

▶ ASSET AI MODEL FOR RECIPROCATING COMPRESSORS

OVERVIEW

As part of the Analyze and Optimize service tiers Windrock Enterprise includes a compressor AI model. The model consumes the cylinder pressure and process data and uses advanced AI models to provide predictive analytics for compressor cylinder valves.

Because behavior deviations can occur in both overt or covert ways, it is critical to understand the contributing features and indicators of failure to better derive root cause and drive precise repair actions. Through a concept called explainable AI, the advanced machine learning capabilities available in Spotlight prioritize the top contributing trend tags (features) that are driving the results.

Applying IIoT tools to the problem of reliability centered maintenance (RCM) not only enables detection of a failure but, with the large amount of data and AI models, enables anticipation of a failure before traditional condition monitoring (CM) systems would detect it. Using the neural network-derived risk index as a baseline to identify high-priority repairs, operators can improve their decision-making in a way to optimize repairs across a fleet of assets-scheduling parts and labor around criticality and convenience.



Benefits

- **Get to answers:** See the prioritized list of trend tags in a single screen along with the output of the model.
- **Use existing expertise:** Compatible with the Windrock Enterprise platform for easy operational analysis, common control features, and interface to external systems such as OSIsoft PI*.
- **Anticipate problems:** Early indication of machines with valves in distress or that have reduced remaining life enables improved maintenance and planning.
- **Leverages Spotlight Platform:** when combined with Spotlight for compressors get a complete picture of your reciprocating assets in a single application.
- **Valve train monitoring:** Segmental vibration allows trending of events related to valve train health (loose lash, tight last, valve recession, etc.) for quick identification of problems.
- **Power cylinder mechanical condition:** Segmental vibration analysis to detect power cylinder mechanical problems such as piston slap and ring/liner wear.

