

SolidWorks[®]
FOR
DUMMIES[®]
2ND EDITION

by **Greg Jankowski and Richard Doyle**



Wiley Publishing, Inc.

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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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Contents at a Glance

<i>Introduction</i>	1
<i>Part I: Beginning the SolidWorks Journey</i>	7
Chapter 1: Getting to Know (And Love) SolidWorks	9
Chapter 2: Taking Control of SolidWorks	19
Chapter 3: Building Blocks for the Virtual Prototype	43
<i>Part II: Design Intent and the Virtual Prototype</i>	57
Chapter 4: Do What I Mean, Not What I Sketch	59
Chapter 5: Making Better Parts	83
Chapter 6: Putting It All Together	115
<i>Part III: The Devil's in the "Drawing" Details</i>	151
Chapter 7: Creating Drawings	153
Chapter 8: Speeding It Up: Automating the Drawing	195
Chapter 9: Changes, Changes, Changes	211
Chapter 10: Leveraging Your Existing Designs	229
Chapter 11: Printing and Plotting	245
<i>Part IV: Playing Nicely with Others (And Picking Up Your Toys)</i>	255
Chapter 12: Managing the Clutter	257
Chapter 13: Collaborating with Team Members	265
Chapter 14: Viewing and Reviewing Documents	285
<i>Part V: The Part of Tens</i>	299
Chapter 15: Ten Tips for Becoming More Proficient with SolidWorks	301
Chapter 16: Ten Ways to Extend and Reuse Your Design Information	311
Chapter 17: Ten Resources for the SolidWorks Community	321
<i>Appendix: About the CD</i>	331
<i>Index</i>	337

Table of Contents

***Introduction* 1**

About This Book.....	1
Conventions Used in This Book	2
What You're Not to Read.....	2
Foolish Assumptions	2
How This Book Is Organized.....	3
Part I: Beginning the SolidWorks Journey	3
Part II: Design Intent and the Virtual Prototype.....	3
Part III: The Devil's in the "Drawing" Details.....	3
Part IV: Playing Nicely with Others (And Picking Up Your Toys).....	3
Part V: The Part of Tens.....	4
About the CD-ROM	4
Icons Used in This Book.....	4
Where to Go from Here.....	5

***Part 1: Beginning the SolidWorks Journey* 7**

Chapter 1: Getting to Know (And Love) SolidWorks 9

Exploring the SolidWorks Advantage	9
Improving the way you work	10
Embracing the virtual prototype.....	11
Getting Your System Ready for SolidWorks	12
Keeping Your Computer Happy.....	13
Starting Up SolidWorks the First Time	13
Checking Out the Features.....	15
Finding help and tips	15
Finding out what's new in SolidWorks 2008.....	17

Chapter 2: Taking Control of SolidWorks 19

Working with SolidWorks Documents	19
Creating and Opening a Document	21
Working with Templates.....	23
Understanding the User Interface.....	25
Touring the document window.....	25
Selecting and editing with the FeatureManager design tree.....	28
Working with the CommandManager	29
Mousing around.....	30

Getting a Better View of Things.....	31
Zoom, pan, and rotate.....	32
Standard engineering views	32
Display styles	33
Exploring the SolidWorks Help Menu	34
Customizing the User Interface	36
Adding flyout toolbars	38
Taking advantage of single-command mode.....	39
Defining SolidWorks System Options	39

Chapter 3: Building Blocks for the Virtual Prototype 43

Planning and Capturing Design Intent (Or, Think First and Then Do) ...	44
Starting the design with a hand sketch	44
Using an engineering journal and the SolidWorks Design Binder ..	46
Capturing design intent: Brainstorming	48
Making a list and checking it twice	48
Applying Layouts and Design Skeletons	49
Designing top down versus bottom up	50
Creating a design layout	51
Creating in-context parts in the assembly	55
Thinking about skeletons you want in your closet	55

Part II: Design Intent and the Virtual Prototype57

Chapter 4: Do What I Mean, Not What I Sketch 59

Making and Editing a Sketch.....	59
Identifying the elements of a sketch	60
Origins and orientation	61
Sketching with entities	62
Modifying sketch entities	64
Adding reference geometry.....	68
Defining the Sketch	72
Working with relations.....	74
Creating simple dimensions.....	79
Marking a dimension for drawing reuse.....	81

Chapter 5: Making Better Parts 83

Introducing Part Features	83
Working with the Features Toolbar	85
Creating Sketched Features	86
Pulling and carving out extruded features.....	86
Revolving features around an axis	88
Sweeping features along a path	90
Lofted features: A sketch of many profiles.....	91

Making Applied Features.....93
 Rounding parts with Fillet93
 Beveling edges with Chamfer.....95
 Angling faces accurately with Draft96
 Making parts hollow with Shell98
 Drilling holes with the Hole Wizard99
 Designing Pattern and Mirror Features101
 Linear patterns101
 Circular patterns103
 Mirror features.....104
 Building a Part105
 Part example 1106
 Part example 2107
 Part example 3107
 Part example 4107
 Building a Better Part108
 Naming features (Or, you call it tomato, I call it tomato).....108
 Thinking about feature order.....110
 Organizing features with folders110
 Using the Rollback feature112
 Using comments112
 Knowing How Much to Model113

Chapter 6: Putting It All Together115

Creating and Modifying the Assembly.....115
 Checking out assembly items116
 Tooling around the Assembly toolbar117
 Planning your assembly118
 Designing an assembly119
 Organizing your assembly.....123
 Understanding Your Mates126
 Getting familiar with mate types128
 Adding a mate129
 Editing a mate131
 Working with SmartMates132
 Working with mate references134
 Understanding the FeatureManager design tree Mategroup136
 Working with Your Virtual Prototype137
 Using layouts.....138
 Creating the layout.....138
 Using blocks in your layout138
 Selecting assembly components140
 Creating assembly features142
 In-context assembly modeling.....143
 Getting information about your assembly146

Part III: The Devil's in the "Drawing" Details 151**Chapter 7: Creating Drawings153**

Becoming Familiar with Drawing Elements	153
Opening a New Drawing Document	156
Editing the Drawing Sheet Format	159
Placing the Drawing Views	160
Model view	161
Standard 3 Views	163
Projected view	164
Auxiliary view	164
Section view	165
Aligned Section view	166
Detail view	167
Crop view	167
Changing View Properties	168
Creating Drawing Dimensions	169
Smart Dimension	171
Ordinate and baseline dimensions	172
Adding Reference Annotations	174
Note	175
Balloon	177
Auto Balloon	178
Surface finish	179
Geometric tolerance	180
Datum target	181
Datum symbol	182
Cosmetic thread	183
Center mark	183
Centerline	184
Checking Spelling	185
Defining Drawing Tables	186
Bill of materials	186
Revision table	188
Hole tables	190
Changing and customizing tables	192

Chapter 8: Speeding It Up: Automating the Drawing195

Planning for the Drawing	195
Inserting Model Items	196
Managing Drawing Clutter with Layers	199
Creating layers	200
Working with layers	201
Automating Drawing Creation	201
Using custom properties	202
Setting up a drawing sheet format	204
Using predefined views to start drawings	206

Working with Dimension Favorites	208
Creating the Drawing Template	209
Chapter 9: Changes, Changes, Changes	211
Changing the Design	211
Changing dimensions and features	212
Changing visual properties	214
Changing document references	219
Getting Information from Your Design	220
Measuring your design	221
Displaying mass properties.....	222
Getting the stats on your documents	225
Chapter 10: Leveraging Your Existing Designs	229
Maintaining Old Drawing Files.....	229
Managing Configurations	232
Varying the design.....	233
Creating a configuration manually	234
Creating configurations with Design Tables	236
Using configurations to create exploded views	240
Chapter 11: Printing and Plotting	245
Delving into Printing and Plotting.....	245
Installing a Printer in Windows	246
Setting Printer and Document Preferences in Windows	247
Choosing Print Options in SolidWorks	248
Defining printer page setup properties	248
Setting options within the Print dialog box	249
Printing a Document	252
 <i>Part IV: Playing Nicely with Others</i> <i>(And Picking Up Your Toys)</i>	 255
Chapter 12: Managing the Clutter	257
Managing Data with or without a Net	257
Checking your list.....	258
Deciding which way to go	259
Managing Your Data Manually	260
Setting up a good directory structure	260
Making backups	261
Copying Files with SolidWorks Explorer	261

Chapter 13: Collaborating with Team Members265

Keeping Everyone on the Same Page When Collaborating.....	265
Setting the Collaboration mode options	267
Giving users read/write access.....	268
Covering the bases: External references	269
Exploring Standard Design Elements.....	270
Inside the Design Library	271
Using SolidWorks Toolbox.....	273
A place for sharing: 3D ContentCentral.....	277
Working with Different File Formats	279
Looking at types and uses of data formats	280
Exporting SolidWorks files	281
Importing non-SolidWorks files	281
Solving common import problems.....	283

Chapter 14: Viewing and Reviewing Documents285

Viewing with CAD Viewers	285
Sharing Models and Data with eDrawings	287
Creating an eDrawings file.....	288
Creating an eDrawings file from SolidWorks.....	288
Sending an eDrawings file	289
Measuring and marking up.....	290
Using the SolidWorks Viewer	296
Including SolidWorks Documents in Your Presentations.....	296
Linking or embedding models in Microsoft Office programs	297
Creating an image file of a model	298

Part V: The Part of Tens*299*Chapter 15: Ten Tips for Becoming More Proficient with SolidWorks301**

Go to Class (Formal Training)	302
Be Creative (Nontraditional Training).....	302
Check Local Reseller Events	304
Join a User Group.....	304
Aspire to Be a Superuser.....	305
Network Virtually: The Discussion Forum.....	305
Take the CSWP Test	306
Document Your CAD Standards	307
Communicate Design Standards	308
Manage SolidWorks Well	308

Chapter 16: Ten Ways to Extend and Reuse Your Design Information 311

- Show Off Your Model with Microsoft OLE312
- Share Models with SolidWorks 3D Instant Website313
- Spice Up Model Images with PhotoWorks313
- Simulate Movement with SolidWorks Motion Studies.....314
- Share Design Info with PDMWorks Workgroup315
- Test a Design with COSMOSWorks Analysis315
- Check Out Models' Moves with COSMOSMotion.....316
- Automate Tasks with the API and Macros317
- Schedule the Intensive Work with SolidWorks Task Scheduler318
- Find Various Manufacturing Software320

Chapter 17: Ten Resources for the SolidWorks Community 321

- SolidWorks and COSMOS User Groups321
- The SolidWorks Web Site323
- The SolidWorks Express Newsletter324
- The SolidWorks Customer Portal.....324
- The Certified SolidWorks Professional Program.....326
- 3D ContentCentral.....326
- The SolidWorks Manufacturing Network327
- SolidWorks Solution Partners327
- SolidWorks Resellers328
- The SolidWorks Educational Community328

Appendix: About the CD.....331

Index.....337



Introduction

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 5th 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 . . .

Beginning 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.