ForeSite SENSE
Equipment Monitoring

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Frequently Asked Questions

ForeSite Sense equipment monitoring detects and measures wear on wrist-pin bearings to alert operators of impending failures before they can cause costly production delays or catastrophic damage. Below are common questions about this world-first technology:
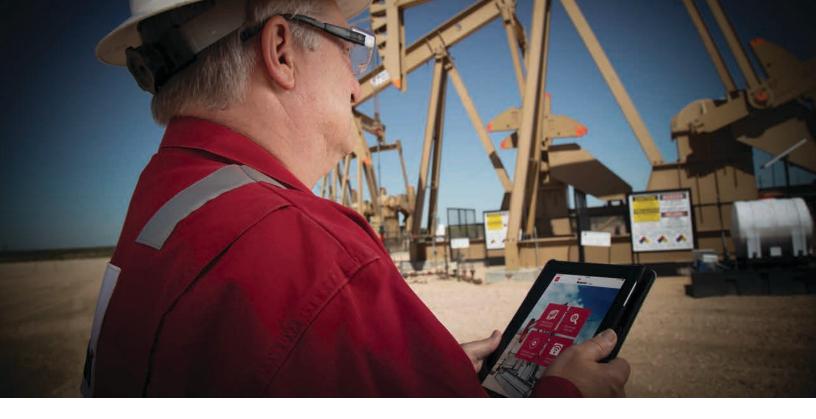
Q Will ForeSite Sense equipment monitoring work on any surface pumping unit?

A Yes. ForeSite Sense equipment monitoring replaces the existing wrist-pin caps with a purpose-built unit that includes all hardware and components. A receiver module is also configured for any brand of pump-off controller.

Q Can ForeSite Sense equipment monitoring measure the condition of other bearings in the unit?

A No. The technology currently focuses exclusively on wrist-pin bearing wear.

Q How often does ForeSite Sense equipment monitoring check the bearings?

A A measurement frequency of once per day is optimal. This intermittent operation ensures the battery pack will operate for at least one year, which should align with annual pumping unit maintenance.

Q How are the wrist-pin-wear replacement thresholds determined?

A Bearing-wear thresholds are calculated based on "defect frequencies" established by the bearing manufacturers. Various bearing elements, such as rollers and outer race, are assigned tolerance values based on new bearing data, previous measurements, and preset ranges.

Q Can ForeSite Sense equipment monitoring determine bearing-life expectancy?

A Not at this time. However, long-terms plans are to enable this benefit based on cumulative measurements and a wide range of real-world applications across all environments and types of unit.

Q Can ForeSite Sense equipment monitoring be used as a spot-check service tool?

A ForeSite Sense equipment monitoring sensors are designed as a permanently installed system. The technology is most precise with a time-based reference and comparison. Other uses are not recommended.

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Q Does rod load affect the wrist-pin-bearing measurements from ForeSite Sense equipment monitoring?

A ForeSite Sense equipment monitoring provides continuous surveillance of wrist-pin-bearing wear regardless of rod-load capacity. However, when pumping units are operated at less than 60% of the maximum rod-load rating, the bearings may receive unexpected shocks at certain points during crank rotation. This can result in significantly lower life expectancy for the ForeSite Sense equipment monitoring sensors and the wrist-pin-bearing.

Q Will ForeSite Sense equipment monitoring function in extreme temperatures?

A Yes. ForeSite Sense equipment monitoring is designed to perform reliably in the most severe weather conditions including temperatures ranging from –40° to 120°F (–40° to 50°C). ForeSite Sense equipment-monitoring modules have inner and outer housings that provide protective shields from moisture, debris, heat, and cold.

Q What happens when alerts are transferred to the RS-485 port?

A Alert values are transferred immediately to the RS-485 port and broadcast to the operator. Bearing-wear alert values are preset based on operator preference and are useful in communicating any need for bearing-wear service or to stop the unit if catastrophic failure is indicated.

Q Are bearing frequencies the same for every unit?

A ForeSite Sense equipment monitoring sensors will perceive the bearing frequencies of any pumping unit. Many units use use similarly sized bearings, similar defect frequencies, and compatible operational speeds. These factors present an operational window for the sensors that can be applied to other similar units.

Q Does ForeSite Sense equipment monitoring work on units with gas engine prime movers?

A Yes. Additional vibration dampeners may be required to reduce the vibration transfers from the engine to the unit base. However, gas-engine vibration frequencies are normally much higher than the range of interest for wrist-pin bearings. ForeSite Sense equipment monitoring includes mechanical and electric filters to dampen these vibrations for operational accuracy.

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