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# SolidWorks®

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**Greg Jankowski**

Customer Satisfaction Manager,  
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***SolidWorks For Dummies,  
2nd Edition***

**by Greg Jankowski and  
Richard Doyle**



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# About the Authors

**Greg Jankowski** is the Customer Satisfaction Manager at SolidWorks corporation. He is a veteran (translation: been doing this longer than he cares to admit) in the CAD industry with experience using SolidWorks, ProEngineer, and Computervision CAD systems in a variety of mechanical design and developmental positions. Greg was the Principal at CIMCO, a SolidWorks Solution Partner since SolidWorks 95.

Greg is the author of the book *SolidWorks for AutoCAD Users* and the e-book *Exploring SolidWorks*. In addition, he authored and developed the SolidWorks workstation benchmark. He is also the author of the *Cadalyst* magazine column “Solid Thinking” and is a regular columnist for the *SolidWorks Express* newsletter.

**Richard Doyle** is the User Community Coordinator at SolidWorks, responsible for helping SolidWorks user groups grow and thrive. A SolidWorks user since 1997, Richard has 29 years of experience in the field of mechanical drafting and design, including 22 years spent working with CAD. As one of the original founding members of the SolidWorks User Group Network (SWUGN) committee, Richard has spent a good deal of time helping to keep SolidWorks users informed and educated and enjoying the benefits of working with 3D CAD.

# Dedications

**Greg Jankowski:** This book is dedicated to the three women in my life, my wife Sandy and daughters Alexis and Kaitlyn, who continue to put up with me and my crazy projects. I appreciate their patience, love, and understanding.

I also want to dedicate this book to all the hard-working folks at SolidWorks. It continues to be my pleasure to work with some of the best, hardest-working, and brightest folks in the industry.

**Richard Doyle:** This book is dedicated to the SolidWorks User Group Network (SWUGN) committee and all the SolidWorks user group leaders. These hard-working volunteers spend a lot of their own time making sure that fellow SolidWorks users have an outlet for networking and learning and for sharing information about SolidWorks and mechanical engineering.



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# Introduction

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I started using SolidWorks when the first version, SolidWorks 95, came out on the market. It's amazing to see how far solid modeling has come since then. Working within a 3D environment has transformed the way I create, iterate, and document a design.

One reason I wrote this book is to help boil down much of the material that's out there and focus on not only what I believe to be important from my design experience but also how I think the software should be used.

Although many things are similar to what was done ten years ago, many things have changed. Even some of the saltier veterans out there can gain something from the ideas presented within this book.

SolidWorks is becoming a more mature application, and instead of getting harder to use, it makes modeling easier and, quite frankly, more fun.

One concept that recurs throughout this book is the ability of SolidWorks to reuse design information, saving you from having to do things manually. For example, SolidWorks can use the information in your part or assembly model to create manufacturing drawings automatically.

This way of creating products saves time and produces better results. *SolidWorks For Dummies*, 2nd Edition, shows you how.

Enjoy your journey with SolidWorks. You'll love the experience.

## About This Book

This book isn't designed to be read from cover to cover, although it can be. *SolidWorks For Dummies* is designed as a reference book that you can use at any time.

This book isn't meant to be a complete reference for SolidWorks. If it were, you probably wouldn't want to drop it on your foot. Instead, I have focused on the key and commonly used elements of SolidWorks.

## Conventions Used in This Book

I use the following conventions throughout this book:

- ✓ I use the term *document* to refer to drawing, part, or assembly files in SolidWorks.
- ✓ The list of items across the top of the SolidWorks interface comprises the main menu. Each item on the main menu also has a hidden list, or *pull-down* menu. Whenever I want you to choose a series of commands

from the menu, I use the phrasing “Choose File⇒Save,” for example.

## What You’re Not to Read

Sometimes this book can be a little bit technical. But because I’m a nice guy, I always warn you about the stuff you can skip, by planting a handy Technical Stuff icon nearby. Although the information next to this icon is interesting, you don’t have to read it. The same holds true for sidebars, which are the gray boxes that you see scattered throughout the book. Although the information in the sidebars is interesting, it’s just extra information that’s nonessential to understanding the topic at hand.

## Foolish Assumptions

When I wrote *SolidWorks For Dummies*, I assumed very little about you — just that you’re somewhat familiar with a computer and the Windows operating system. But I didn’t assume that you have any earlier SolidWorks experience.

If you’re not comfortable working with your computer, you may want to pick up a copy of *PCs For Dummies*, by Dan Gookin (Wiley), which walks you through the basics.

I also assume that you have a slight CAD system background. I counted on your having a basic knowledge

of geometry, lines, circles, and points, for example. I don't, however, assume that you can create these objects.

One other assumption I make is that you have some experience in engineering or design or that you're pursuing a career in a related field.

# How This Book Is Organized

This book has five major parts. Each part contains several chapters, and each chapter contains several sections. You can read any section without reading the entire book or even without reading earlier sections within that same chapter. Here's what you find in each part:

# **Part I: Beginning the SolidWorks Journey**

This part introduces SolidWorks and 3D design. You find out about the user interface, SolidWorks file types, and system setup. I also highlight the new features in SolidWorks 2008.

## **Part II: Design Intent and the Virtual Prototype**

This part contains the “beef” of the book. In this part, I talk about creating sound, robust 2D sketches and examine design intent. (Do what I mean, not what I sketch!) I also talk about the many ways to design and model a part and the virtual prototype.



## **Part III: The Devil's in the "Drawing" Details**

Drawings are a necessary part of the manufacturing process. In this part of the book, I talk about how SolidWorks uses information captured in the model to create drawings automatically. I also cover several other SolidWorks drawing features that make your life easier.

# **Part IV: Playing Nicely with Others (And Picking Up Your Toys)**

If you can't find anything on your desk, this chapter may be a tough read. This part focuses on managing and sharing information with other team members so that your projects are more effective.

# Part V: The Part of Tens

The Part of Tens provides examples, tips, and references for SolidWorks. You discover how you can become more proficient in SolidWorks, as well as how you can reuse design information and extend the capabilities of SolidWorks. Lastly, you find out about resources in the vast SolidWorks community.

## About the CD

The CD included with *SolidWorks For Dummies* contains a product demo and add-on solutions. For more information on the CD, see the “About the CD” appendix, at the back of this book.

## Icons Used in This Book

Throughout this book, I use icons to flag information. Some icons mark topics that are useful down the line, whereas others warn you of geek topics ahead.

Here’s what each icon means:



This icon flags useful tips and insight into the current topic. Read these tips carefully because they can save you time and effort.



Think of this icon as a message taped to your forehead. It serves as a gentle reminder to help reinforce a concept or an idea.



This icon says “Beware — potential problems lie ahead.” To steer clear of trouble, pay close attention to the text that this icon flags.



This one is for the technogeeks out there. (I number myself as one.) If you get bored easily, skip this text.

## Where to Go from Here

If you’re ready to get started, turn the page and keep reading or, better yet, review the table of contents or index to find topics that interest you. No matter which approach you choose, you’re well on your way to becoming a SolidWorks user. Creating products in 3D is a fun and effective way to design. Enjoy!

# Part I

## Beginning the SolidWorks Journey

The 5<sup>th</sup> Wave

By Rich Tennant



"I couldn't say anything. They were in here with that program we bought them that encourages artistic expression."

**In this part . . .**

**B**eginning the journey into 3D can seem daunting. It's not that bad — honest. In fact, it can be fun. This part introduces you to SolidWorks. You find out about some of the new features in SolidWorks 2008 as well as how to set up SolidWorks before you start your first design project. You also delve into the topics of design layout and intent.