

School of Gauges

Spy Pro ESP Monitoring Applications

AUG 9th , 2022



1. Electrical

- Motor Temperature
- Current Leakage
- Motor Wye Point Voltage Imbalance

2. Pressure

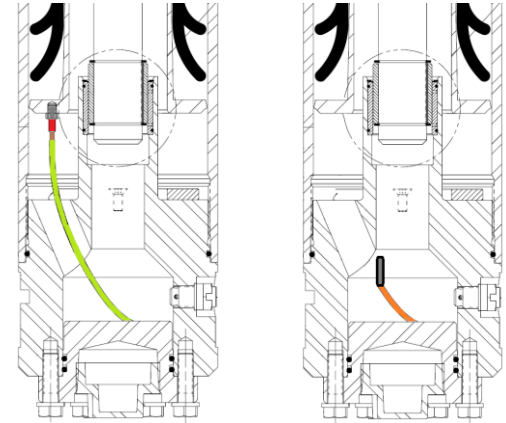
- Fluid Level at the Pump Intake
- Pump Efficiency
- Motor/Seal Integrity
- Well/Reservoir Testing (uCommand)

3. Mechanical Imbalance

4. Gas Locking & Slugging

Motor Temperature (KPI)

- Motor temperature (T_m) is the most important parameter to monitor and secure long motor life
- RTD and Thermocouple are available to measure T_m
- It is preferred to monitor closest to the motor windings
- Set a baseline T_m for your application
- Compare T_m with T_i to establish true T_m reference point
- T_m is an early KPI of electrical issues
- Operating at high T_m reduces the motor run life and can indicate:
 - Bearing wear, Winding stress, insulation breakdown, high motor torque, severe upthrust/downthrust, voltage imbalance, etc.
- Use T_m to shut down motor at high T_m
- Perform control shutdown (step down Hz) of motor to allow well fluid to cool motor
- Avoid sudden temperature changes or spikes to your motor to increase motor operating life.



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SoG Module 3 - Applications