SPENCE™

Go Green with Spence™: Steam as an Energy-Efficient Solution for HVAC Applications

As businesses around the world seek to reduce their carbon footprint and become more sustainable, the benefits of using steam as an energy-efficient solution in Heating, Ventilation, and Air Conditioning (HVAC) become more apparent. By improving energy efficiency and reducing emissions, steam offers a sustainable and cost-effective solution for businesses of all types.

Why Choose Steam?

Steam is used in a wide range of applications due to its unique properties. The use of steam in HVAC is considered energy-efficient for several reasons:

- **Efficient Heating:** Steam provides efficient and effective heating for buildings. It has a high heat transfer capability, allowing for quick and uniform distribution of heat throughout the space.
- **Zoning Capabilities:** Steam systems can be easily zoned to provide heating to specific areas or zones within a building.
- **Humidification:** By injecting steam into the air, the moisture content can be increased, improving indoor air quality and comfort, particularly in dry climates or during the winter months when humidity levels are low.
- **Energy Storage:** Steam can be generated during off-peak hours when electricity costs are lower and stored for later use.
- **Reliable:** Steam system have a long history of use in various industries, including HVAC. These systems are known for their reliability and durability, a well-designed and maintained system will have a long lifespan. This reliability ensures consistent and efficient operation over time.
- **Existing Infrastructure:** In some cases, buildings may already have existing steam infrastructure in place. Retrofitting or utilizing these systems can be more cost-effective compared to installing entirely new heating systems.

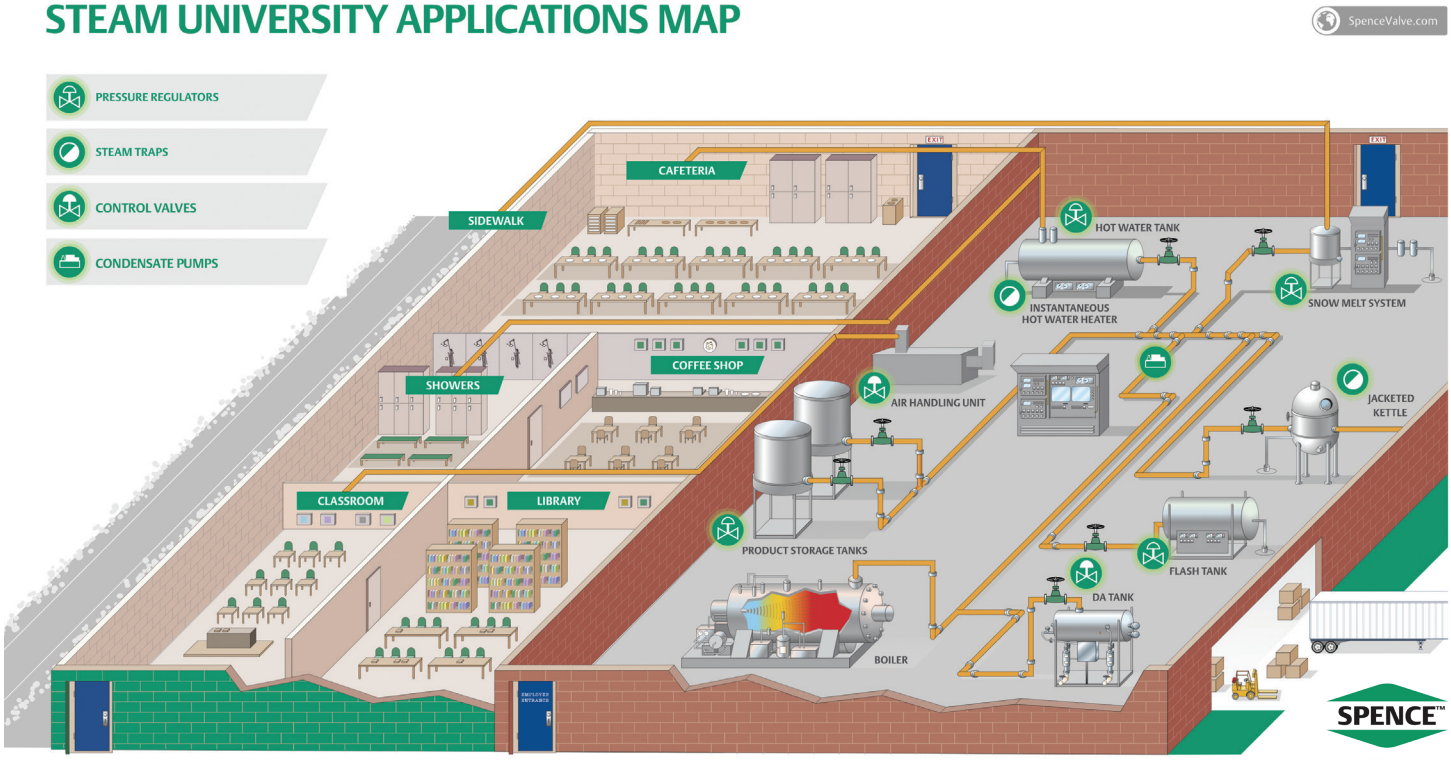
While steam offers advantages in HVAC applications, it's important to consider factors such as system design, maintenance requirements, and energy efficiency measures to maximize its benefits and ensure sustainable and environmentally friendly operation.

How Spence Products are Used in HVAC System?

- **Steam Generation:** Steam is generated with a boiler or other steam-producing equipment within the HVAC system. Spence Regulators are installed in the steam supply line from the boiler to regulate and control the pressure of the steam that enters the HVAC system. By maintaining a constant pressure, the Spence regulator ensures optimum heat transfer at low steam pressures and prevents excess pressure that could damage equipment.
- **Steam Flow Control:** Spence Control Valves work in conjunction with Spence regulators to modulate the flow of steam. These valves adjust the flow rate based on temperature requirements, allowing precise control over the amount of steam entering the heating coil or heat exchangers. By regulating the steam flow, control valves help maintain the desired heating or cooling output.
- **Heat Distribution:** Steam energy is economically distributed from the boiler to a pipe header with various take off points to various HVAC process equipment, comfort heating and strategically placed drain ports.
- **Condensate Management:** During the heat distribution process, steam condenses into water known as condensate. Spence Steam Traps are installed at various points in the piping network, typically at the inlet and outlet points of the heating coils and heat exchangers. Steam traps function as automatic valves that allow the passage of steam while removing condensate and non-condensate gases from the system. They prevent condensate from accumulating within the heat transfer equipment, ensuring efficient heat transfer and preventing damage. Having the appropriate steam trap management program will reduce carbon footprints caused by steam leaks and failed steam traps.
- **Condensate Removal:** As condensate is collected by the steam traps, it needs to be efficiently removed from the system. Spence Condensate Pumps come into play when gravity-based drainage is insufficient or not feasible to remove the condensate. These pumps collect the condensate and pump it out to a suitable drainage system or collection point. If the system is equipped with a condensate recovery system, condensate is collected in a vessel and then transferred to the boiler for reuse. Condensate pumps help maintain proper system operation by preventing water buildup, which can hinder heat transfer efficiency and cause damage to the equipment.

By incorporating Spence Regulators, Control Valves, Steam Traps, and Condensate Pumps, HVAC systems can effectively regulate steam pressure, control steam flow, manage condensate, and optimize heat transfer. This ensures efficient heating or cooling, prevents water accumulation, and promotes the longevity and performance of the HVAC equipment while contributing to energy savings, reduced downtime, and a greener operation overall.

STEAM UNIVERSITY APPLICATIONS MAP



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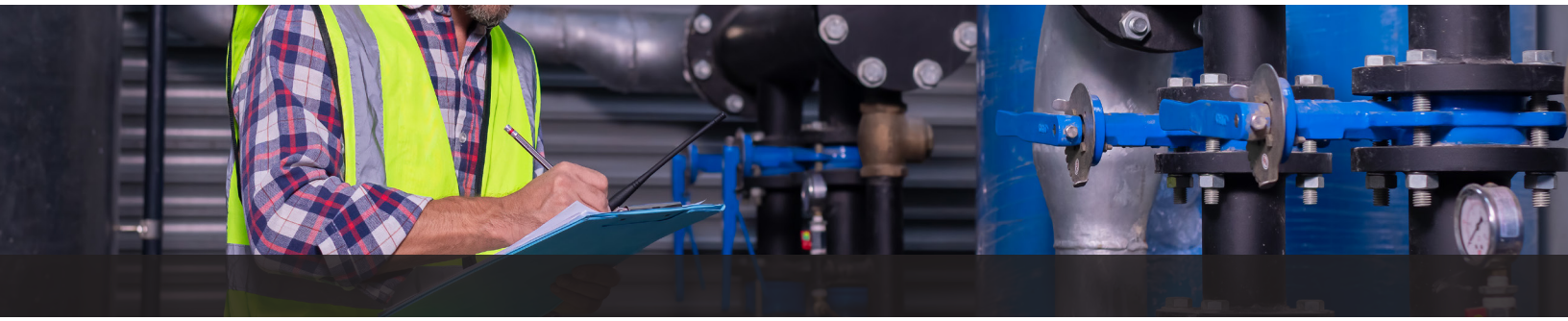


The Benefits of Choosing Spence Valve

Spence products play an important role in supporting sustainability initiatives in HVAC systems. Spence steam traps and valves are essential devices that remove condensate from the steam distribution system. They ensure that only dry steam is used for heating, which improves the overall efficiency of the HVAC system. Properly functioning equipment prevents the loss of steam, and helps to recover condensate for reuse.

Why Choose Spence?

Energy Efficiency: Spence regulators and control valves are designed to regulate the flow and pressure of steam effectively. By ensuring precise control over steam parameters, these products optimize energy usage and promote energy efficiency in HVAC systems. Spence steam traps are designed to prevent the loss of valuable steam, allowing for efficient heat transfer and minimizing energy waste. By promptly removing condensate, they maintain dry steam, which maximizes the system's energy efficiency and reduces fuel consumption. Working together, these products helps reduce energy consumption and lower greenhouse gas emissions.

Unmatched Reliability: Spence products are known for their durability and reliability. By choosing high-quality components, HVAC systems can operate efficiently for longer periods, reducing the need for frequent replacements and minimizing waste generation. Reliable equipment also ensures consistent performance, contributing to a greener and more sustainable operation.

Engineered Solutions for Your Needs: Our Spence team of experts will work closely with you to assess your requirements and provide customized solutions. Expect a system that perfectly aligns with your green goals and maximizes your energy savings.

Seamless Integration: Spence products are designed to seamlessly integrate into existing infrastructures, minimizing installation time and disruption. Spence provides products that can efficiently and sustainably enhance your system without hassle.

Comprehensive Support: Spence is committed to your success. From product selection, installation and maintenance, our experienced team of engineers will be available to guide you.

By selecting Spence products for steam applications in HVAC systems, you can achieve energy efficiency, proper condensate management, sustainable heat transfer, and reliable operation. These factors collectively contribute to a greener and more environmentally-friendly HVAC system, reducing energy consumption and promoting sustainability in building operations.

Go Green with Spence™

Go Green with Spence Today!

Embracing sustainable practices and technologies enables you to reduce energy consumption, lower costs, and make a positive impact on the environment.

Contact us today to learn more about how Spence can benefit your business, improve energy efficiency, and help you achieve your sustainability goals. Let us work together to build a more sustainable future!

Spence Products to consider:

Main Valves

Pilots

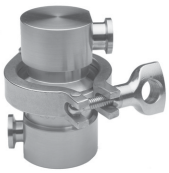
Condensate Commander Pump

Control Valves

Temperature Regulator

Mechanical Steam Traps

Clean Steam Traps



Thermostatic Steam Traps

Thermodynamic Steam Traps

Direct Operated Regulators

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