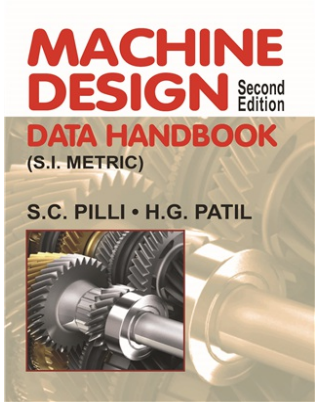
Book Information Sheet



Machine Design Data Handbook: (S.I. Metric), 2/e

S.C. Pilli & H.G. Patil

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About the Book

Machine Design Data Handbook is meant for Mechanical, Production and Industrial Engineering branches. The book contains data in the form of equations, tables and graphs. The first chapter deals with the basic equations derived in mechanics of materials and helps in determining stresses in machine elements under various loading situations. The second chapter contains data of mechanical properties of various engineering materials used for the machine elements. The third chapter deals with the various theories used for predicting failures under the static and fluctuating loads. It also deals with the methods used for estimating the life to failure under variable loadings. The chapter on fits and tolerances is intended to help in specifying the manufacturing tolerances. These chapters are useful in solving any general design problems. The remaining chapters are dedicated to individual machine elements. The standard procedures adopted for each machine is presented in individual chapters. A new chapter "Vibrations" has also been added in this edition. The standards prescribed by ISI (BIS)< ISO and AGMA Standards organisations are included.

The S.I. system of units has been adopted through the book. A short list of conversion factors for important quantities is given in the beginning. A complete list of conversion factors for the various physical quantities is given in the Appendix at the end of the book. These are useful in solving problems in Metric units also. Thus, the book is useful for both the systems of units.

The book is intended to train the students, teachers and practicing engineers for solving and preparation of working design projects.

Salient Features

- Presents the data for well-established design procedure for machine elements, classified into formula tables and charts.
- Has a list of symbols and equations at the beginning of every chapter.
- Profusely illustrated with charts/graphs and geometrical and sectional diagrams
- The SI system of units is followed throughout the book; however conversion factors are also provided (for MKS system).
- Includes the standard prescribed by ISI (BIS)/ ISO and AGMA.
- A new chapter on “vibrations” has been added in this edition.

Table of Contents

Stress Analysis/ Properties of Materials/ Failure-Prediction/ Design of Shafts/Keys, Pins and Cotters/ Couplings, Clutches and Brakes/ Riveted Joints/ Welded Joints/ Threaded Joints and Power Screws/ Springs/ Thin Cylinders and Cylinder Heads/ Thick Cylinders and Rotating-Disks/ Fits and Tolerances/ Journal Bearings/ Antifriction Bearings/ Worm-Gears/ Belt Drives/ Rope Drives/ Hoisting and Power Chain/ I.C. Engine Parts/ CAMS/ Curved Members/ Packing and Seals/ Appendices/ Appendix A – Preferred Numbers/ Appendix B – Metric to SI Conversion Factors/ Bibliography/ Index.

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