Swagelok

Swagelok MENA

Swagelok® Oxygen Injection Systems for AVT(O) and AVT(OT)

Better Technology = Better Outcomes

Our highly configurable design provides control, improves accuracy, and enhances oxygen demand efficiency.

Many heat recovery steam generators (HRSG) suffer from chronically low dissolved oxygen (DO) levels in the condensate and feedwater, significantly contributing to single phase flow accelerated corrosion (FAC). This condition is frequently attributed to low air in-leakage and removal of DO through the low-pressure admission steam. These factors require oxygen to be added at the suction of the condensate pump and up stream of the boiler feed pump to maintain the required DO concentrations.

AVT(O) chemistry prescribes elevated condensate and feedwater pH to minimize the single and two phase FAC mechanism. Maintaining small amounts of DO in these systems promotes an oxidizing environment and the formation of hematite oxide to further mitigate single phase FAC.

The **Swagelok® Oxygen Injection System** features a simple, modern design that:

- Maintains control of DO concentrations in condensate and feedwater systems
- Provides continuous, real-time data of oxygen demand
- Prevents over pressurization and elimination of over feed

Partnering with industry chemistry SMEs and HRSG owner/operators, we have developed a solution that is repeatable on all units across your fleet where chronically low DO is a challenge.

Designed for Safety

Our oxygen injection system design regulates compressed bottled oxygen down to safe working pressures, eliminating the possibility of oxygen overfeed.

All materials meet ASTM G93 Level C cleanliness requirements for safety in oxygen service and all components that may operate at high pressure (>200 psig oxygen) are constructed of brass. The system can safely transition to 316 stainless-steel downstream of the relief valve.

Features include redundant 10-micron filtration and relief valves set between 135-160 psig to protect regulators and mass flow controllers (MFC) from damage, preventing high-pressure oxygen build-up that could become a fire hazard. Further, the MFC may be configured to utilize clean compressed oil-free instrument air as the oxidizing agent for AVT(O).

Designed for Accuracy

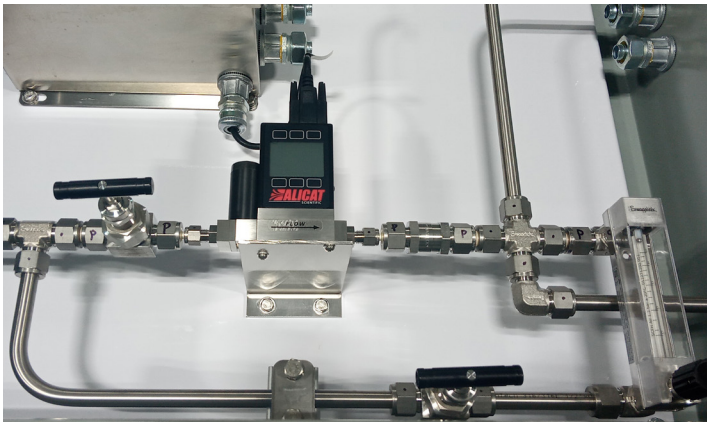
Swagelok oxygen injection systems are designed to actively maintain prescribed dissolved oxygen concentrations in condensate and feedwater systems of AVT(O) and AVT(OT) treatment schemes.

- Dissolved oxygen in ultra-pure systems promotes an oxidizing chemistry environment and the formation of protective hematite oxide layers on the metal surfaces.
- Reduces the potential for single phase FAC component failures and reduces levels of total corrosion product transport in condensate and feedwater systems.

Designed for Efficiency

Typically, condensate and feedwater pH are actively maintained by automated DCS logic ammonia or amine feed. However, DO concentration has only been a monitored constituent with no control.

The Swagelok oxygen injection system uses a digital mass flow controller to actively maintain DO by injecting small flow rates of oxygen or instrument air into the condensate and feedwater systems. Flow rates are automatically controlled through the DCS logic based on feedback from the DO monitors. Startup and shutdown of the system may also be automated based on DCS logic programming.



The Swagelok Limited Lifetime Warranty demonstrates our relentless commitment to quality and our customers. Every Swagelok product is backed by this promise for the life of the product, so you can rest assured that their investments are protected.

For more information about the advantages offered by the Swagelok Oxygen Injection System, including how it can help increase safety, accuracy, and efficiency of your operations, contact your local team at Swagelok MENA.

Connect with your local Swagelok team

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