

题 目：汽车发动机曲轴加工工艺与夹具设计

摘要

发动机中的曲轴是最重要的，汽车发动机的质量和寿命被曲轴品质好坏所影响。发动机的最大负荷和所有输出功率由曲柄承受，承受弯曲力矩和扭矩的方向不断变化，承受长时间高速运转的磨损。因此，曲轴的刚度要达到最大，耐疲劳性也要最好。发动机曲柄轴在往复直线运动转换为旋转运动中，将化学能转换成机械能。本次论文是对发动机曲轴处理技术的分析和设计。过程计划是过程计划的重要阶段，是过程计划的总体设计。工艺路径是否合理，不仅影响处理质量和生产效率，而且影响工人、机器、工艺设备、生产现场的合理利用，影响生产成本。这个设计是考验和整合我们所学的专业知识，理解和学习那些在工作中使用但在学习中没有接触的知识。本设计参考了大量书籍和行业数据，了解了行业发展进程和一些先进的制造技术，增加了专业知识，拓展了职业生涯，对未来的研究和生活产生了比较重要的影响。

关键词： 发动机 曲轴 加工工艺 夹具设计

Abstract

The crank shaft bears the maximum load and all the output power of the engine, the direction of bending moment and torque is constantly changing, and it bears the wear of high-speed running for a long time. The function of engine crank shaft is to convert the reciprocating linear motion of piston into rotary motion by connecting rod, so as to realize the output of engine from chemical energy to mechanical energy. This subject is the analysis and design of engine crankshaft processing technology. Whether the process path is reasonable or not will not only affect the treatment quality and production efficiency, but also affect the reasonable utilization of workers, machines, process equipment and production

site, and affect the production cost. This design is to test and integrate the professional knowledge we have learned, understand and learn the knowledge used in work but not touched in learning. This design references a large number of books and industry data, understands the industry development process and some advanced manufacturing technology, increases professional knowledge, expands career, and has a relatively important impact on future research and life.

Keywords: Engine crankshaft Processing technology Fixture design

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