

论文

高压共轨柴油机喷油量修正及匹配

王洪荣<sup>1</sup>, 张幽彤<sup>1</sup>, 王军<sup>2</sup>, 丁晓亮<sup>1</sup>

1. 北京理工大学机械与车辆工程学院, 北京 100081; 2. 装甲兵工程学院机械工程系, 北京 100072

摘要:

研究高压共轨柴油机喷油量的修正和油量匹配策略, 分析喷油器加工精度差异、驱动电路差异和压力波动等对喷油量一致性的影响; 采用脉宽补偿和驱动电路反馈的方法进行喷油量修正; 根据不同工况, 设计了共轨柴油机油量匹配策略; 采用变步长分配标定节点, 提高了匹配效率; 在发动机台架上进行油量修正效果测试和发动机油量MAP匹配. 试验结果表明: 油量MAP满足发动机的运行需求, 修正策略有效地改善了喷油的一致性.

关键词: 高压共轨 喷油量 修正 匹配

The fuel quantity correction and calibration of the high pressure common-rail diesel engine

WANG Hong-rong<sup>1</sup>, ZHANG You-tong<sup>1</sup>, WANG Jun<sup>2</sup>, DING Xiao-liang<sup>1</sup>

1. School of Mechanical and Vehicular Engineering, Beijing Institute Technology, Beijing 100081, China; 2. Department of Mechanical Engineering of Academy of Armored Forces Engineering, Beijing 100072, China

Abstract:

The correction methods and matching strategy of fuel quantity were studied with the high pressure common-rail diesel engine. The influences of processing precision difference of the individual injector, diversity of the injector driven current and the pressure fluctuation affecting the coherence of the injection quantity were analyzed. The injection fuel quantity was corrected by feed-back control of the driven current and compensation of the energizing pulse. By analyzing the engine operation point, the matching strategy of fuel quantity on common-rail diesel engine was designed. The fuel quantity MAP was calibrated with an asymmetric step according to the frequency and importance of the engine operation. Finally, experiments were done on a test bench to verify the correction strategies. Experimental results show that the control and compensation strategies could improve the coherence of the injection fuel quantity.

Keywords: high pressure common rail injection quantity corrections matching

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作者简介:

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