

基于DSP的柴油机缸内压力动态采集系统

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关键词: 柴油机 缸内压力 动态采集 数字信号处理器

摘要: 进行了基于数字信号处理器 (DSP) 的柴油机缸内压力动态采集的研究。提出了缸内压力动态采集、数据处理、数据通讯方法。设计了缸内压力动态采集系统的硬件、软件, 进行了动态采集系统的采集性能和稳定性试验。试验结果表明, 基于DSP的缸内压力动态采集系统能满足柴油机工作要求。 In order to meet the demand of dynamic acquisition in diesel engine, study on dynamic acquisition of cylinder pressure based on digital signal processor (DSP) was conducted. The acquisition method and data process, data communication of dynamic acquisition were proposed, partial acquisition area between 50° CA (crank angle) before top dead center (TDC) and 100° CA after TDC has been presented. Digital signal processor (DSP) and high speed USB (universal serial bus) were introduced into dynamic acquisition, hardware and software for dynamic acquisition system have been designed. The bench test for acquisition performance and stability of this system was finished. Test result showed that dynamic acquisition system of cylinder pressure based on DSP could meet the requirement of diesel engine.

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