

## 液压电机叶片泵样机的性能试验 Performance Test of the Prototype of Electric Motor Pump

冀宏 李志峰 王峥嵘 王建森 兰博杰

兰州理工大学

**关键词:** 液压电机叶片泵 电机油泵组 性能试验 噪声 泄漏

**摘要:** 针对研制出的液压电机叶片泵样机,建立了电机泵性能试验系统,获得了样机的输入电量参数、输出液压能参数及内部转子转速和壳体内部压力等参数,得到了液压电机叶片泵样机的转子转速、噪声、功率和效率等随输出压力变化的特性,并与同等功率液压电机油泵组的试验结果进行了对比。与电机油泵组相比,电机叶片泵样机的体积减小50%、轴向尺寸减小61%,噪声降低约7 dB,液压电机叶片泵内部转子转速随输出压力升高而明显下降;同时,试验也发现样机存在内部流道狭窄引起的气泡析出和内部密封不良引起额外泄漏的问题,提出了相应的解决方法,为电机泵的后优化及工业化提供了参考依据。An experimental system was established for the performance test of the developed prototype of electric motor pump. The parameters consisting of the electric power input, hydraulic power output, rotor speed and internal pressure in the electric motor pump were measured. The characteristic of the rotor speed, noise, power and efficiency changing with the outlet pressure of the prototype was obtained. Compared with the traditional hydraulic power unit which has the same power as the prototype, the volume of the prototype was reduced by 50%, the dimension in axial direction shortened 61% and the noise level lowered 7 dB, and the speed of rotor in the prototype decreased apparently with the increased of the output pressure. Furthermore, the bubble separation as a result of the narrow channels and the extra leakage due to the ineffectual seal in the prototype were discussed, and the corresponding solutions were proposed.

[查看全文 \(请使用Adobe Acrobat 6.0版本浏览\)](#) [返回首页](#)

[引用本文](#)