

How Healthy is your Steam System?

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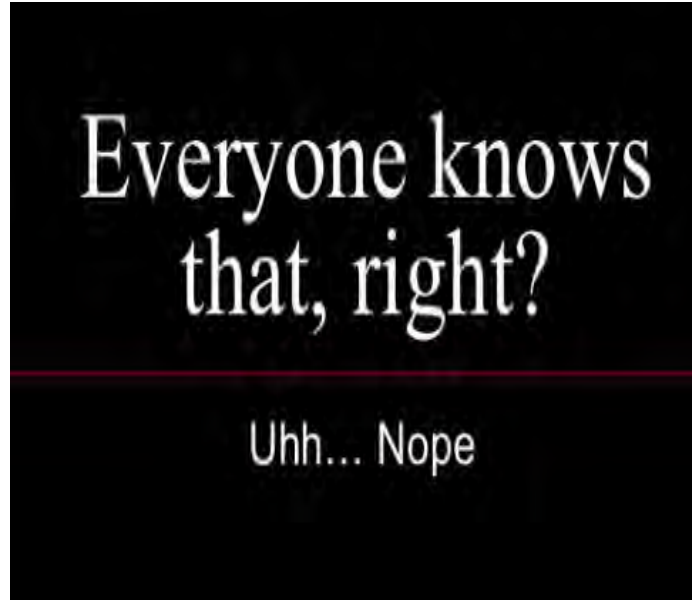
Who is Spirax Sarco?

The Experts in Steam System Solutions

Your knowledge partners on:

- Safety
- Industry Best Practices
- Sustainability
- Energy & Waste Reduction
- Process Productivity Improvements & Expansion
- Steam Maintenance Services – Steam Trap Survey, Maintenance Agreements, etc.
- Education & Training

What customers are telling us....



Customers want total steam solutions



Improve **energy efficiency** and **reduce emissions**



Improve **productivity**, product quality, reduce risk and address safety issues.



Increase **system reliability**, minimize downtime and **reduce total cost of ownership**



Expand and improve systems with total **end-to-end engineering support**

First for Steam Solutions

EXPERTISE | SOLUTIONS | SUSTAINABILITY

In a nutshell...

- We do steam

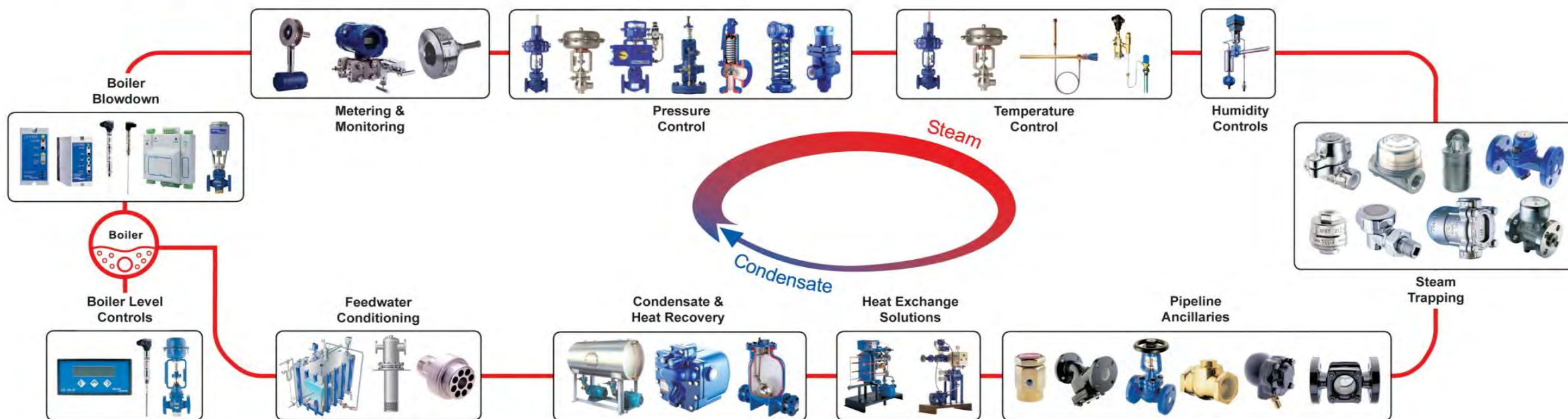


So you can do F&B

THE STEAM SYSTEM.

Spirax Sarco - wide range of steam product solutions

Spirax Sarco has a complete range of products that cover the entire steam and condensate loop which we design, develop, manufacture and make available to customers on a largely ex-stock basis together with comprehensive technical advice, service and support.



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Focus on 3 key issues.....

- Steam Quality – Water, dryness and particulate
- Proper temperature - in heat exchanger CIP
- 3-A “Industry Best Practices & Standards” w/ direct injection
- Piping practices for maintaining pressure and reducing temperature
- Need for insulation
- Training on steam system – safety, efficiency, savings

Which Type of Steam is right for YOU?



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How to get in “shape” ?

The 3 Key Exercises

1. Steam Trap Survey
2. 3-A Culinary Filtered Steam
3. Training



Why bother?

1. Safety – people, product & brand
2. Food quality
3. Energy, Water & Product Savings



Exercise #1 – Steam Trap Survey

How it is done...






- Who does it? Their Credentials? Time? Cost Est? Why should they chose Spirax over others?? How often
- Ultrasonically test and tag all of the traps in a facility
- Identify; application, location, height and ancillaries
- Enter survey results into a steam trap management software system(ie SIMS)
- Monitor results – repeat trap failures and warranty

Exercise #1 – Steam Trap Survey



The Results ...

Steam Trap Survey Report provides:

1. Savings – energy, water & product savings
2. Ways to optimize equipment - start-up times, downtime, throughput
3. How to improve plant safety
4. Addresses steam quantity, quality and removal chemical/particulates
5. Delivers money saving projects

Exercise #2 – Best Practices 3-A

How it is done...

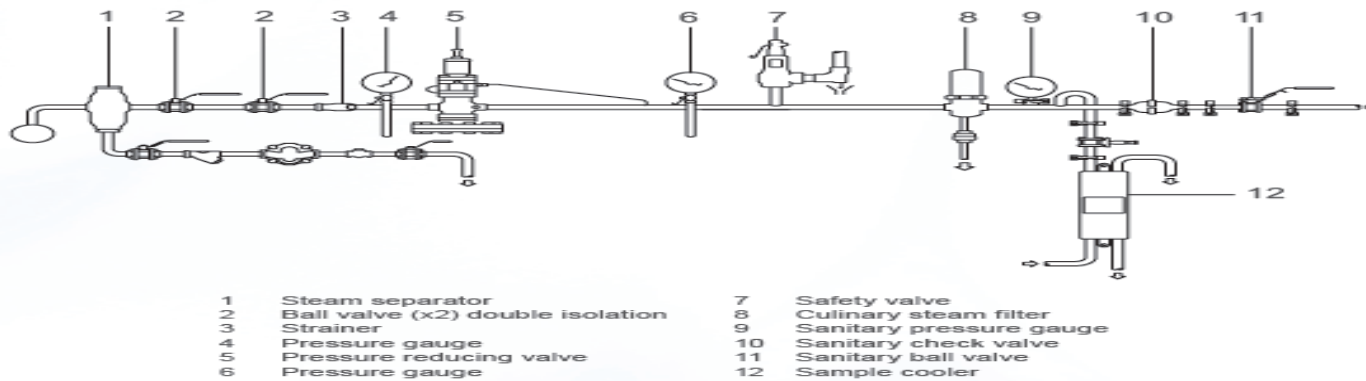


Figure 4: Typical filtered steam station

- History of 3-A Accepted Practices for A Method of Producing Culinary Steam, Number 609-03.
- 3-A Steam System Components

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Exercise #2 Best Practices 3-A

The Results ...

The term 'filtered steam', often referred to as 'culinary' steam, is plant steam that has passed through a fine stainless steel filter, typically 5 microns.

A 5 micron filter element is designed to remove 95% of all particles larger than 2 microns and is acknowledged in the USA as being acceptable for culinary steam.

If a 5 micron filter is used, a pre-filter (typically 100 mesh) should be installed upstream of the culinary steam filter, in order to prevent it from blocking (blinding) too quickly. The diagram below, illustrates the recommended components for a culinary steam installation complete with a sample cooler station.



Exercise #3 – Steam System Training

How it is done...

1. Classroom at Spirax Sarco Training Centers:

- ☐ Chicago, IL
- ☐ Allentown, PA
- ☐ Longmont, CO
- ☐ Houston, TX
- ☐ Columbia, SC

2. Lunch & Learns



Exercise #3 – Steam System Training

The Results ...

Attendees gain knowledge on:

- Safe operating practices – what type of steam is best for YOU?
- Fundamental of steam utilization - steam basics
- Optimizing the steam system – reduce total cost of ownership
- Easy ways to save water and energy
- How to select right steam trap
- Efficient heat transfer – how to increase start-up, reduce down time



Next Steps

- Let's meet!
- Discuss challenges & goals
- Review (3) Exercises
- Select the Exercise that is best for you
- Get to moving!



Get the most out of your steam system with our total steam solutions.

Contact Details

Spirax Sarco

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What Food and Beverage customers asking for

- Build and conduct corporate training programs and events at our four live steam training centers covering boiler operation, chemical treatment and steam fundamentals
- Local facility training on safe steam system practices to identify risky behaviors and eliminate them
- Local double block and depressurization at the inlet and outlet of the trap, allows operators to visually test traps and insures it is safe to maintain
- Improving accessibility to trap by moving to a workable elevation to eliminate the need for scaffolding, lifts and working under process equipment
- Thermal Blankets for energy savings and burn prevention

What does a **healthy** Steam System Look like? By the Numbers.

- Condensate Return- 80%
- Make up water – 20%
- Steam Trap Failure- 5%
- Zero condensate to drain. No strainer valves open.
- Validated values from metering.

Common Plant findings overview

- Uninsulated Pipe
- Water leaks
- Missing Steam Traps
- Poor Piping Practices
- Heat Exchangers- Missing Set point, Flooded, Leaking, not working to design, poor start up.
- Missing Boiler Blow Down recovery
- Flash Recovery

Food & Beverage

Project Savings vs. Simple Payback

SPB Low to High

For the Top 5 Opportunities	
Estimated saving	\$4 500 000 (66% of the total saving)
Average saving per review	\$120 000
Average SPB	1 year

