

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 Fillet.....	93
Beveling edges with Chamfer.....	95
Angling faces accurately with Draft	96
Making parts hollow with Shell	98
Drilling holes with the Hole Wizard	99
Designing Pattern and Mirror Features	101
Linear patterns	101
Circular patterns	103
Mirror features.....	104
Building a Part	105
Part example 1	106
Part example 2	107
Part example 3	107
Part example 4	107
Building a Better Part	108
Naming features (Or, you call it tomato, I call it tomato).....	108
Thinking about feature order.....	110
Organizing features with folders	110
Using the Rollback feature	112
Using comments	112
Knowing How Much to Model	113

Chapter 6: Putting It All Together115

Creating and Modifying the Assembly.....	115
Checking out assembly items	116
Tooling around the Assembly toolbar	117
Planning your assembly	118
Designing an assembly	119
Organizing your assembly.....	123
Understanding Your Mates	126
Getting familiar with mate types	128
Adding a mate	129
Editing a mate	131
Working with SmartMates	132
Working with mate references	134
Understanding the FeatureManager design tree Mategroup	136
Working with Your Virtual Prototype	137
Using layouts.....	138
Creating the layout.....	138
Using blocks in your layout	138
Selecting assembly components	140
Creating assembly features	142
In-context assembly modeling.....	143
Getting information about your assembly	146

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 OLE	312
Share Models with SolidWorks 3D Instant Website	313
Spice Up Model Images with PhotoWorks	313
Simulate Movement with SolidWorks Motion Studies.....	314
Share Design Info with PDMWorks Workgroup	315
Test a Design with COSMOSWorks Analysis	315
Check Out Models' Moves with COSMOSMotion.....	316
Automate Tasks with the API and Macros	317
Schedule the Intensive Work with SolidWorks Task Scheduler	318
Find Various Manufacturing Software	320
Chapter 17: Ten Resources for the SolidWorks Community	321
SolidWorks and COSMOS User Groups	321
The SolidWorks Web Site	323
The SolidWorks Express Newsletter	324
The SolidWorks Customer Portal.....	324
The Certified SolidWorks Professional Program.....	326
3D ContentCentral.....	326
The SolidWorks Manufacturing Network	327
SolidWorks Solution Partners	327
SolidWorks Resellers	328
The SolidWorks Educational Community	328
 <i>Appendix: About the CD</i>	 331
 <i>Index</i>	 337

