

Contents

Introductionxxix

Part 1 • The Basics 1

Chapter 1 • Exploring the AutoCAD and AutoCAD LT interface3

| | |
|--|----|
| Taking a Guided Tour | 4 |
| The AutoCAD Window | 5 |
| The Menu Browser | 9 |
| The Ribbon | 12 |
| The Toolbars | 15 |
| Working with AutoCAD | 17 |
| Opening an Existing File | 17 |
| Getting a Closer Look | 19 |
| Saving a File as You Work | 22 |
| Making Changes | 23 |
| Working with Multiple Files | 24 |
| Adding a Predrawn Symbol with the Tool Palette | 27 |
| The Bottom Line | 28 |

Chapter 2 • Creating Your First Drawing29

| | |
|---|----|
| Getting to Know the Home Tab's Draw and Modify Panels | 29 |
| Starting Your First Drawing | 31 |
| Specifying Exact Distances with Coordinates | 36 |
| Specifying Polar Coordinates | 37 |
| Specifying Relative Cartesian Coordinates | 38 |
| Interpreting the Cursor Modes and Understanding Prompts | 40 |
| Understanding Cursor Modes | 41 |
| Choosing Command Options | 42 |
| Selecting Objects | 46 |
| Selecting Objects in AutoCAD | 47 |
| Using Noun/Verb Selection | 53 |
| Editing with Grips | 57 |
| Stretching Lines by Using Grips | 58 |
| Moving and Rotating with Grips | 60 |
| Using Dynamic Input | 63 |
| Getting Help | 67 |
| Using the InfoCenter | 68 |
| Using Context-Sensitive Help | 69 |
| Finding Additional Sources of Help | 70 |
| Staying Informed with the Communication Center | 70 |

| | |
|--|------------|
| Displaying Data in a Text Window | 71 |
| Displaying the Properties of an Object | 72 |
| The Bottom Line | 74 |
| | |
| Chapter 3 • Setting Up and Using AutoCAD’s Drafting Tools | 75 |
| Setting Up a Work Area | 75 |
| Specifying Units | 76 |
| Fine-Tuning the Measurement System | 79 |
| Setting Up the Drawing Limits | 80 |
| An Alternative to Limits | 82 |
| Understanding Scale Factors | 82 |
| Using Polar Tracking | 83 |
| Setting the Polar Tracking Angle | 85 |
| Exploring the Drawing Process | 86 |
| Locating an Object in Reference to Others | 87 |
| Getting a Closer Look | 88 |
| Modifying an Object | 88 |
| Planning and Laying Out a Drawing | 92 |
| Making a Preliminary Sketch | 94 |
| Using the Layout | 95 |
| Erasing the Layout Lines | 100 |
| Putting On the Finishing Touches | 103 |
| Aligning Objects by Using Object Snap Tracking | 104 |
| Using the AutoCAD Modes as Drafting Tools | 111 |
| Using Grid Mode as a Background Grid | 111 |
| Using the Snap Modes | 112 |
| The Bottom Line | 113 |
| | |
| Chapter 4 • Organizing Objects with Blocks and Groups | 115 |
| Creating a Symbol | 115 |
| Understanding the Block Definition Dialog Box | 118 |
| Inserting a Symbol | 119 |
| Scaling and Rotating Blocks | 122 |
| Using an Existing Drawing as a Symbol | 123 |
| Modifying a Block | 126 |
| Unblocking and Redefining a Block | 127 |
| Saving a Block as a Drawing File | 128 |
| Replacing Existing Files with Blocks | 130 |
| Other Uses for Blocks | 131 |
| Understanding the Annotation Scale | 132 |
| Grouping Objects | 135 |
| Grouping Objects for LT Users | 136 |
| Modifying Members of a Group | 137 |
| Working with the Object Grouping Dialog Box | 140 |
| Working with the LT Group Manager | 142 |
| The Bottom Line | 143 |

| | |
|--|------------|
| Chapter 5 • Keeping Track of Layers and Blocks | 145 |
| Organizing Information with Layers | 145 |
| Creating and Assigning Layers | 147 |
| Working on Layers | 155 |
| Controlling Layer Visibility | 158 |
| Finding the Layers You Want | 160 |
| Taming an Unwieldy List of Layers | 161 |
| Assigning Linetypes to Layers | 168 |
| Adding a Linetype to a Drawing | 169 |
| Controlling Lineweights | 173 |
| Keeping Track of Blocks and Layers | 173 |
| Getting a Text File List of Layers or Blocks | 174 |
| The Bottom Line | 176 |
| | |
| Part 2 • Mastering Intermediate Skills | 177 |
| | |
| Chapter 6 • Editing and Reusing Data to Work Efficiently | 179 |
| Creating and Using Templates | 180 |
| Creating a Template | 180 |
| Using a Template | 181 |
| Copying an Object Multiple Times | 182 |
| Making Circular Copies | 182 |
| Making Row and Column Copies | 186 |
| Fine-Tuning Your View | 189 |
| Finishing the Kitchenette | 191 |
| Developing Your Drawing | 192 |
| Importing Settings | 192 |
| Using Osnap Tracking to Place Objects | 195 |
| Finding an Exact Distance along a Curve | 211 |
| Changing the Length of Objects | 213 |
| Creating a New Drawing by Using Parts from Another Drawing | 213 |
| Eliminating Unused Blocks, Layers, Linetypes, Shapes, Styles, and More | 214 |
| The Bottom Line | 216 |
| | |
| Chapter 7 • Mastering Viewing Tools, Hatches, and External References . . . | 217 |
| Assembling the Parts | 217 |
| Taking Control of the AutoCAD Display | 221 |
| Understanding Regeneration and Redrawing | 221 |
| Understanding the Frozen Layer Option | 226 |
| Using Hatch Patterns in Your Drawings | 227 |
| Placing a Hatch Pattern in a Specific Area | 227 |
| Positioning Hatch Patterns Accurately | 229 |
| Updating a Block from an External File | 234 |
| Changing the Hatch Area | 236 |
| Modifying a Hatch Pattern | 237 |

| | |
|---|------------|
| Understanding the Boundary Hatch Options..... | 240 |
| Using Additional Hatch Features..... | 241 |
| Using Gradient Shading..... | 243 |
| Tips for Using Boundary Hatch..... | 245 |
| Space Planning and Hatch Patterns..... | 245 |
| Using External References..... | 249 |
| Attaching a Drawing as an External Reference..... | 249 |
| Other Differences between External References and Blocks..... | 253 |
| Other External Reference Options..... | 254 |
| Clipping Xref Views and Improving Performance..... | 256 |
| Editing Xrefs in Place..... | 258 |
| Adding and Removing Objects from Blocks and Xrefs..... | 260 |
| Understanding the Reference Edit Dialog Box Options..... | 262 |
| The Bottom Line..... | 264 |
| | |
| Chapter 8 • Introducing Printing, Plotting, and Layouts..... | 265 |
| Plotting the Plan..... | 265 |
| Understanding the Plotter Settings..... | 269 |
| Paper Size..... | 269 |
| Drawing Orientation..... | 270 |
| Plot Area..... | 270 |
| Plot Scale..... | 272 |
| Shaded Viewport Options..... | 275 |
| Plot Offset..... | 276 |
| Plot Options..... | 277 |
| WYSIWYG Plotting Using Layout Views..... | 279 |
| Plot Scale in the Layout Viewports..... | 282 |
| Adding an Output Device..... | 283 |
| Editing a Plotter Configuration..... | 286 |
| Storing a Page Setup..... | 288 |
| Plotter and Printer Hardware Considerations..... | 290 |
| Understanding Your Plotter’s Limits..... | 292 |
| Knowing Your Plotter’s Origins..... | 292 |
| The Bottom Line..... | 294 |
| | |
| Chapter 9 • Understanding Plot Styles..... | 295 |
| Choosing between Color-Dependent and Named Plot Style Tables..... | 295 |
| Creating a Color Plot Style Table..... | 297 |
| Editing and Using Plot Style Tables..... | 299 |
| Making Your Plot Styles Visible..... | 301 |
| Making Changes to Multiple Plot Styles..... | 302 |
| Setting Up Line Corner Styles..... | 304 |
| Setting Up Screen Values for Solid Areas..... | 306 |
| Controlling the Visibility of Overlapping Objects..... | 306 |
| Other Options in the Plot Style Table Editor..... | 307 |

| | |
|--|------------|
| Assigning Named Plot Styles Directly to Layers and Objects | 310 |
| Using Named Plot Style Tables | 310 |
| Assigning Plot Styles to Objects | 313 |
| Assigning Plot Style Tables to Layers | 315 |
| The Bottom Line | 317 |
| | |
| Chapter 10 • Adding Text to Drawings | 319 |
| Preparing a Drawing for Text | 319 |
| Organizing Text by Styles | 320 |
| Getting Familiar with the Text and Annotation Scale Control Panels | 322 |
| Setting the Annotation Scale and Adding Text | 323 |
| Exploring Text and Scale | 325 |
| Understanding the Text Style Dialog Box Options | 327 |
| Style | 327 |
| Exploring Text Formatting in AutoCAD | 328 |
| Adjusting the Text Height and Font | 328 |
| Understanding the Text Formatting Toolbar | 330 |
| Adding Symbols and Special Characters | 332 |
| Setting Indents and Tabs | 334 |
| What Do the Fonts Look Like? | 338 |
| Adding Simple Single-Line Text Objects | 340 |
| Justifying Single-Line Text Objects | 341 |
| Using Special Characters with Single-Line Text Objects | 344 |
| Using the Check Spelling Feature | 344 |
| Choosing a Dictionary | 346 |
| Substituting Fonts | 347 |
| Finding and Replacing Text | 348 |
| The Bottom Line | 350 |
| | |
| Chapter 11 • Using Fields and Tables | 353 |
| Using Fields to Associate Text with Drawing Properties | 353 |
| Adding Tables to Your Drawing | 357 |
| Creating a Table | 357 |
| Adding Cell Text | 358 |
| Adjusting Table Text Orientation and Location | 360 |
| Editing the Table Line Work | 363 |
| Adding Formulas to Cells | 365 |
| Using Formulas Directly in Cells | 366 |
| Using Other Math Operations | 367 |
| Importing and Exporting Tables | 367 |
| Exporting Tables | 369 |
| Creating Table Styles | 370 |
| The Table Style Options | 371 |
| The Bottom Line | 372 |

Chapter 12 • Using Dimensions. 375

- Understanding the Components of a Dimension 375
- Creating a Dimension Style 377
 - Setting Up the Primary Unit Style 379
 - Setting the Height for Dimension Text 380
 - Setting the Location and Orientation of Dimension Text 381
 - Choosing an Arrow Style and Setting the Dimension Scale 382
 - Setting Up Alternate Units 385
 - Setting the Current Dimension Style 386
 - Modifying a Dimension Style 387
- Drawing Linear Dimensions 388
 - Understanding the Dimensions Panel 388
 - Placing Horizontal and Vertical Dimensions 389
 - Continuing a Dimension 390
 - Drawing Dimensions from a Common Base Extension Line 392
 - Adjusting the Distance between Dimensions 394
- Editing Dimensions 394
 - Appending Data to Dimension Text 395
 - Using Grips to Make Minor Adjustments to Dimensions 397
 - Changing Style Settings of Individual Dimensions 398
 - Editing Dimensions and Other Objects Together 400
 - Associating Dimensions with Objects 402
 - Adding a String of Dimensions with a Single Operation 403
 - Adding or Removing the Alternate Dimensions 404
- Dimensioning Non-orthogonal Objects 405
 - Dimensioning Non-orthogonal Linear Distances 405
 - Dimensioning Radii, Diameters, and Arcs 407
 - Skewing Dimension Lines 410
- Adding a Note with a Leader Arrow 411
 - Creating Multileader Styles 413
 - Editing Multileader Notes 415
 - Breaking a Dimension Line for a Leader 415
- Applying Ordinate Dimensions 416
- Adding Tolerance Notation 417
 - Adding Inspection Dimensions 419
- The Bottom Line 420

Part 3 • Mastering Advanced Skills 423

Chapter 13 • Using Attributes 425

- Creating Attributes 426
 - Adding Attributes to Blocks 427
 - Copying and Editing Attribute Definitions 429
 - Turning the Attribute Definitions into a Block 432
 - Inserting Blocks Containing Attributes 433

| | |
|---|------------|
| Editing Attributes | 436 |
| Editing Attribute Values One at a Time | 436 |
| Editing Attribute Text Formats and Properties | 437 |
| Making Global Changes to Attribute Values | 438 |
| Making Invisible Attributes Visible | 440 |
| Making Global Format and Property Changes to Attributes | 441 |
| Redefining Blocks Containing Attributes | 443 |
| Extracting and Exporting Attribute Information | 444 |
| Performing the Extraction | 445 |
| Extracting Attribute Data to an AutoCAD Table | 449 |
| The Bottom Line | 451 |
| | |
| Chapter 14 • Copying Existing Drawings into AutoCAD | 453 |
| Methods for Converting Paper Drawings to AutoCAD Files | 453 |
| Importing a Raster Image | 454 |
| Working with a Raster Image | 457 |
| Scaling a Raster Image | 457 |
| Controlling Object Visibility and Overlap with Raster Images | 458 |
| Clipping a Raster Image | 460 |
| Adjusting Brightness, Contrast, and Strength | 462 |
| Turning Off the Frame, Adjusting Overall Quality, and Controlling Transparency | 462 |
| The Bottom Line | 465 |
| | |
| Chapter 15 • Advanced Editing and Organizing | 467 |
| Using External References (Xrefs) | 467 |
| Preparing Existing Drawings for Cross-Referencing | 468 |
| Assembling Xrefs to Build a Drawing | 470 |
| Importing Named Elements from Xrefs | 476 |
| Controlling the Xref Search Path | 478 |
| Managing Layers | 479 |
| Saving and Recalling Layer Settings | 479 |
| Other Tools for Managing Layers | 482 |
| Using Advanced Tools: Filter, Quick Select, and QuickCalc | 485 |
| Filtering Selections | 485 |
| Using Quick Select | 488 |
| Using the QuickCalc Calculator | 490 |
| Adding Foot and Inch Lengths and Finding the Sum of Angles | 492 |
| Using the Display Area and Units Conversion | 495 |
| Using QuickCalc to Find Points | 496 |
| Pasting to the Command Line | 498 |
| Finding Fractional Distances between Two Points | 499 |
| Using QuickCalc While in the Middle of a Command | 502 |
| Storing Expressions and Values | 503 |
| Guidelines for Working with QuickCalc | 505 |
| The Bottom Line | 507 |

| | |
|---|------------|
| Chapter 16 • Laying Out Your Printer Output | 509 |
| Understanding Model Space and Paper Space | 509 |
| Switching from Model Space to Paper Space | 511 |
| Setting the Size of a Paper Space Layout | 512 |
| Creating New Paper Space Viewports | 513 |
| Reaching inside Viewports | 515 |
| Working with Paper Space Viewports | 517 |
| Scaling Views in Paper Space | 518 |
| Setting Layers in Individual Viewports | 520 |
| Creating and Using Multiple Paper Space Layouts | 523 |
| Creating Odd-Shaped Viewports | 525 |
| Understanding Lineweights, Linetypes, and Dimensions in Paper Space | 527 |
| Controlling and Viewing Lineweights in Paper Space | 527 |
| The Lineweight Settings Dialog Box | 529 |
| Linetype Scales and Paper Space | 530 |
| Dimensioning in Paper Space Layouts | 530 |
| Other Uses for Paper Space | 534 |
| The Bottom Line | 534 |
| | |
| Chapter 17 • Using Dynamic Blocks | 535 |
| Exploring the Block Editor | 535 |
| Editing a Block and Creating New Blocks | 537 |
| Creating a Dynamic Block | 538 |
| Adding a Parameter | 539 |
| Adding an Action | 541 |
| Adding an Increment Value | 543 |
| Editing Parameters and Actions | 544 |
| Keeping an Object Centered | 545 |
| Adding Scale and Stretch Actions to a Parameter | 546 |
| Adding More Than One Parameter for Multiple Grip Functions | 550 |
| Including a Mirror Capability | 550 |
| Adding a Selectable List | 552 |
| Including Block Information with Data Extraction | 555 |
| Creating Multiple Shapes in One Block | 559 |
| Rotating Objects in Unison | 563 |
| Filling in a Space Automatically with Objects | 566 |
| The Bottom Line | 568 |
| | |
| Chapter 18 • Drawing Curves | 569 |
| Introducing Polylines | 569 |
| Drawing a Polyline | 569 |
| Setting Polyline Options | 571 |
| Editing Polylines | 572 |
| Setting Pedit Options | 575 |
| Smoothing Polylines | 576 |
| Editing Vertices | 578 |

| | |
|--|------------|
| Creating a Polyline Spline Curve | 586 |
| Using True Spline Curves | 588 |
| Drawing a True Spline | 589 |
| Fine-Tuning Spline Curves | 590 |
| Marking Divisions on Curves | 592 |
| Dividing Objects into Segments of Equal Length | 593 |
| Dividing Objects into Specified Lengths | 595 |
| The Bottom Line | 596 |
| | |
| Chapter 19 • Getting and Exchanging Data from Drawings | 597 |
| Finding the Area of Closed Boundaries | 597 |
| Finding the Area of an Object | 598 |
| Using Hatch Patterns to Find Areas | 598 |
| Adding and Subtracting Areas with the Area Command | 601 |
| Getting General Information | 604 |
| Determining the Drawing's Status | 604 |
| Keeping Track of Time | 606 |
| Getting Information from System Variables | 606 |
| Keeping a Log of Your Activity | 607 |
| Capturing and Saving Text Data from the AutoCAD Text Window | 608 |
| Storing Searchable Information in AutoCAD Files | 609 |
| Searching for AutoCAD Files | 610 |
| Recovering Corrupted Files | 611 |
| Using the DXF File Format to Exchange CAD Data with Other Programs | 611 |
| Exporting DXF Files | 612 |
| Opening or Importing DXF Files | 613 |
| Using AutoCAD Drawings in Page-Layout Programs | 614 |
| Exporting Raster Files | 615 |
| Exporting Vector Files | 617 |
| Using OLE to Import Data | 619 |
| Editing OLE Links | 621 |
| Importing Worksheets as AutoCAD Tables | 621 |
| Understanding Options for Embedding Data | 623 |
| Using the Clipboard to Export AutoCAD Drawings | 624 |
| The Bottom Line | 625 |
| | |
| Part 4 • 3D Modeling and Imaging | 627 |
| | |
| Chapter 20 • Creating 3D Drawings | 629 |
| Getting to Know the 3D Modeling Workspace | 629 |
| Drawing in 3D Using Solids | 631 |
| Creating a 3D Box | 632 |
| Editing 3D Solids with Grips | 634 |
| Constraining Motion with the Grip Tool | 635 |
| Rotating Objects in 3D Using Dynamic UCS | 636 |
| Drawing on a 3D Object's Surface | 638 |

| | |
|--|------------|
| Pushing and Pulling Shapes from a Solid | 639 |
| Making Changes to Your Solid | 642 |
| Creating 3D Forms from 2D Shapes | 643 |
| Extruding a Polyline | 643 |
| Isolating Coordinates with Point Filters | 650 |
| Moving around Your Model | 651 |
| Finding Isometric and Orthogonal Views | 652 |
| Rotating Freely around Your Model | 653 |
| Changing Your View Direction | 654 |
| Changing Where You Are Looking | 655 |
| Flying through Your View | 656 |
| Changing from Perspective to Parallel Projection | 657 |
| Getting a Visual Effect | 657 |
| Using Visual Styles | 658 |
| Creating a Sketched Look with Visual Styles | 659 |
| Turning a 3D View into a 2D AutoCAD Drawing | 662 |
| The Bottom Line | 665 |
| | |
| Chapter 21 • Using Advanced 3D Features | 667 |
| Setting Up AutoCAD for This Chapter | 667 |
| Mastering the User Coordinate System | 668 |
| Defining a UCS | 669 |
| Saving a UCS | 671 |
| Working in a UCS | 672 |
| Building 3D Parts in Separate Files | 673 |
| Understanding the UCS Options | 675 |
| UCS Based on Object Orientation | 677 |
| UCS Based on Offset Orientation | 678 |
| UCS Rotated around an Axis | 679 |
| Orienting a UCS in the View Plane | 681 |
| Saving a UCS with a View | 682 |
| Using Viewports to Aid in 3D Drawing | 682 |
| Creating Complex 3D Surfaces | 686 |
| Laying Out a 3D Form | 686 |
| Spherical and Cylindrical Coordinate Formats | 688 |
| Using a 3D Polyline | 690 |
| Creating a Curved 3D Surface | 691 |
| Converting the Surface into a Solid | 695 |
| Shaping the Solid | 695 |
| Finding the Interference between Two Solids | 697 |
| Creating Tubes with the Sweep Tool | 700 |
| Using Sweep to Create Complex Forms | 701 |
| Creating Spiral Forms | 704 |
| Creating Surface Models | 708 |
| Slicing a Solid with a Surface | 709 |
| Finding the Volume of a Cut | 710 |

| | |
|---|------------|
| Understanding the Loft Command | 712 |
| Moving Objects in 3D Space | 716 |
| Aligning Objects in 3D Space | 716 |
| Moving an Object in 3D | 717 |
| Rotating an Object in 3D | 718 |
| Getting around in Your Model | 720 |
| The Bottom Line | 722 |
| | |
| Chapter 22 • Rendering 3D Drawings | 725 |
| Creating a Quick-Study Rendering | 725 |
| Simulating the Sun | 726 |
| Setting Up the Sun | 727 |
| Setting Polar North | 729 |
| Adding a Distant Light | 730 |
| Using Materials | 733 |
| Adjusting the Global Material | 734 |
| Creating a New Material and Changing Its Properties | 736 |
| Adding a Background | 739 |
| Creating Effects Using Materials and Lights | 742 |
| Adding a Self-Illuminated Material | 742 |
| Assigning Materials by Layer | 744 |
| Simulating a Night Scene with Spotlights | 745 |
| Adding a Point Light | 749 |
| Editing Lights | 750 |
| Applying and Adjusting Texture Maps | 753 |
| Creating a Building from a Box | 753 |
| Adjusting a Material to Fit an Object | 755 |
| Other Material-Mapping Options | 758 |
| Specifying the Size of a Bitmap | 760 |
| Simulating Trees and People with Opacity Maps | 762 |
| Understanding the Rendering Options | 765 |
| Checking and Saving Renderings in the Render Window | 767 |
| Adding Cameras for Better View Control | 768 |
| Making Adjustments to Your Camera | 771 |
| Creating an Animated Walk-Through | 774 |
| Fine-Tuning the Animation | 775 |
| Printing Your Renderings | 777 |
| Simulating Natural Light | 779 |
| Rendering Interior Views | 780 |
| Using the Sun And Sky Simulation | 782 |
| The Bottom Line | 787 |
| | |
| Chapter 23 • Editing and Visualizing 3D Solids | 789 |
| Understanding Solid Modeling | 789 |
| Creating Solid Forms | 792 |
| Joining Primitives | 792 |

Creating Complex Solids 796
 Tapering an Extrusion 796
 Extruding on a Curved Path 798
 Revolving a Polyline 799
 Editing Solids 801
 Splitting a Solid into Two Pieces 801
 Rounding Corners with the Fillet Tool 803
 Chamfering Corners with the Chamfer Tool 804
 Using the Solid Editing Tools 806
 Streamlining the 2D Drawing Process 816
 Drawing Standard Top, Front, and Right-Side Views 816
 Adding Dimensions and Notes in a Layout 819
 Using Visual Styles with a Viewport 820
 Visualizing Solids 822
 The Bottom Line 830

Part 5 • Customization and Integration 831

Chapter 24 • Using the Express Tools 833

Using Enhancements Straight from the Source 833
 Opening the Express Toolbars 834
 Tools for Editing Text 834
 Express Blocks Tools 836
 Express Standard Tools 837
 Express Tools on the Menu Browser 839
 Layout Express Tools 848
 Putting AutoLISP to Work 851
 Loading and Running an AutoLISP Program 851
 Managing Your AutoLISP and VBA Library 852
 Loading AutoLISP Programs Automatically 853
 Creating Keyboard Macros with AutoLISP 854
 The Bottom Line 858

Chapter 25 • Exploring AutoLISP 859

Understanding the Interpreter 859
 Defining Variables with *Setq* 860
 Understanding Data Types 861
 Using Arguments and Functions 862
 Using Text Variables with AutoLISP 863
 Storing Points as Variables 865
 Creating a Simple Program 865
 Dissecting the Rectangle Program 867
 Selecting Objects with AutoLISP 871
 The *Sselect* Function 871
 Controlling the Flow of an AutoLISP Program 873
 Using the *If* Function 873

| | |
|---|-----|
| Repeating an Expression | 876 |
| Using Other Built-in Functions | 876 |
| Data-Type Conversions | 878 |
| Storing Your Programs as Files | 879 |
| Getting More Help with AutoLISP | 880 |
| The Bottom Line | 880 |

Chapter 26 • Customizing Toolbars, Menus, Linetypes, and Hatch Patterns 883

| | |
|--|-----|
| Using Workspaces | 883 |
| Customizing the User Interface | 885 |
| Taking a Quick Customization Tour | 885 |
| Understanding the Customizations in All CUI Files Panel | 888 |
| Getting the Overall View | 890 |
| Finding Commands in the Command List | 892 |
| Preview/Button Image/Shortcuts | 892 |
| Getting to the Core of Customization in the Properties Group | 892 |
| Creating Your Own Toolbars and Menus | 893 |
| Customizing Ribbon Panel Tools | 894 |
| Creating Macros in Tools and Menus | 898 |
| Pausing for User Input | 899 |
| Opening an Expanded Text Box for the Macro Option | 899 |
| Editing Keyboard Shortcuts | 901 |
| Saving, Loading, and Unloading Your Customizations | 901 |
| Understanding the Diesel Macro Language | 903 |
| Using Diesel at the Command Line | 903 |
| Using Diesel in a Custom Menu Macro | 904 |
| Using Diesel as a Menu Option Label | 905 |
| Using Diesel and Fields to Generate Text | 908 |
| Creating Custom Linetypes | 909 |
| Viewing Available Linetypes | 909 |
| Creating a New Linetype | 910 |
| Understanding the Linetype Code | 911 |
| Creating Complex Linetypes | 912 |
| Creating Hatch Patterns | 914 |
| The Bottom Line | 917 |

Chapter 27 • Managing and Sharing Your Drawings 919

| | |
|--|-----|
| Sharing Drawings over the Internet | 919 |
| Sharing Project Files with eTransmit | 920 |
| Protecting AutoCAD Drawing Files | 923 |
| ePublishing Your Drawings | 928 |
| Exchanging Drawing Sets | 928 |
| Other Publish Options | 930 |
| Creating a DWF File by Using the Plot Dialog Box | 932 |
| Adding Hyperlinks to Drawings | 934 |

Managing Your Drawings with DesignCenter and the Tool Palettes 938
 Getting Familiar with DesignCenter 938
 Opening and Inserting Files with DesignCenter 941
 Finding and Extracting the Contents of a Drawing 942
 Exchanging Data between Open Files 945
 Loading Specific Files into DesignCenter 945
 Downloading Symbols from DesignCenter Online 946
 Customizing the Tool Palettes with DesignCenter 946
 Establishing Office Standards 951
 Establishing Layering and Text Conventions 951
 Checking Office Standards 952
 Converting Multiple Layer Settings 956
 Other Layer Translator Options 958
 The Bottom Line 959

Chapter 28 • Keeping a Project Organized with Sheet Sets 961

Understanding Sheet Sets 961
 Organizing by Reference Files and Sheet Files 962
 Managing Your Files with Sheet Sets 962
 Creating a Sheet Set from an Existing Project 963
 Using the Create Sheet Set Wizard 963
 Exploring the Sheet Set Manager 966
 Adding New Sheets to Your Sheet Set 969
 Managing Title Blocks and Cross-References 971
 Creating a New Sheet Set Based on an Existing One 971
 Building a Set of Drawings 972
 Adding Callout Blocks as Cross-Reference Symbols 977
 Editing Sheet Numbers and Title Block Information 979
 Closing a Sheet Set 980
 Customizing Sheet Sets 981
 Customizing a Title Block 981
 Creating Custom View Labels and Callout Blocks 990
 Archiving, Publishing, and eTransmitting Sheet Sets 997
 Archiving Your Sheet Set 998
 Batch-Plotting and Publishing Your Sheet Set 1000
 Packaging Sheet Sets with eTransmit 1001
 Preparing Your Project Files 1001
 The Bottom Line 1002

Appendices 1003

Appendix A • The Bottom Line 1005

Chapter 1: Exploring the AutoCAD and AutoCAD LT Interface 1005
 Chapter 2: Creating Your First Drawing 1006
 Chapter 3: Setting Up and Using AutoCAD's Drafting Tools 1007

| | |
|--|-------------|
| Chapter 4: Organizing Objects with Blocks and Groups | 1007 |
| Chapter 5: Keeping Track of Layers and Blocks | 1008 |
| Chapter 6: Editing and Reusing Data to Work Efficiently | 1009 |
| Chapter 7: Mastering Viewing Tools, Hatches, and External References | 1009 |
| Chapter 8: Introducing Printing, Plotting, and Layouts | 1010 |
| Chapter 9: Understanding Plot Styles | 1011 |
| Chapter 10: Adding Text to Drawings | 1012 |
| Chapter 11: Using Fields and Tables | 1013 |
| Chapter 12: Using Dimensions | 1013 |
| Chapter 13: Using Attributes | 1015 |
| Chapter 14: Copying Existing Drawings into AutoCAD | 1015 |
| Chapter 15: Advanced Editing and Organizing | 1016 |
| Chapter 16: Laying Out Your Printer Output | 1016 |
| Chapter 17: Using Dynamic Blocks | 1017 |
| Chapter 18: Drawing Curves | 1018 |
| Chapter 19: Getting and Exchanging Data from Drawings | 1020 |
| Chapter 20: Creating 3D Drawings | 1021 |
| Chapter 21: Using Advanced 3D Features | 1022 |
| Chapter 22: Rendering 3D Drawings | 1023 |
| Chapter 23: Editing and Visualizing 3D Solids | 1024 |
| Chapter 24: Using the Express Tools | 1025 |
| Chapter 25: Exploring AutoLISP | 1025 |
| Chapter 26: Customizing Toolbars, Menus, Linetypes, and Hatch Patterns | 1026 |
| Chapter 27: Managing and Sharing Your Drawings | 1028 |
| Chapter 28: Keeping a Project Organized with Sheet Sets | 1029 |
| | |
| Appendix B • Installing and Setting Up AutoCAD | 1031 |
| Before Installing AutoCAD | 1031 |
| Proceeding with the Installation | 1031 |
| Installing the AutoCAD Software | 1032 |
| Configuring AutoCAD | 1033 |
| The Files Tab | 1033 |
| The Display Tab | 1036 |
| The Open and Save Tab | 1039 |
| The Plot and Publish Tab | 1042 |
| The System Tab | 1042 |
| The User Preferences Tab | 1044 |
| The Drafting Tab | 1046 |
| The 3D Modeling Tab | 1048 |
| The Selection Tab | 1051 |
| The Profiles Tab | 1053 |
| Configuring the Tablet Menu Area | 1054 |
| Turning On the Noun/Verb Selection Method | 1055 |
| Turning On the Grips Feature | 1056 |
| Setting Up the Tracking Vector Feature | 1056 |

| | |
|--|-------------|
| Adjusting AutoCAD's 3D Graphics System | 1056 |
| The Adaptive Degradation Group | 1057 |
| The Hardware And Performance Tuning Group | 1057 |
| The Manual Performance Tuning Dialog Box | 1057 |
| Finding Hidden Folders That Contain AutoCAD Files | 1059 |
| | |
| Appendix C • Hardware and Software Tips | 1061 |
| The Graphics Display | 1061 |
| Pointing Devices. | 1062 |
| Output Devices. | 1062 |
| Fine-Tuning the Appearance of Output | 1062 |
| Making Detailed Adjustments with the Printer/Plotter Configuration Options | 1063 |
| Adding a Plot Stamp | 1069 |
| Controlling How Lines Overlap. | 1070 |
| Filtering Paper Sizes. | 1071 |
| Filtering Printers. | 1071 |
| Controlling the Plot-Preview Background Color. | 1072 |
| Controlling the Windows Metafile Background Color. | 1072 |
| Memory and AutoCAD Performance. | 1072 |
| AutoCAD and Your Hard Disk. | 1073 |
| Keep Your Hard Disk Clean | 1073 |
| AutoCAD Tools to Improve Memory Use | 1073 |
| Using Partial Open to Conserve Memory and Improve Speed. | 1073 |
| Using Spatial and Layer Indexes to Conserve Memory | 1074 |
| Using the Incremental Save Percentage to Conserve Disk Space | 1075 |
| Setting Up Architectural Desktop to Act Like Standard AutoCAD | 1075 |
| When Things Go Wrong. | 1076 |
| Starting Up or Opening a File. | 1076 |
| Restoring Corrupted Files | 1076 |
| Troubleshooting Other Common Problems. | 1077 |
| | |
| Appendix D • System Variables and Dimension Styles. | 1081 |
| System Variables. | 1081 |
| Taking a Closer Look at the Dimension Style Dialog Boxes | 1082 |
| The Dimension Style Manager Dialog Box. | 1082 |
| The New/Modify/Override Dimension Style Dialog Box. | 1085 |
| Notes on Metric Dimensioning | 1098 |
| Drawing Blocks for Your Own Dimension Arrows and Tick Marks | 1099 |
| | |
| <i>Index</i> | 1101 |