


2ND
EDITION

Handbook of **Mechanical Engineering**

Dr. SADHU SINGH

A cluster of interlocking metal gears of various sizes, set against a blue background with a large gear silhouette. The gears are rendered in a metallic, reflective style, with some showing highlights and shadows. The background features a large, semi-transparent gear silhouette that frames the central gear cluster.

S. CHAND

**Handbook of
Mechanical Engineering**

HANDBOOK OF MECHANICAL ENGINEERING

**For the Students of B.E./B.Tech. (Mechanical Engineering). Also Useful
for Engineering Services / Civil Services / Forest Services / GATE /
State Services and Other Competitive Examinations**

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*Dedicated to
the
sweet memory
of my wife
Smt. Manjit Kaur
who passed away
on 20th December, 2009
after a great struggle with life*

PREFACE TO THE SECOND EDITION

I am pleased to present the Second Edition of the book. This edition is revised keeping in mind the requirements of the students. In this edition, several solved examples and questions have been incorporated to reinforce the students' understanding of the subject matter.

I hope this edition would be more useful to the students as well as to the aspirants of various competitive examinations such as Indian Engineering Services, Civil Services, Forest Services, GATE, State Services, etc.

I am thankful to the management and the editorial team of S.Chand & Company Pvt. Ltd., New Delhi for help and support in publication of this edition.

Any comments and suggestions for the improvement of the book will be gratefully acknowledged.

Dr. Sadhu Singh

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PREFACE TO THE FIRST EDITION

It is another attempt to place before the candidates, in the book form, the full contents of the subject of **Mechanical Engineering**. It was a long cherished dream of the author to bring out such a book as per the wishes of his late wife, Smt. Manjit Kaur. She has been the driving force for the last about forty-one years for writing.

The book contains 28 chapters. The subject matter has been divided into five major areas of Engineering Mathematics, Design Engineering, Production Engineering, Industrial Engineering, and Thermal Engineering. Assertion and Reason, Short Answer Type Questions and Glossary of Terms in Mechanical Engineering have been covered in the last three chapters.

The book has been written as per the syllabi of Engineering Services, Civil Services, Forest Services, GATE, State Services, and other Competitive Examinations. It is hoped that the book shall be quite useful to the candidates preparing for these examinations.

The moral support received from Mrs. Narinderpal Kaur (my daughter-in-law) and grandchildren Kanupreet and Amitoj is praiseworthy.

The support and cooperation received from the management and the editorial team of S. Chand & Company Pvt. Ltd., New Delhi is highly acknowledged.

Suggestions for the further improvement of the book are welcome and shall be duly acknowledged.

Dr. Sadhu Singh

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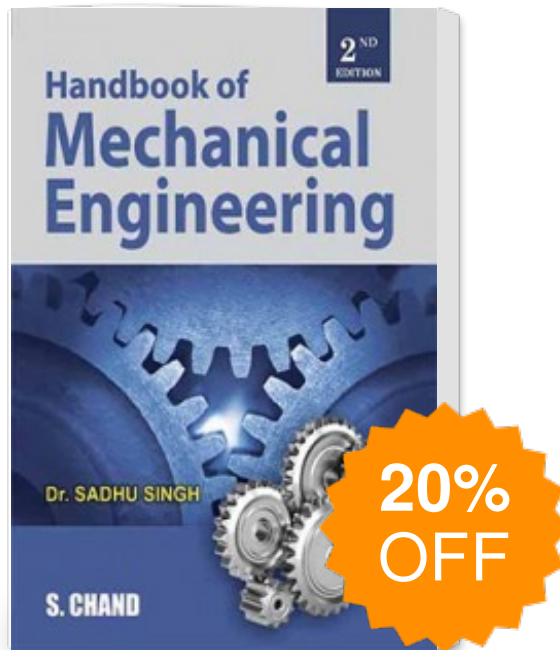
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