

Case study

Optimize Control, Eliminate Oscillation...

ValveAware Diagnostics

Improved Control Performance

10%

Eliminate +/- 5% oscillation ⁽¹⁾

Operating Efficiency

~99%

Response rate with Tuning ⁽¹⁾

⁽¹⁾ Savings & reduction vary by application

Contact your local Masoneilan representative to learn more about ValveAware, Advanced Valve Diagnostics

Precision control is essential to profitability of critical processes. Gasoline blending, for example, relies on the precise balance of proprietary additives to achieve desired octane. Under balancing the chemistry can produce a downgraded product sold at a lower price. Over dilution yields a waste in high cost additives. Control valve reliability and precision are critical to achieve optimized results.

THE CHALLENGE

Selecting the right control valve for the process conditions is half the challenge. Maintaining and optimizing performance longer term can easily be over-looked and **one of the biggest contributors today to undesirable process yields**. Many factors can lead to a control valve **shifting out of calibration or becoming out-of-tune**. With information at hand, these issues can be observed as **'stick/slip' phenomena where continuous oscillation around set point misses optimization** for the desired outcome.

THE SOLUTION

The right maintenance plan is essential to the long-term operation, and this includes the right diagnostic platform to monitor trends to understand how to modify the valve for enhanced operation. **Masoneilan's ValveAware™ continuously monitors the control performance by tracking valve position against set point**. Applications with deviations from set point are diagnosed by tracking RMS (Root Means Square) Error, which is the amount of process variation experienced as a valve oscillates in attempt to find set point.

ValveAware tracks the valve performance through an **easy to read VHI (Valve Health Index) meter where users can quickly identify problematic applications**. Each application is measured with as many as 16 key **performance indicators to diagnose the potential failure**. Continuous overshoot across the set point is quantified with a high RMS Error outside the acceptable range. The failure mode is quickly diagnosed and resolved by resetting dead band through auto-tuning the valve from the control room.

Masoneilan™ ValveAware diagnostics, and Performance Optimization Service are available to tune your high value processes to optimize your bottom line!

VHI (Valve Health Index)



Legend:



VHI Contributors: RMS Error, Friction, Offset

Most Recent Test

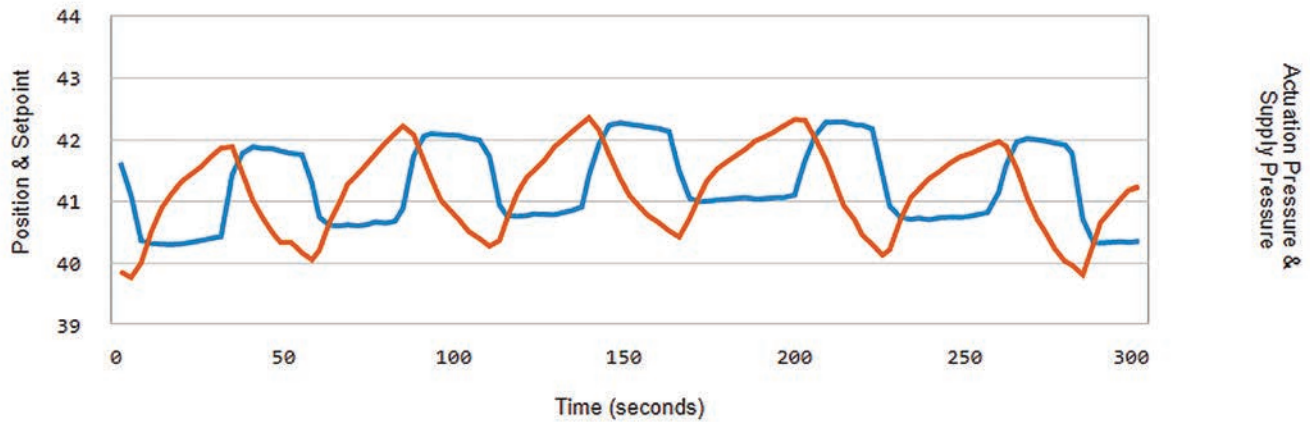
Friction	1.23 psi	⚠️
Friction %	11.8%	⚠️
RMS Error	12.67	⚠️

Valve experiencing 'stick-slip' phenomena. High friction % is causing delayed response in valve position, resulting in continuous oscillation of the process.

Control Performance

Trend

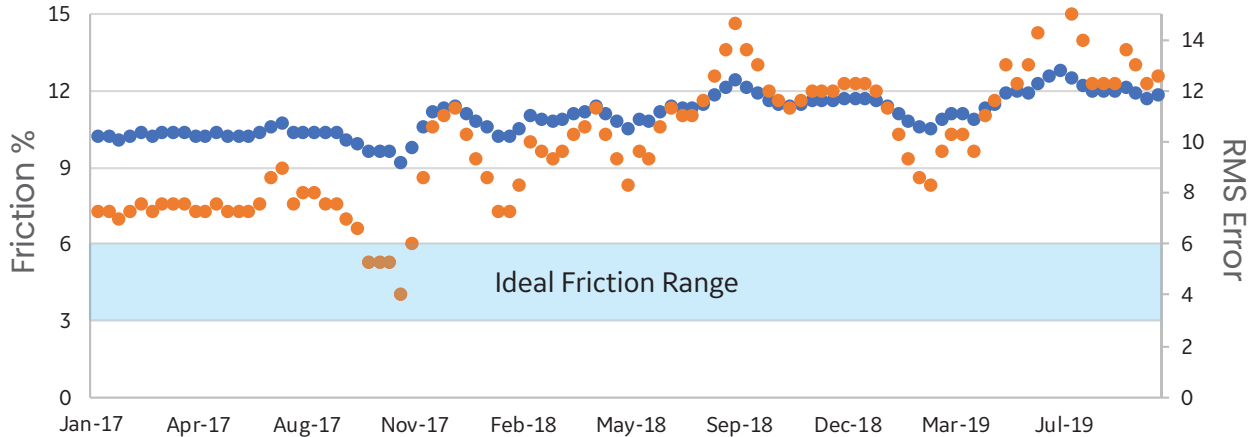
— Position(%) — SetPoint(%) — Actuation Pressure(psi) — Supply Pressure(psi)



Valve is slow to respond, continuous delay is valve position to set point causing process oscillation.

Valve Friction Trend

● = Friction ● = RMS



Packing friction consistently high over time, well above ideal range. Friction and RMS alerts have been constant over time, advising of stick-slip condition that will impact the valve responsiveness, resulting in control oscillation.