

LINOTYPE MACHINE PRINCIPLES

The Official Manual

Linotype

MACHINE

PRINCIPLES



MERGENTHALER
LINOTYPE COMPANY
Brooklyn, New York

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in Textype and Memphis Medium

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INTRODUCTION

The Official Linotype Manual

TO MEET THE varying needs of students, operators, and machinists, this book has been planned as a *reference manual* on the principles of Linotype construction, operation, and maintenance. If it were a text book then its content would have been divided into suitable lesson units, each supplemented by questions for educational purposes. But we know that schools differ in their teaching methods, based on available time and the purpose of their courses of study. Therefore this manual has been prepared for general use. It includes, simply but thoroughly, the essential technical data on the Linotype, arranged in the sequence of the basic mechanisms, parts and functions of the machine.

During more than a half century, in which the use of the Linotype has spread throughout the world, its operation and maintenance have become distinctive trades in themselves. Men (and women, too) have approached these occupations by various routes. Some have studied the Linotype at the Factory School or in one of the many schools which give varying emphasis to this special field. Many have acquired for themselves, sometimes with the aid of friendly operators and machinists, a practical working knowledge of the machine. Still others have been limited by controlling circumstances to the mere ability to set straight matter, with little or no knowledge of machine changes, adjustments and maintenance. The needs of all these groups have been considered in this book and in its companion work *Linotype Keyboard Operation*, which deals with operating technique and methods of producing the endless variety of type composition which can be obtained from the Linotype.

So that all who work with the Linotype may find this book useful and understandable it was prepared under the close supervision of an editorial committee comprising engineers and technicians on the Company's staff at Brooklyn and a plant machinist of many years' experience in the maintenance of newspaper and commercial Linotype batteries. The text and illustrations have been independently read and checked by several others who have contributed, as critical reviewers, the experience of operators, machinists, printers, and teachers. We may thus hope that the methods of writing and illustration have been kept sufficiently simple and brief for the book to fulfill its purpose as a manual of Linotype mechanism.

The first chapter is a general description of the Linotype and how it works, entitled appropriately "The Big Scheme of Simple Operation." To meet frequent demands for such a primer this chapter has been separately printed in pamphlet form, with added classifications of current models of Linotypes. Copies may be had without charge on request to any Linotype agency.

From the introduction to the instruction book which is superseded by this manual we quote a still-pertinent comment: "This book is full of troubles so that troubles may never occur. An ancient philosopher said: 'My life has been full of troubles, most of which never happened.' So that the troubles enumerated in this book may never happen under careful operation and maintenance, the cause, effect, and remedy are given in full detail. To the casual reader this may give the impression that the operation of the Linotype is attended by many difficulties. It is significant therefore that, in all parts of the world, Linotypes are in successful use under widely varying conditions, some of the machines having been erected, operated and maintained by persons utterly without previous training on the Linotype (although we do not recommend such an approach)."

Very early in the history of the Linotype it became essential to develop a system for naming the parts of the machine so that these names could be used in the Factory and for ordering the different parts. The scheme adopted, and used ever since, is that commonly used by manufacturers of machines having many parts. The first word designates the main part of the machine to which the part belongs, and the descriptive words follow in order so as to designate the part with the utmost clarity. Thus it happens that the smallest parts may have the longest names. A small bracket on the machine is called the "vise jaw, left-hand, adjusting rod locking pin lift bracket." Despite the length of this name it clearly describes and locates the part, needing only a reference to the model for which it is intended to make a clear specification.

However, to simplify records and ordering, each part also has a number. Thus the bracket named above is numbered E-1311. Many of the parts in the several models of Linotypes are identical in name and part number. Sometimes an altered purpose changes the part and therefore its number. The proper names and part numbers can be obtained from parts catalogs issued by the Company, and *these catalogs must be used in ordering parts*. Part numbers have been omitted from this book to avoid possible confusion.

Realizing that, through the years, Linotype operators and machinists have sometimes adopted varying practices in adjustment and maintenance, we have established in this manual the standards which are officially approved and recommended by the Company. It is hoped and urged that these official standards be carefully studied and universally observed. If they are used throughout the trade, and are wholly embodied in all courses

of instruction, the resulting uniform, standard practices will contribute substantially to improved efficiency.

We have often emphasized the fact that the Linotype is not an automatically foolproof mechanism. It is a tool, and in the hands of a competent operator its product is recognized as equal or superior to all other forms of type composition. In addition to this factor for typographic superiority, the mechanical accuracy and printing quality of the Linotype product are similarly dependent on the normal, careful maintenance methods outlined in this manual.

Modern developments have repeatedly extended the scope and versatility of the Linotype. These added facilities naturally require added mechanisms whose use and maintenance may not be familiar to many in the field, and this manual is intended to assist in the continual process of modernization (in machines and in their users) upon which real growth of the industry depends. Such modern features as the Self-Quadder, the Micro-Therm electric pot, the Six-Mold Disk, Duplex Display matrices, the "Two-in-One" text and display machines, the Super-Display machines—all require proper understanding in their use. Plant executives seek operators and machinists who have competent working knowledge of these developments in the type-setting art. So we hope that this book may be doubly useful in equipping its readers to hold better jobs and in making Linotypes more productive.

Mergenthaler Linotype Company