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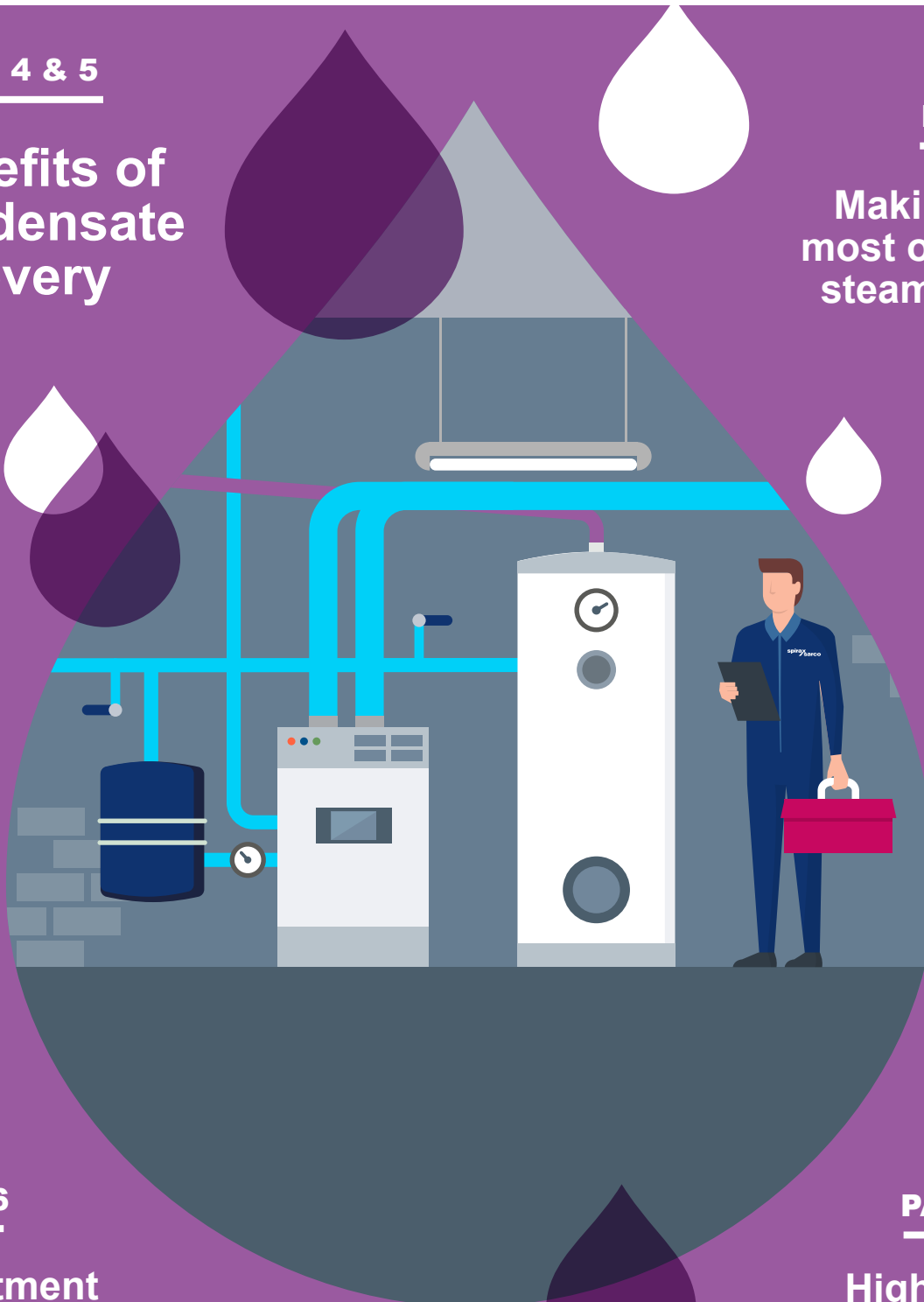
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Process is key: Transform your performance with better control



With the routine wear and tear of traditional control valves often leading to downtime and under performance, it's not surprising that you may be struggling to run your process efficiently.

Accurate temperature and pressure control sits right at the heart of the steam system and can make a real difference to product delivery, process uptime, compliance and efficiency, to name a few. This can only happen, however, if your control valves are able to perform precisely and efficiently, while standing the test of time.

Let's not forget that the cost of unplanned downtime can far outweigh any initial cost savings at the time of purchase. Valves can of course be refurbished but for more critical processes, it is vital that they are as simple as possible to maintain.

As ever process is indeed key, so a modern approach could provide just the answer.

A new approach

Spira-trol™ is a control valve with a difference and can transform just how efficiently you can get your process from A to B. It has been designed as a flexible alternative to many of the application specific control valves on today's market; helping you to manage your process with ease. Providing control for pressure, temperature and flow, Spira-trol will help you to boost your production and reduce potential downtime, ensuring that you can always deliver quality results, fast and effectively.

Here are some of the considerations to take into account if you're looking to get the most from your control valve.

1. Durability

The dream for most plant managers is a 'set and forget' system, and Spira-trol is exactly that; minimal adjustment once in-situ. With only bonnet nuts holding all components in place, the modular system is as easy to fit as it is to maintain, while its cage retained seat means you can maintain the valve without removing it from the pipeline – and with no need for special tools. The result is that winning formula of minimised downtime and maximum productivity.

What's more, if internal components are designed to withstand a wide-range of industrial fluids, your valve is more likely to last longer and perform better. Spira-trol's internals are manufactured from 431 grade stainless steel, suitable for steam that is highly corrosive.

Much simpler and less frequent maintenance significantly reduces the likelihood of outages, leaving you and your plant perfectly capable of hitting those all-important targets.

2. Precision

Why complicate things with a bespoke valve for each process, when a whole host of industrial requirements can be served by a flexible alternative? Matching valves to characteristics of their load can be a difficult challenge for many, but our specialists can help size a valve to suit the characteristics of your individual application, ensuring accuracy is achieved at all times.

Spira-trol is a smart solution which can offer precise feedback on your process. By using accurate information received from the valve, you can determine temperature, flow and countless other statistics to really optimise production.

3. Efficiency

Nowadays we are all conscious of our impact on the environment. That's why pneumatically and electrically actuated valves can offer great benefits, as they can help your plant to consume less energy and produce fewer carbon emissions, while smart positioners can aid accurate control valve positioning. A bellows sealed bonnet will also help to deliver zero losses.

If your control valve is too large for a given duty, it will operate more closely to the seat and therefore experience more wear. Similarly, incorrectly sized valves may also be subject to cavitation and noise in the flow. Trim components are therefore an important factor to keep in mind. They can reduce noise emissions and anti-cavitation because the large gallery area reduces flow, velocity and therefore noise, providing an overall improved working environment.

By taking a more modern approach to transfer steam and other industrial fluids, your whole plant will reap a host of benefits.

Steam system optimisation: Making the most out of your plant equipment



With the 2020 emissions target looming, the need to reduce our energy use has never been greater. Industry undoubtedly has an important part to play and through sufficient expertise, and a few small changes, you can make a big difference to your plant's carbon footprint.

Steam is widely used across a number of industries and applications. Take for example the food and beverage sector, currently labelled as the fourth highest industrial energy user in the UK, in which steam plays a vital role for a variety of processes, including blanching, bottle washing, peeling, canning and cooking. The potential for such industries to make a real difference to our collective carbon performance is therefore huge

Crucially, these improvements don't require a major overhaul as you can make simple changes to equipment you already have in the plant. To get you started we're sharing our top three measures which can significantly reduce your energy consumption and help you achieve impressive savings.

Steam trap facts

Given the current economic climate, you'll be reassured to know that optimising the efficiency of your plant's steam system could be easier than expected. Steam traps, for example, are the most important link in the condensate loop and can help to lower energy consumption and increase productivity. Effective steam trapping is therefore an essential process that can help you operate more sustainably.

Needless to say, trap selection must ensure the pressure, condensate load and air venting requirements of the process are met. From trapping stations to specific trap devices, they are considered to be one of the most effective resource-saving measures, so you must take care of them – ideally through scheduled maintenance.

Waste not, want not

A reliable and safe supply of hot water is crucial in a plant, whether it be for wash down processes or even sterilisation. Traditionally, industry has relied on large shell-and-tube calorifiers that use steam to heat water. However, these can be inherently inefficient and can also increase the risk of Legionella. By replacing these storage tanks with instantaneous systems that use compact heat exchangers, your plant can achieve energy savings of up to 20 percent. These systems work by capturing and reusing heat that may otherwise be wasted and can deliver a constant supply of instantaneous hot water at a stable temperature. This reduces the amount of steam required, which in turn cuts both fuel demand and the associated CO₂ emissions. Furthermore, plate heat exchangers are easier to maintain and much simpler to control, which helps keep your system running at optimum efficiency.

You cannot manage what you cannot measure

The boiler house is the engine room that powers your whole steam system, making it a vital place to measure efficiency from. The only way to obtain true boiler efficiency is to meter all energy into the boiler (in the gas and feed water) and compare this with the useful energy out of the boiler (in the steam). Energy monitoring systems manage this process, allowing you to quickly react to data received. If the monitor detects that efficiency levels have dropped, for example, the cause can be identified quickly and remedial action taken in order to prevent unnecessary costs arising. The monitoring of systems also enables you to benchmark the efficiency of boiler settings and operating procedures, meaning energy and cost savings can be effectively measured and implemented.

We must all play our part in order to meet the 2020 targets. By implementing simple measures to help optimise the efficiency of the steam system, you will not only benefit from reducing your plant's carbon footprint, but will achieve significant cost savings in the process too.

FIND OUT MORE

If you've been inspired to do more to improve your environmental impact, you'll be pleased to know that there's plenty more energy savings to be had.

For more information please visit: spiraxsarco.com/uk or email connexions@spiraxsarco.com.

FIND OUT MORE

For more information on Spira-trol, please visit sxsc.com.uk/spiratrol.





Condensate recovery: the unsung hero of boiler house efficiency?

After steam, condensate is arguably the next most valuable resource available to your plant. Containing up to a quarter of the total energy of the steam from which it came, we should be recovering every last drop.

We all know there are many benefits associated with reducing energy consumption, not only for your bottom line but also for the planet. Maximising energy efficiency can come in all shapes and sizes, but don't be discouraged – it can be easier than you think.

The ability to recover condensate to the boiler has the potential to provide

exceptional return on investment. It's a relatively simple concept that can be achieved in more ways than one, and because of this, condensate recovery can sometimes feel like the unsung hero in the boiler house. Not only can it cut your energy bills dramatically, it can also see maintenance costs reduced and this can have huge benefits if you're relying on steam for your process.

Financial benefits

Utility bills and fuel costs can affect the profitability of your boiler house in a major way. Water and energy are clearly the two key resources used to create steam and fluctuating fuel prices can really impact overall running costs. It is for this reason that condensate recovery is one of the most effective



APT14 Packaged Pump Unit

resource-saving measures for most steam sites.

A steam system can benefit significantly from the recovery of condensate and, even when recovered in small quantities, it can prove economically worthwhile.

While a good system will recover 80 percent of its condensate and feed it back in to the system, failure to recover condensate will cause your boiler house to suffer losses which can only be made up by a supply of freshwater. The energy then used to heat this water to the optimum temperature will directly impact operating costs.

When recycling condensate, you can achieve valuable savings in both fuel and water-related expenses. Condensate is a valuable resource that contains around 25 percent of the heat energy from the original steam. If you feed the boiler with high-temperature condensate you have the potential to maximise boiler output as less energy is required to convert make-up water into steam. By effectively recovering and utilising condensate, fuel costs and water consumption are lowered.

Improvement of feed water quality

In a boiler, condensate recovery is also one of the best ways to reduce the level of oxygen in water, helping to minimise the risk of system corrosion.

As condensate is formed from steam, it has few impurities but in contrast to this, cold make-up water needs to be treated before entering the system. Importantly, condensate, unlike make-up water, also contains energy from the steam it's derived from, so again, the more condensate we bring back to the system, the better.

Environmental impact

What has to be remembered is that energy is lost during blowdown, so the ability to reduce this process through recovering condensate, will allow you to benefit from the associated energy savings. By saving energy, your steam plant can experience significant financial gain as well as improved equipment life, all while reducing your impact on the environment.

No matter how much condensate your company generates per day it should never be put to waste. For those who don't know where to start, here are some useful tips:

HOW TO RECOVER CONDENSATE

- Steam traps retain steam within the system for its heat, while releasing condensate and incondensable gases as needed.
- Condensate will always be pushed through the trap by motive steam force. If the condensate is unable to get away, then it may be necessary to use pumps.
- Automatic pump traps act as conventional steam traps, but when back pressure rises, pump traps automatically switch to pumping mode to remove condensate.
- A deaerator head is important to mix returned condensate, flash steam and cold make-up water as they are fed into the feedwater tank.
- Flash steam is released from hot condensate when its pressure is lowered. Use it, don't waste it. Collect in a flash vessel and use for heating, and recover any associated condensate.
- Closed-loop, pressurised flash steam recovery allows most of the energy from both the condensate and its flash steam to be used, reducing steam-raising costs and increasing boiler efficiency.
- Use the boiler water and flash steam from the boiler TDS blowdown to heat the boiler feedtank.

There is no doubt that the payback period of an effective condensate recovery system has the potential to make this investment an attractive proposition. The ability to maximise boiler output, and make the best possible use out of the energy found in condensate, should be considered a huge advantage and never underestimated.



MFP14 Packaged Pump Unit

FIND OUT MORE

For more information, visit spiraxsarco.com/uk or email connexions@spiraxsarco.com

Train to gain 2017

Is your business an organisation which takes the development of its staff very seriously, or are you one of the unlucky few whose budget tends to be spent elsewhere? With attitudes towards training varying greatly between businesses around the country, Sally O'Connell, our UK Steam Technology Centre Manager, outlines just some of the reasons why training should be given the investment it deserves.

Improve staff retention and motivation



We all like to be looked after at work and what better way to demonstrate the commitment you have to your teams than providing them with relevant training. The opportunity to up-skill demonstrates that you value their commitment and contribution to the organisation.

Provide the knowledge for your team to work safely



Effective training allows you to ensure regulations and processes are met correctly – particularly in the case of health & safety related training or areas of the business which require a prescribed process to be followed. The BOAS course is a good example of this, as the BG01 guidelines recommend that boiler operators and managers achieve the national industry standards, which this course covers.

Increase productivity



A highly trained workforce enables you to make the most of their skills and knowledge. After all, a team of specialists will have a deeper understanding of what is required of them, and how this plays a part in the organisation's process efficiency.

Stay current

Processes, requirements, and legislation all evolve over time, so it's important your teams are working to the latest standards rather than those which may have been surpassed.

Create a diverse skill set

Why not raise the bar when it comes to sharing knowledge within your team? Training provides an opportunity to share best practice, to allow individuals more opportunity for career progression, and to give the organisation a more robust succession plan.

Turn the theory into practice

Team members who know the job in hand and understand its background can make a much more valuable contribution to the plant they're working on. By turning training experience into practice, employees can be much more confident and efficient in everything they do.

Increase your competitive advantage

When your team is confident in its knowledge base, its capacity to refine and optimise plant performance is much greater. A more efficient and effective



process will in turn impact on your bottom line – leaving the competition lagging behind.

Support specific roles with specific skills



Specific job roles need specific skills which can only be achieved through specific training courses. It really is as simple as that.

Attract the best talent



Investing in your staff sends a clear message that you value their contribution and are willing to invest in their future. This is a hugely attractive proposition and could be the difference between hiring the best talent and losing it to a competitor.



Concerns raised over high limit control valve maintenance



High limit control valves are widely used in commercial buildings such as hospitals, schools, and offices, but could the way you maintain yours risk breaching health and safety guidelines? Dave Bell, our Field Services Manager, explains:

There is every chance you will be completely familiar with high limit valves designed to shut off the flow of the heating medium, such as steam, to prevent overheating or excess pressure. As you'll also be aware, each high limit control valve requires regular maintenance and testing to ensure that it not only performs an opening and closing operation, but that it also completely shuts off the steam supply. All too often, the practice of valve maintenance is one of the first to slip down the priority list.

The low priority myth

If you're a steam user in the UK, introducing adequate maintenance and servicing regimes remains a major challenge, and this is a source of real concern within our industry. There is every chance that you do not have the resource to plan and carry out regular maintenance of equipment and this can result in servicing and testing being seen as an "unnecessary cost" and consequently treated as low priority.

The choice you have to make between 'Planned Preventative Maintenance' and 'Breakdown Maintenance' needs careful assessment of the risks associated with either. In the case of high limit safety devices, designed to shut off the heating medium in the event of an over-temperature event or the loss of power to a control system, there may be severe consequences if your system fails to operate correctly.

Failure to maintain and test high limit valves may result in high temperature water being circulated throughout your building, potentially leading to scalding or burns.

A very real risk

Unfortunately, we've seen the results of failing to maintain such equipment and the problems this has caused for the end user.

I know of one case in which multiple high limit control valves failed to close during a power failure, sending 120°C steam around the hot water loop of a hospital, which presented a serious danger to patients and staff. Investigation later revealed that the valves had not been serviced and there was no record of them ever having been tested.

What to include

Inadequate servicing and testing is becoming more common in the UK, with many end users failing to

recognise the importance of a regular maintenance regime. Any program of maintenance for control and high limit valves should include regular visual inspection of the controllers, valves and actuators; dismantling of the valve prior to cleaning, the replacement of valve stem seals; the checking and cleaning of strainer screens and an all-important functionality test and written report on the condition and operational status of the device.

Hospitals and social care buildings are often deemed to be high-risk due to the vulnerable nature of many of the building's users. However, if you are responsible for the plant and equipment within a building, be aware that all of your building's users are covered by a variety of regulations, including the PUWER (Provision and Use of Work Equipment Regulations), the Management of Health and Safety at Work Regulations and the Health and Safety at Work Act.

Don't forget, those responsible for your building's upkeep have a duty of care to ensure all systems are safe to use.

FIND OUT MORE

Our 2017 Training Course Brochure is available on our website. Simply visit sxsc.com/sxstb17 to download your copy or call 01242 535211.



FIND OUT MORE

For more information, please visit spiraxsarco.com/uk or email connexions@spiraxsarco.com





News

BRINGING THE PAST TO LIFE



After hearing an appeal for help to get an old steam whistle from Holloway Brother's factory in Stroud, Gloucestershire working again, Spirax Sarco's Professor Jeremy Miller jumped at the chance to help. Now in the possession of Fay Woodward, daughter of the factory's former boiler engineer, we helped sound the whistle for the first time in 40 years, back in January 2017, in conjunction with BBC Radio Gloucestershire. It was an incredibly emotional occasion for Fay, who used to run down to the factory as a child to sound the whistle at home time.

The story didn't end there, however. Utilising an impressive steam engine owned by David Oliver, one of Spirax Sarco's Research Test Engineers, we visited Stroud in April to help sound the whistle close to the site of the original factory. This was done at precisely 8am, the time the whistle would have sounded across the valley to notify staff of the start of the working day.



BBC Radio Gloucestershire's breakfast show was broadcast from the site all morning, speaking to Fay and a host of ex-Holloway workers who had come down to enjoy this nostalgic event.

You can read more about it here: sxsc.com.uk/hollowaystroud

BRITAIN'S MOST ADMIRED COMPANY WINNER

Spirax-Sarco Engineering plc has been voted top of its sector (Engineering & Machinery) and also Britain's 6th most admired company for 2016/17 overall in Management Today's Britain's Most Admired Company awards.

The awards are compiled by researchers from the Leeds Business School who ask senior executives from around 250 publicly-listed companies in 25 sectors and analysts at some of the leading investment firms to evaluate companies based on a range of criteria. Spirax Sarco Engineering plc was thrilled to have won the accolade against some stiff competition!

Want to work for one of Britain's Most Admired Companies? Take a look at our current UK vacancies: sxsc.com.uk/spiraxvacancies.



Training

WE WANT TO HEAR FROM YOU!

We're looking to develop new courses for 2018 and would love to get your feedback. What are the hot topics you're talking about at the moment? What issues are you currently facing? What training do you feel you need? Let us know by ringing 01242 535211 or emailing training@uk.spiraxsarco.com. We look forward to hearing from you!

UPCOMING TRAINING DATES

Steam Boiler Plant Fundamentals: 1st-2nd June and 28th-29th June

BOAS: 26th-30th June and 10th-14th July

BOAS Renewal: 8th-9th August

Introduction to Boiler House Risk Assessment: 6th June

Legionella Awareness: 6th June

Steam Plant Maintenance: 12th-15th June and 3rd-6th July

Design of Steam and Condensate Systems: 19th-22nd June

Introduction to Steam and Condensate Systems: 26th June

Boiler House Water Treatment: 4th July

Safety Valve Accreditation: 18th August

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