

<<机械制造专业英语>>

图书基本信息

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内容概要

本书为高职高专教材，是根据“高职高专机械类专业人才培养目标及基本规格”的要求编写的。全书内容包括纯金属的结构、凝固机理、二相合金、钢及热处理、铸造生产、锻造、冲压和轧制、轴和联轴器、紧固件和弹簧、机械零件的强度、滚动轴承、机构机械设计基础、机械设计概论、材料选择、机床及机械加工、金属切削刀具、钻模与夹具、尺寸公差与表面粗糙、质量与检测、计算机与制造业、计算机辅助编制工艺规程、数字控制、工业机器人及拉伸试验等方面的英文资料。

本书可作为高职、高专、成人高校及本科院校举办的二级职业技术学院机械类专业英语教材，也可作为从事机械设计和机械加工人员的阅读材料。

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章节摘录

Lesson 8 Shafts and Couplings Virtually all machines contain shafts. The most common shape for shafts is circular and the cross section can be either solid or hollow (hollow shafts can result in weight savings).

Rectangular shafts are sometimes used, as in screwdriver blades, socket wrenches and control knob stems. A shaft must have adequate torsional strength to transmit torque and not be overstressed. It must also be torsionally stiff enough so that one mounted component does not deviate excessively from its original angular position relative to a second component mounted on the same shaft. Generally speaking, the angle of twist should not exceed one degree in a shaft length equal to 20 times that of the diameter. Shafts are mounted in bearings and transmit power through such devices as gears, pulleys, cams and clutches. These devices introduce forces which attempt to bend the shaft; hence, the shaft must be rigid enough to prevent overloading of the supporting bearings. In general, the bending deflection of a shaft should not exceed 0.01 in. per ft. of length between bearing supports. In addition, the shaft must be able to sustain a combination of bending and torsional loads. Thus an equivalent load must be considered which takes into account both torsion and bending. Also, the allowable stress must contain a factor of safety which includes fatigue, since torsional and bending stress reversals occur.

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