

The Lathe



TECHNICAL
FUNDAMENTALS

The Lathe

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ASIA PUBLISHING HOUSE

Bombay - Calcutta - New Delhi - Madras - Lucknow - Bangalore

The lathe is among the oldest machines constructed by man to facilitate work. Today lathes are used both in the engineering industry for small scale and large-scale production of parts of machines and in repair shops of every description. The present stage of engineering calls for lathes and other machine tools which operate with utmost precision. In the course of the past 50 years, the variety of shapes which can be machined on a lathe has necessitated the development of special lathe designs for certain tooling processes. Besides improvements in the common general purpose lathe, also known as engine lathe. Further, large-scale production of parts and the automation of the processes of manufacture have exerted a decisive influence on the technical improvement of lathes.

This book is devoted to the reader who wishes to familiarize himself with design and mode and cycles of operation of lathes. This is of fundamental importance, as seen in the light of the present stage of engineering and the exacting demands on the whole manufacturing process in the metal-working industry.

To facilitate the grasping of these fundamentals, the principles underlying the turning process and the turning tool had to be explained in brief. This introductory part is followed by a detailed description of the design of the engine lathe and the turret lathe, the most widely-used types of lathes, as well as of their units of construction and elements. The last part of the book offers a clear survey of the most important special designs and single-purpose lathes. Besides a description of the various lathe types, hints as to their rational use and performance characteristics are also given in this part.

This book is intended for people who wish to qualify for operating a lathe. It also applies to experienced turners because even an expert lathe operator will only be able to do a job economically and with precision if he knows the least detail of the machine in his care. The work asked of a turner is very versatile and requires a comprehensive training. That is why a separate book of our series of publications on TECHNICAL FUNDAMENTALS will be devoted to this subject.

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