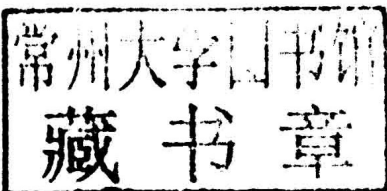


Autodesk®
**Inventor® 2014 and
Inventor LT™ 2014**
ESSENTIALS

AUTODESK® INVENTOR® 2014 AND INVENTOR LT™ 2014

ESSENTIALS

Thom Tremblay



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AUTODESK® INVENTOR® 2014
AND INVENTOR LT™ 2014

ESSENTIALS

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*To the code writers, product developers, product managers, and program managers who created
Inventor and made a difference: thank you.*

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ABOUT THE AUTHOR

Thom Tremblay is a Strategy Manager for Autodesk Education and has worked with hundreds of schools and companies to help them understand how Inventor can help them with their designs. He is an Autodesk Inventor Certified Professional, an Autodesk Certified Instructor, and an Autodesk Certification Evaluator, and he has been working with Inventor for more than 14 years and with other Autodesk products for more than 27 years. He has used Autodesk software to design everything from cabinets and castings to ships and video monitors. He has close ties to the Inventor community; is a frequent speaker at colleges, universities, and training centers; and presents at Autodesk University annually.

INTRODUCTION

This book is designed to be a direct, hands-on guide to learning Inventor by using Inventor. The book includes lessons for absolute beginners, but experienced users can also find exercises to show them how tools they're not familiar with work.

Nearly all of the over 200 exercises can be started from an existing file, so you need to do only those exercises that will help you most.

Who Should Read This Book

Autodesk Inventor 2014 and Inventor LT 2014 Essentials is designed to meet the needs of the following groups of users:

- ▶ Professionals who use 2D or 3D design systems and want to learn Inventor at their own pace
- ▶ Professionals attending instructor-led Inventor training at an Autodesk Authorized Training Center
- ▶ Engineering and design students who need to learn Inventor to support their education and career

What You Will Learn

Autodesk Inventor 2014 and Inventor LT 2014 Essentials covers the most common uses of the tools in Autodesk Inventor® and Inventor LT®. Not every option is covered, but you will easily understand the options once you learn to use the primary tool.

The first nine chapters cover the core of Inventor in a way that steps the reader through creating drawings, parts, and assemblies in phases so there is a better opportunity to absorb the concepts.

The second portion of the book consists of four chapters that focus on tools and workflows specific to types of design and visualization. I recommend readers complete the work in these chapters to learn alternative workflows that may not be an obvious fit for their design needs but may help them nonetheless.

What You Need

To perform the exercises in this book, you must have Autodesk Inventor 2014 or Inventor LT 2014.

FREE AUTODESK SOFTWARE FOR STUDENTS AND EDUCATORS

The Autodesk Education Community is an online resource with more than 5 million members that enables educators and students to download — for free (see the website for terms and conditions) — the same software used by professionals worldwide. You can also access additional tools and materials to help you design, visualize, and simulate ideas. Connect with other learners to stay current with the latest industry trends and get the most out of your designs. Get started today at www.autodesk.com/joinedu.

While offering a somewhat limited feature set, Inventor LT is a flexible and powerful tool focused on the core user needs of part modeling and 2D drawings. Inventor LT does not use a project file.

Autodesk Inventor LT is best aligned with Chapters 1–4 and 6–8 but is capable of doing some of the functions covered in Chapters 10 and 11. In cases where an assembly is used for an exercise on visualization you can use a part file instead.

To make sure that your computer is compatible with Autodesk Inventor 2014, check the latest hardware requirements at www.autodesk.com/inventor.

What Is Covered in This Book

Autodesk Inventor 2014 and Inventor LT 2014 Essentials is organized to provide you with the knowledge needed to master the basics of Inventor.

Chapter 1: Connecting to the Interface This chapter presents the interface, the basics of working with Inventor, and how to become productive with Inventor.

Chapter 2: Introducing Parametric Sketching The fundamental element of a 3D part is a 2D sketch using parametric dimensions to control its size. This chapter shows how to create these sketches.

Chapter 3: Introducing Part Modeling Building parametric solid models is essential to the effective use of Inventor. This chapter introduces the tools you need to build basic parts in Inventor.

Chapter 4: Creating 2D Drawings from 3D Data Creating 2D documentation of your designs is critical. This chapter presents the basic tools for placing views and dimensions in your drawings.

Chapter 5: Introducing Assembly Modeling Most products are made of many parts. Assembly tools help you control the position of the components relative to one another.

Chapter 6: Exploring Part Modeling In this chapter you dive deeply into the structure of 3D part models and learn techniques for refining your control over features.

Chapter 7: Advanced Part Modeling Advanced geometry requires more advanced modeling tools. Learn how to use advanced fillets, lofts, and other tools that create the complex shapes you need.

Chapter 8: Creating Advanced Drawings and Annotations This chapter focuses on creating and editing more complex drawing views and adding finishing touches to your drawings.

Chapter 9: Advanced Assembly and Engineering Tools An assembly is more than a group of parts. Inventor features many engineering-based tools that work in the assembly. This chapter also describes tools to help you control complex assemblies.

Chapter 10: Creating Sculpted and Multibody Parts Plastics have a number of common features that make them easier to assemble. These features are developed using specialized tools in Inventor.

Chapter 11: Working with Sheet Metal Parts The process of manufacturing sheet metal parts heavily influences how they are designed in Inventor. Creating material styles makes it easy for you to change the components by changing the style.

Chapter 12: Building with the Frame Generator Using traditional solid modeling tools to build metal frames is arduous and time-consuming. The Frame Generator tools shortcut the process and make even complex frames easy to design.

Chapter 13: Working in a Weldment Environment A weldment is a combination of an assembly and a part model. Inventor puts the needs of manufacturing first when defining a weldment, saving you time.

Appendix: Autodesk Inventor Certification Show the world that you know Inventor by becoming an Autodesk Certified User, Associate, or Expert. This appendix will help you find the resources in the book to get certified.

Visit the book's website at www.sybex.com/go/inventor2014essentials for this additional content:

Bonus Chapter 1: Customizing Styles and Templates Using standards in manufacturing improves quality and efficiency. The same is true for Inventor. This chapter helps you understand the options that are available for building your own design standard.

Bonus Chapter 2: Working with Non-Inventor Data Inventor has the ability to import and export data to and from nearly any other design system. This chapter helps you understand what options you have in working with that data.

Bonus Chapter 3: Automating the Design Process and Table-Driven Design If you have repeatable design processes and products that share a lot of common features using tables can greatly improve productivity. Using rules to create new components that comply with production capabilities gives you even more flexibility.

Bonus Chapter 4: Creating Images and Animation from Your Design Data Sharing images and animations made from your designs can help others understand how your designs are created and understand their value. This chapter guides you through tools for sharing your work with others.

Exercise Data To complete the exercises in *Autodesk Inventor 2014 and Inventor LT 2014 Essentials*, you must download the data files from www.sybex.com/go/inventor2014essentials.

Please also check the book's website for any updates to this book should the need arise. You can also contact the author directly by email at inventor.essentials@outlook.com.

The Essentials Series

The Essentials series from Sybex provides outstanding instruction for readers who are just beginning to develop their professional skills. Every Essentials book includes these features:

- ▶ Skill-based instruction with chapters organized around projects rather than abstract concepts or subjects.
- ▶ Suggestions for additional exercises at the end of each chapter, where you can practice and extend your skills.
- ▶ Digital files (via download) so you can work through the project tutorials yourself. Please check the book's web page at www.sybex.com/go/inventor2014essentials for these companion downloads.