



MACHINE TOOLS

Specification, Purchase, and Installation

RUSSELL GAMBLIN

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Machine Tools

Specification, Purchase, and Installation

Russell Gamblin



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Cataloging-in-Publication Data is on file with the Library of Congress.

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Machine Tools: Specification, Purchase, and Installation

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1 2 3 4 5 6 7 8 9 0 QVS/QVS 1 2 0 9 8 7 6 5 4 3

ISBN 978-0-07-181222-1

MHID 0-07-181222-9

The pages within this book were printed on acid-free paper.

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Machine Tools



About the Author

Russell Gamblin is currently the Maintenance and Facilities Manager at Mitsubishi Power Systems, Inc. Previously, he was a Project Engineer at Mitsubishi Power Systems and Sr. Maintenance and Facilities Engineer at Siemens Energy, Inc. Within the past three years, Mr. Gamblin has been a part of two large new factories additions and relocations with combined costs of \$1 billion.

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Preface

In this book, I offer the extensive knowledge gained from my years of purchasing, installing, and maintaining machine tools and equipment.

First, you will find a systematic approach to the specification and procurement phase. You will learn how to weed out the machine tool suppliers you don't need, and you will learn how to develop a step-by-step plan for selecting the *right* machine tool for your company.

As we move through the text, we will go deeper into the specification and build of the machine tool's foundation. You will become familiar with the cardinal rule that one should *never* build the foundation exactly to the machine tool supplier's specifications. Rather, the machine tool's foundation must fit your facility *first*. Functionality comes second. Build the foundation that fits the specific machine tool *and* the environment in which it will operate.

This book isn't about theoretical formulas associated with machine tools. Rather, it offers real-world examples of what does and does not work. It's full of stories that illustrate things you should and shouldn't do—stories that come from my own hands-on experience.

I have heard so many horror stories in my time—stories of bad machine tool purchases and the many problems stemming from poorly planned and poorly constructed foundations. It became clear to me that what was needed was a book to provide sound, time-tested knowledge to people in the machine tool industry who could truly benefit from it.

This book offers, in clear and concise terms, answers to the multitude of questions that I have had to find answers for throughout my own career. It is a user-friendly resource for the

novice as well as the seasoned professional. However, it will prove most beneficial to those who are project leaders and members of the project team tasked with specifying, purchasing, and installing the new machine tool.

Writing this book has been both humbling and rewarding. It is not something I could have accomplished alone. Therefore, I would like to thank the following people for their invaluable contributions to the completion of this work:

I thank my parents, Russell and Sharon Gamblin, who taught me that working hard and staying focused will get me what I want in life, and not to concern myself with what others may think.

I would like to thank Jack Bradshaw, Bill Carriker, Troy Starr, Bruce Edwards, and all the maintenance and facilities guys at Siemens and the old Westinghouse facility in Charlotte, North Carolina. Also I would like to mention Dane Sebastian and David Mazelin from Siemens and Westinghouse who helped me understand that you must keep the purchasing department involved in the process. The purchasing department will likely keep you out of trouble after the machine tool is installed and will help you understand the terms and conditions of the purchasing contract.

I would especially like to thank Steve Bowman and Mike Mundy of Siemens—two people whom I lived with in the trenches of the daily grind of the machine tool industry, two people who rarely get the credit they deserve.

I would also like to thank Greg Martin, Sam Suttle, and Jack Daniels for taking a chance on me at Mitsubishi Power Systems in Pooler, Georgia. They allowed me to do what I thought was needed to properly install some of the largest machine tools in the world, and they backed me when most other people thought I was crazy.

Most of all, I want to thank my wonderful wife, Amy, and two sons, Russell Ray Gamblin, III (Trey), and Parker Gamblin. They are the reason I live today and why I continue to succeed in life.

Thanks also to writer Clark Byron for helping me organize my thoughts and convey them to the reader in the most accessible terms.

Russell Gamblin

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CHAPTER 1

Budget Phase

