

Industry: Pharmaceutical  
Technology: I-DNA  
Machine: Centrifugal Pump  
Benefits



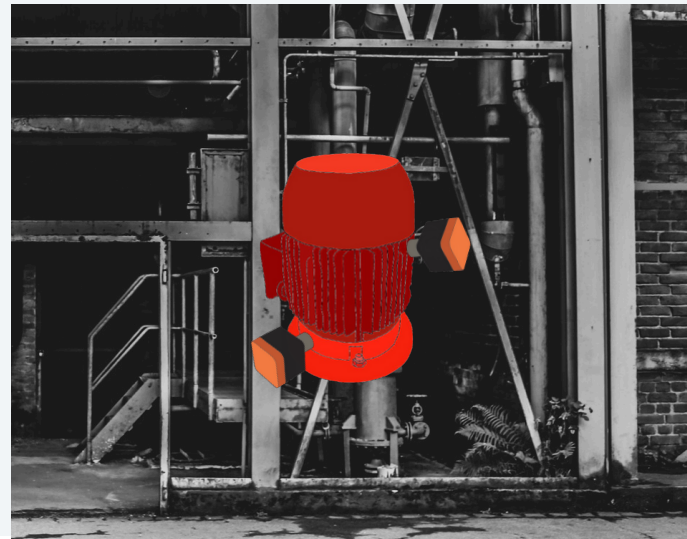
Increased asset lifetime



Increased meantime between failures



Improved quality and safety



## Introduction

This case study deals with the failure detection process of a high criticality centrifugal pump which was monitored twice a day (semi-continuous vibration and temperature measurements) with our Wi-care™ 100 wireless sensors.

## Situation

Acceptable values appeared in the overall measurements, which, at first glance, did not show any anomalies. An in-depth spectral analysis was then performed, which also revealed no problems.

However, I-care engineers decided to perform I-DNA measurements in order to get to the bottom of the issue.

These I-DNA measurements are a specific algorithm, which uses high frequency sampling. This action allowed us to detect:

- Bearing defects in the initial phase
- Lubrication problems
- Electrical problems

## Diagnosis

The I-DNA results showed high amount of stress waves in the non-drive end bearing of the motor, which was detected by the Wi-care sensor installed.

This was all caused by a **lubrication problem**, which was exerting friction on the bearing.

## Results

Thanks to our intervention, we could precisely detect the cause and location of the defect, using high-frequency vibration analysis.

Some of our recommendations were:

- Bearing lubricated for life
- Keep using the installed Wi-care sensor until the replacement of the bearing at the next production stop.

Once the customer replaced the motor bearing, the measurement after confirmed a better condition.