

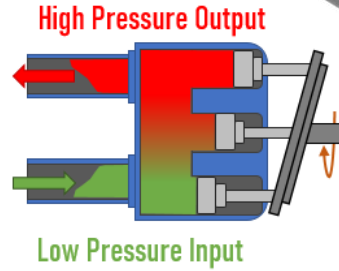
# POSITIVE DISPLACEMENT PUMPS



MACHINE HEALTH SOLUTION FOR METALS

## THE PROBLEM:

In steel production, positive displacement pumps supply pressure for a variety of vital operations. It is crucial to protect these assets through proper monitoring and maintenance. Unexpected failures can halt an entire line, process, or system and lead to expensive downtime and potential safety hazards.



### COST OF ASSET FAILURES

**\$10,000/hour**  
Downtime Cost

**50 hours/Month**  
Downtime

**\$120,000**  
Replacement

### INDUSTRY SAVINGS POTENTIAL

**\$600,000/month**

**\$20,000/asset/month**

## ASSET BLIND SPOTS:

There are several inherent challenges related to monitoring piston pumps.



**Fault conditions can go undetected for long periods of time, erupting in a matter of minutes. Route-based monitoring will not pick these up.**

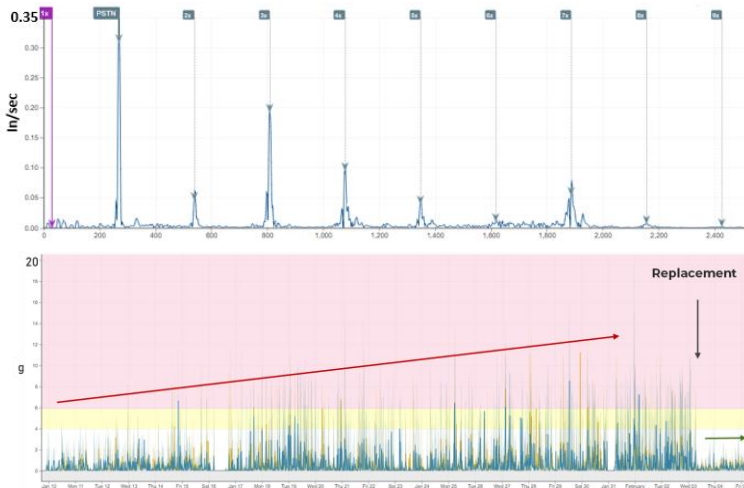


**Every asset contains its own unique fault frequencies and patterns correlating to specific issues. Early detection means quick, actionable results.**



**It can be difficult to determine appropriate vibration levels, as each asset vibrates differently. Alarm thresholds catered to each individual machine means attention is directed towards the most critical issues.**

# A NEW APPROACH TO PISTON PUMP HEALTH OPTIMIZATION



**Continuous, live-feed vibration monitoring reveals underlying fault conditions in real time.**

Piston pump fault detection comes in many forms, resulting from wear and fatigue, incorrect operating or setup procedures, and electrical issues.

The figures above illustrate a piston pump wear condition that was detected with KCF's V3 vibration sensor. A high vibration alarm was triggered, and a spike in the piston pass frequency and its harmonics led to a piston wear diagnosis. The pump was immediately pulled and rebuilt before a catastrophic failure resulted in costly downtime and product loss.



## HARDWARE

- KCF's V3 biaxial vibration sensor can be easily installed on any critical monitoring spots
  - Inboard/outboard bearings
  - Drive/driven shafts
- Oil quality sensors - particulate detection



## SOFTWARE

- SMARTDiagnostics monitoring
  - Continuous vibration readings
  - Individualized alarm thresholds
  - Sentry data analysis
- Data dashboard - Callout reporting



## REAL-TIME DATA

- Data needed to optimize analysis:
  - Schematics/drawings of pump
  - Run speed
  - Bearing information
  - Crucial process flow information



## TRAINING

- Sentry
  - Quarterly site visits
  - In-person training
- KCF Academy
- Customer training/handbooks

**CONTACT US!**

Call **814-867-4097** or email [sales@kcftech.com](mailto:sales@kcftech.com) for information.

