JIER CUSHION PUMP

MACHINE HEALTH SOLUTION FOR AUTOMOTIVE

CUSTOMER LOGO HERE

KCF technologies

THE PROBLEM:

Pump Cushions are a vital part of the automotive stamping process. Cushion pumps recover the die once it has pressed the material.

A failure causes the entirety of the line to stop which causes huge downtime to occur. The last cushion pump to fail at KCAP Stamping had a 6 month lead time, lucky arriving just before the failure of the installed pump

COST OF ASSET FAILURES	INDUSTRY SAVINGS POTENTIAL
$15,000/hour Downtime Cost	**$432 Million Ford Wide**
720 hours Downtime	**$40 Million + per site at Ford**
Other ex: safety, lead time, motor failure, pump failure	**$10 Million + Per Pump at each site**

ASSET BLIND SPOTS:

There are several inherent challenges related to monitoring Cushion Press.

Challenge #1: Vibration frequencies are often undetectable by the human ear and eye as well as fall outside typical range of 0-25g.

Challenge #2: High vibration is often occurring on these pumps even when installed correctly. The problem is likely at a system level.

Challenge #3: This asset typically runs even when the production line stops causing additional damage to occur because of abnormal load

A NEW APPROACH TO Jier Cushion Pumps

Above: Describe image

Typically the solution to these pumps come from failure events or removing these pumps if abnormal behavior begins without knowledge of a true fault mode or if the pump is the problem.

Our solution is different due to real time data coming from the pump and motor to better understand fault conditions occurring. Installing Sensor dampeners to better catch changes in vibration levels. The data can also be used for system optimization which would reduce the power consumption and turnover of these components. Early fault detection will reduce lead time concerns which have occurred during previous failures. Cushion optimization is the first step to stamping line optimization, the foundation of all sites.

HARDWARE

- There will be 3 Nodes from a HUB, two on the motor and one on the pump with vibration dampeners to reduce reading level
- Additional hardware that could show value would be the current and voltage transducers to watch for additional electrical draw which would show pump wear

SOFTWARE

- Threshold Settings
- Indicators
- Sensor Configurations
- Dashboards
- Reporting
- Comparative trending between the electrical and vibration data to better access whole system failure

REAL-TIME DATA

- Job Numbers
- Running Time and Downtime
- Pressure values
- Maintenance Records

TRAINING

- Sentry
  - In-person training
- Academy
- Pump System Optimization
- Customer training/handbooks
- Asset playbook

CONTACT US!

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KCF technologies