

Report on the fracture of screw journal of air compressor

Are screw compressor shaft fractures multisource fatigue fractures?

Table 2. Tensile properties of failed screw shaft compared with related standard. The results of macroscopic and microscopic fracture observation and analysis show that screw compressor shaft fractures appear as multisource fatigue fractures. In general, the greater the number of fatigue sources, the more stress concentration locations there are.

What causes screw compressor shaft failure?

Shahrivar et al. investigated the failure of screw compressor shaft and concluded that the failure was due to thermal expansion. Gong et al. found that a serious stress concentration caused crack initiation and propagation, this was the main reason for the screw conveyor shaft failure.

Do rotary screw compressors fail?

This research was conducted to analyze the failure of rotary screw compressors and their modifications. The failure occurred in the lube oil (lubricating oil), which was contaminated by water from the surrounding wet air. This failure analysis is done with a fishbone diagram and plans to overcome the problem by modifying the breather system.

How can vibration analysis and oil analysis help a screw compressor?

Design/methodology/approach - The research analyzes the ability of vibration analysis and oil analysis on a screw compressor in an oil and gas plant. The vibration data and oil data were collected from commissioning thru failure. The data is presented to demonstrate each technology's ability to provide advance warning of the failure.

What is the failure mechanism of screw shaft?

The failure analysis of screw shaft has been investigated. The failure mechanism for the failed screw shaft was multisource fatigue. The insufficient fatigue performance was due to the absence of surface hardening. 1. Introduction A commonly used device for producing compressed air in refineries is the screw compressor.

What is a screw shaft fracture morphology?

The macroscopic fracture observation shows that a screw shaft fracture is a multisource fatigue fracture, and each fatigue source corresponds to a spiral tooth. The fatigue source originates from the surface of the shaft and is located at the root diameter of the spiral tooth end. 3.3. Microscopic fracture morphology

Abstract Abstract: Based on the abnormal fracture of screw compressor screw in the whole machine operation, combined with its cross section characteristics, the paper has verified the ...

Compressor Failure Modes, Symptoms and Corrections A handy for analysis of a in. lure compressor, to aid in

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finding cause of failure take correction action. Replacement new or ...

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In this paper, fundamentals of bolted elastic joints subjected to cyclic loading are reviewed. A case history involving use of elastic joint techniques on the piston bolt of a small air compressor is ...

ABSTRACT: This paper deals with the design and analysis of screw compressor. The twin-screw compressor is a positive displacement machine used for compressing air to moderate ...

This paper analyses the root causes of screw shaft failure in screw compressors. The failure mechanism was studied by visual inspection, macro- and microfractography, ...

The compressor inspection report outlines 10 steps to inspect a compressor: 1) visual inspection for leaks, cracks, damage, and vibrations; 2) check oil level ...

The primary source of particulate contamination in rotary screw compressors is the inlet air. Dirt and dust making their way through the inlet filter will show in lubricant sample tests as silicon ...

The maintenance intervals depend on the operating environment and are valid for cool, dry and clean ambient conditions. In adverse working conditions or high frequency load / unload ...

The screw compressor is a compressor that uses impeller media to compress air. This compressor is included in the type of rotary compressor. In the work process, the screw ...

1. During a safety test of an air compressor, water leakage was discovered from a fracture in the 2nd stage air cooler. 2. Investigation found the stud bolt hole was deeper than the bolt length, ...

A shaft of the air compressor broke during use. By means of scanning electron microscope analysis, metallographic analysis and energy spectrum analysis, the fracture reason of the ...

From then on, as a result of their ever improving efficiencies, high reliability and compact form, screw compressors have taken an increasing share of the compressor market, especially in ...

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The compressed air is produced by different methods. One of the production of compressed air using oil free screw compressors is one of the efficient methods in term of pressure & power ...

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In this study, the time-dependent properties of the compressed air and the performance of the oil-injected screw compressor are calculated by a lumped parameter ...

Screw air compressors have been widely used for a long time due to its advantages such as compactness, high performance, and stability. There are many studies on these machines, but ...

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In manufacturing plant, compressors are running in a corrosive and high temperature conditions. So upgrading the design of the compressor unit can increase the reliability, safety and overall ...

The document is a monthly inspection report for an air compressor. It lists 11 items that were visually inspected, including taking service readings, checking ...

Thinking about buying a rotary screw air compressor? Read our rotary screw air compressor guide to find out what they are used for and how ...

Air compressors are critical for many industries, but early detection of faults is crucial for keeping them running smoothly and minimizing maintenance costs. This ...

Abstract This paper describes the results of laboratory analyses - metallographic specimens and strength tests - performed in order to evaluate the causes that determined the fracture during ...

The retention type of implant-supported prostheses is one of the important factors in ensuring passive fit. After the screw parts of our patients with screw fractures were ...

Compressors are critical to many processes, and the foundations that support compressors need to be designed, assessed and repaired properly to minimize vibration and increase ...

Thermal fracture o Frequent exceeding of the fatigue strength limit under bending, tension or torsion conditions results in fatigue cracking. A crack is initiated at a stress raiser and ...

Headless Compression Screw Fixation of Scaphoid Fractures Janice J. He, MD, Kristen Kuo, BA, Ariana N. Mora, BA, Brandon E. Earp, MD, Philip E. Blazar, ...

These can give high-quality air free from pollutants that can be used in delicate applications. Variable Speed Screw Compressor Variable ...

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As we know, reciprocating compressors are widely used in various industries such as petroleum, chemical engineering, metallurgy, and more, serving as a ...

This paper describes the results of laboratory analyses - metallographic specimens and strength tests - performed in order to evaluate the causes that determined the fracture during ...

Screw compressors are positive displacement compressors that utilize a pair of helical lobed rotors in a casing. The screw compressor has no valves; therefore, the location of the suction ...

ABSTRACT HYPOTHESIS Headless compression screws are the most popular type of fixation used for scaphoid fractures. Two commonly used implants are the Acutrak Head-less ...

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