foods, for vulcanising, for heating, or for heating water. These are just a few examples of the diverse scope of applications in which clean steam is applied.

7. Reduced risk

Good food hygiene reduces the risk of food contamination among consumers. While this should be taken as a given, major retailers are increasingly looking for proof that every possible measure has been put in place to ensure this remains the case.

8. Flawless reputation

A product recall is a blot on the copybook of any manufacturer - especially those producing products meant for human consumption. Implementing a carefully managed clean steam process and food safety regime will help to ensure the brand's reputation and consumer trust remains intact. By introducing clean steam, food and drink manufacturers are able to ensure a consistent steam process; one which maintains the best possible quality every step of the way.

5 WAYS TO BOOST BOILER HOUSE EFFICIENCY

The boiler house is the driving force at the heart of your steam system. It delivers the right amount of energy to your process, exactly when needed. Spirax Sarco looks at key technologies to improve steam generation efficiency.

1. Boiler house audit



Solution to save energy and to reduce water treatment products consumption



Better safety for your employees

SAFETY



Get a better steam quality

Spirax Sarco offers:
A dedicated team, composed with technicians and engineers, helps our customers to produce steam which complies with the required quality and safety criterias, managing energy cost and reducing bad emissions.

2. Automatic TDS controls

Ensures a clean, dry **STEAM**

supply to eliminate excessive steam trap discharge and energy loss



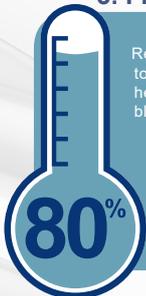
Reduces water and treatment chemical costs



Minimises the loss of energy and treated water from the blowdown process

Spirax Sarco offers:
Blowdown control systems – match almost any boiler's needs and link to energy and building management systems. Comes with choice of controllers, conductivity probes and valves.

3. Flash steam recovery



Recover up to 80% of the heat from blowdown



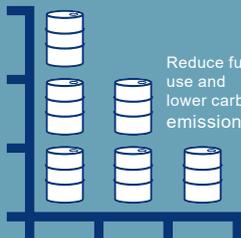
Eliminates unsightly plumes of steam from plant roof tops, and reduces chemical and make-up water costs

Up to 26% energy savings by recovering flash steam from returned condensate



Spirax Sarco offers:
Flash Recovery Energy Management Equipment (FREME) – recovers energy from flash steam in condensate and feeds it in to the high pressure side of the boiler, returning more energy to the boiler from the steam system.

4. Exhaust gas heat recovery



Reduce fuel use and lower carbon emissions



Recycle lost energy, increasing boiler efficiency and reducing fuel costs

Easy maintenance and reliable operation cut operational costs

Spirax Sarco offers:
Boiler economisers – easy to clean and maintain, plus smaller and lighter than traditional systems so easily scalable to suit changing needs.

5. Steam system conditioning



Reduces chemicals use, especially O₂ scavenging treatments, cutting costs and environmental impact



Reduces the risk of corrosion in the boiler and steam system to avoid high maintenance costs



Increases the reliability of the steam system for higher productivity, and saves energy through less frequent boiler blowdown and less flash steam loss

Spirax Sarco offers:
Steam System Conditioning service – we also offer feedtanks, vent heads, pressurised deaerators and ancillary items to ensure your feed water system performs at its best.

News World

Egypt

Build your own expertise

Well trained team is crucial to achieve the most efficient and safest steam system performance. At Spirax Sarco Egypt we can provide training for personnel in the design, installation, operation, optimisation and maintenance of steam systems, whether they need to learn new skills or polish up existing abilities. Many of our courses are accredited and result in recognised qualifications. All are delivered by highly knowledgeable trainers with years of practical steam system experience. Training can take place in our own advanced facilities or delivered at your site. You can be confident that you will get the best training available from the world's top experts, matched to your needs and at your convenience.



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Middle East

Ados & Spirax Sarco Middle East, the new approved partnership for Oil and Gas business in Abu Dhabi

Spirax Sarco Middle East participated in ADIPEC 2017 which is now the biggest Oil & Gas exhibition in the world. ADOS provided SXS Middle East space to exhibit on their stand along with their other principles, and won for the "Best stand for business interaction". Spirax Sarco Middle East had many customers visiting the stand and expressed their approval regarding the new partnership with such a well known and established company as ADOS. ADOS have been in the Abu Dhabi Oil industry for over 40 years. It was also announced that ADNOC group, the State owned Oil company, will be spending 109 billion USD over the next five years, this includes expanding capacity of their refinery, already the 4th biggest in the world to become the largest in the world. The new partnership with ADOS positions Spirax Sarco strongly for these future developments.

South Africa

Water scare resources in South Africa

During the process of steam generation water is the key resource required. The crisis, which South Africa is already facing is due to this scarce resource. The rainfall of 500 mm in 65% of the country brought the stress on the industry to an ultimate high in the last 3 years. One would think that there should be a critical focus to limit dumping of condensate closing the steam loop. However, it has taken a disaster area declaration in the Western Cape, escalating water prices by 400% to awaken the industry to start focusing on the water conservation. It is amazing how a resource like water is taken for granted, and only when it starts to influence the bottom line will businesses change their mind set. Spirax Sarco being a solution focused company, can now start to engage the customer more by offering support in saving water in South Africa. Sometimes the macro environment dictates our business and Spirax Sarco's value propositions still continuously brings the positive to the environment, creating sustainability in our society.



Spirax Sarco Solution with condensate recovery solution for improved cost effective production process and sustainability

New Openings

In one year only, 4 subsidiaries opened in Europe and in Africa : Romania, Hungary, Kenya and Maghreb. The company was already present in these countries for many years through Spirax Sarco representatives. Now, these new operating companies have their own warehouse and facilities which will enable them to be more reactive and offer you a better service quality. These openings take part of the Spirax Sarco strategy, which aims to satisfy customer needs the best way as possible. For more information, please reach the website : <http://www.spiraxsarco.com>

Developing markets

New Warehouse in Almaty, Kazakhstan

In December 2017, in cooperation with our partner General Import, we officially opened the new Spirax Sarco warehouse for equipments and spares in Almaty, Kazakhstan. In this regard customers have been invited to Almaty city in order to introduce the new warehouse. During this event, Evgeny Naumov held a presentation about new products and technologies. The customers also had the opportunity to ask Evgeny Naumov and Neil Crump (Developing markets manager) from Spirax Sarco and Anton LI from General Import their cooperation and the future plans. Spirax Sarco is now able to deliver products and spares to any point of Kazakhstan in a couple of days.

France

Spirax Sarco France celebrates its 80th birthday

On the 12th May 2017, Spirax Sarco Trappes staff met alongside the Seine river in Paris to celebrate Spirax Sarco France 80th birthday with a cruise aboard the famous "Yachts de Paris" liner. During this night, Emeric Martenat, Spirax Sarco France General Manager in the company of different European speakers such as Neil Daws (EMEA General Manager) and Andy Babbage (MEAWA Regional manager) told us about the French subsidiary history and future perspectives.

This event gathered about 200 people and showed the company strength and longevity.

Happy anniversary to the French subsidiary !

Benelux

Services matched to your needs

We're renowned for our high quality products and expert knowledge – however our offering goes way beyond this. You can benefit from a complete and flexible range of services that cover all your needs – we'll carry out a steam trap survey and support you with the project management of a complete new plant, and everything in between, including :

- Steam system audits
- Health & Safety compliance
- Steam quality testing
- Steam trap surveys and management
- Project support
- Installation support
- Commissioning
- Service and maintenance
- Priority response
- Training

On time and on budget project support

Our experienced project team will create tailored solutions that can take a project from design and build to commissioning, support and scheduled maintenance of the completed plant – on time and on budget.



Nurzhan Baitiniev from LLP "Aquaecology" receiving a price after a contest on the Steam thematic from Neil Crump (SXS Developing Markets Manager)



*Left, Neil Daws
EMEA Manager
Right, Emeric Martena
France Manager*



Maintaining peak operating efficiency

Our auditing services can help identify, improve and sustain steam system performance at every point in the steam and condensate loop. Our specialists can improve an existing system and then help maintain peak operating efficiency.

Priority response service

We're the only team in our sector to offer a priority response service with direct access to our fully trained and highly experienced engineers. With this level of service cover, you know that help is never more than a phone call away.

Exhaust Vapour Condenser (EVC)

The Spirax Sarco solution that will help you to recover your wasted heat

“Reduce energy increase efficiency”



The product :

The Spirax Sarco Exhaust Vapour Condenser (EVC) is a reliable, innovative solution for pre-heating make-up or process water by utilising the waste heat that would otherwise be lost to the atmosphere. EVC heat exchangers are compact and designed for the condensing of flash steam, delivering an economic efficient solution for heat transfer in any industry. The unique straight corrugated tube design encourages turbulent flow, resulting in high efficiency heat transfer, improving the efficiency of your steam system, reducing your CO2 and carbon emissions and helping you cut your energy bill.



Application

- The Spirax Sarco Exhaust Vapour Condenser (EVC) recovers valuable energy and water losses from :
- Boiler de-aerators
- Process flash application
- Condensate receivers

Features	Benefits
Environmentally friendly	<ul style="list-style-type: none"> • Reduces steam generation costs, utility bills and CO₂ emissions. • Increases boiler efficiency and reduces boiler blowdown. • Reduces or completely removes flash steam.
Low cost ownership	<ul style="list-style-type: none"> • Significant savings of fuel, water and feedwater chemicals providing a rapid return on investment. • High quality components reducing maintenance costs.



Case Study

The Spirax Sarco EVC solution uses a feed tank flash steam to heat a secondary fluid and allows a customer to recover 63 000€ of energy per year



Industry : Pharmaceutical

Place : France

Objective : Flash steam recovering from a feed tank

Solution : Install a heat exchange solution EVC

Result : Energy recovered is 63 000 €/per year

Payback period : 12 months

The problem :

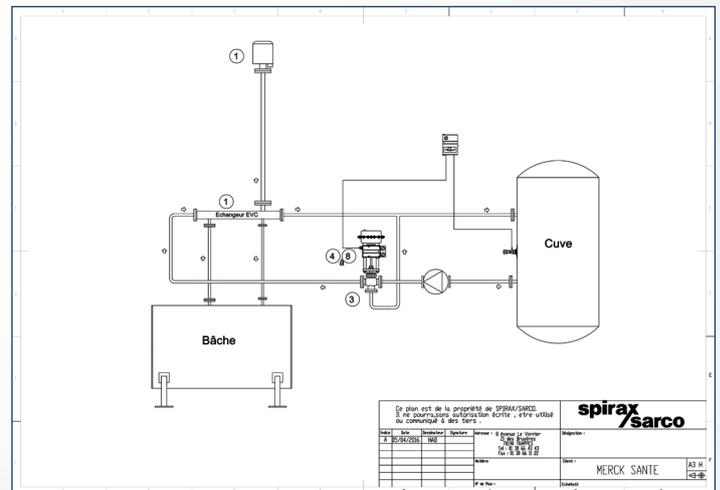
Our customer had a 6 bars steam system on his site, aimed to feed various production processes. The water return process is made through a condensate system. These condensates are stocked in a tank and have a temperature about 98°C to 100°C. 7% of the condensate return throughput is evaporated and released in the atmosphere via an insulated stainless steel 300mm diameter duct located on the tank. The customer desired to use this energy instead of losing it.

Spirax Sarco Solution :

To create a heat exchange solution to heat the secondary fluid thanks to the energy recovered from flash steam. The EVC solution allows to heat and maintain the water temperature around 78°C which is currently heated electrically.

Results :

Energy recovered (steam)	300 kg/h
Secondary fluid heated and maintained at	78°C
Condensate throughput	8 000 kg/h
Energy recovered	187,5 kW
Energy recovered value	63 000 € per year
Payback period	Less than 12 months



For more informations about EVC or one of our products or services, please contact :

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Steam Quiz



Test your knowledge with our quiz and find out how much you know about steam.

1) What does dry steam mean ?

- A - Steam doesn't contain water
- B - Steam doesn't contain solid particle
- C - Steam doesn't contain air

4) The air contained in a steam system :

- A - Increases heat transfer
- B - Decrease heat transfer
- C - Doesn't have any influence

2) Saturated steam temperature decreases when pressure increases :

- A - True
- B - False

5) Where does the flash steam come from ?

- A - Boiler house
- B - Condensates
- C - Accumulator
- D - Vaporisator

3) Superheated steam has a greater enthalpy than saturated steam :

- A - True
- B - False

**Find the answers in
the next issue !**



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