

油封式旋片真空泵常见故障分析及处理方法

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摘 要:油封式旋片真空泵有着悠久的历史,已经形成一套完善的生产流程,具有技术成熟,而且高效、可靠、低噪音及易维护等特点,不仅在镀膜、包装、吸持、制冷、冰箱、空调、照明、彩管、真空热处理、真空脱泡、浇注、成型等工业领域应用广泛,而且在实验室、科研场所,市场的使用量也非常大。本文对于一些常见故障进行总结和原因分析,目的在于使广大用户对旋片式真空泵故障有一个比较系统的了解,从而正确使用和合理维修旋片式真空泵,这将给企业带来可观的经济效益和社会效益。

关 键 词:油封式旋片泵;故障;维修;真空泵;真空系统

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Analysis and Treatment of Common Faults of Oil Sealed Rotary Vacuum Pump

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Abstract: Oil sealed rotary vane vacuum pump has a long history with complete production process, mature technology, the characteristics of high efficiency, reliability, low noise and easy maintenance. It is not only widely used in coating, packaging, absorption, refrigeration, refrigerator, air conditioning, lighting, color tube, vacuum heat treatment, vacuum defoaming, pouring, molding and other industries, but also used in the laboratory and scientific research sites. Its market use is very large. This paper summarizes and analyzes the causes of some common failures, in order to make the majority of users have a relatively systematic understanding of the failure of the rotary vane vacuum pump, so as to correctly use and reasonably maintain the rotary vane vacuum pump. It may bring considerable economic and social benefits to the enterprise.

Key words: oil seal rotary vane pump; malfunction; repair; vacuum pump; vacuum pump system

1 油封式旋片真空泵的结构及原理

常见的油封式旋片真空泵,有皮带传动,也有直连结构,即驱动电机与泵主体直接用法兰连接,泵与电机的轴由弹性联轴器直接连接,冷却方式小型号的一般为风冷,大型号的有风冷和水冷版,利用偏心转子在运转过程中产生的容积变换原理进行抽空,真空泵油在工作中起着冷却、润滑及密封的作用。

由于油封式旋片真空泵的应用广泛,而且使用的工况相对恶劣,出现故障的几率比较高。本文认真总结了常见的故障及处理方法,常见的有:①泵无法启动;②泵达不到极限压强;③泵的

外观图(连接口及控制件)

- 1.注油口
- 2.进气口
- 3.气镇阀
- 4.排气口
- 5.电源接线盒
- 6.放油口
- 7.油位指示器

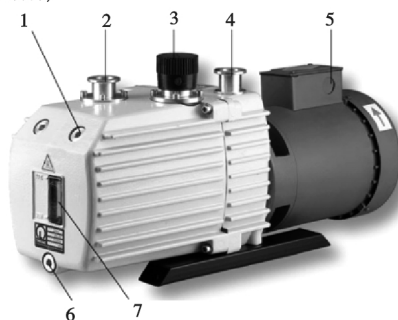


图 1 油封式旋片泵外形结构图

Fig.1 Outline structure of oil seal vane pump

抽速太慢;④泵在运行中温度过高;⑤在真空管道中或被抽容器中发现油;⑥泵的噪音过大;⑦真空泵漏油;⑧电机部分故障。下文根据这些