CorelDraw Training

*Back to the Basics and Beyond*

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# Table of Contents

Product Information ................................................................. 2

Table of Contents ................................................................. 3

CHAPTER 1: **Welcome to the CorelDraw Family** ................................. 5

  1.1 Introduction and What’s New ................................................. 6
  1.2 Exploring Features and Increasing Productivity ......................... 9

CHAPTER 2: **Getting Started** .................................................... 20

  2.1 Single and Multi-Page Documents ........................................... 21
  2.2 Basics: Shapes & Transformations ......................................... 36

CHAPTER 3: **All About the Objects** ............................................ 48

  3.1 Arranging and Organizing Objects .......................................... 49
  3.2 Align and Position Objects .................................................. 63
  3.3 Selecting the Correct Path Tools ........................................... 66
  3.4 Special Shapes and Connectors .............................................. 79
  3.5 Editing Objects ............................................................... 82

CHAPTER 4: **Experiment with Text and Fonts** .................................. 87

  4.1 Artistic Text ................................................................. 89
  4.2 Paragraph Text ............................................................. 91

CHAPTER 5: **Using Advanced Tools and Special Effects** ....................... 95

  5.1 Filling Objects ............................................................. 96
  5.2 Cropping ................................................................. 97
  5.3 Contouring ............................................................... 99
  5.4 Shape and Distort ......................................................... 100
  5.5 Creating the Illusion of a 3D Image ..................................... 103

CHAPTER 6: **Bitmaps and Photos** ............................................. 107

  6.1 Bitmap Artwork .......................................................... 108
  6.2 Scanning Bitmaps into CorelDraw ....................................... 109
  6.3 Importing Bitmaps ......................................................... 110
  6.4 Power Clips ............................................................... 113
6.5  A Trick with the Eyedropper Tool.................................................114

CHAPTER 7: *Raster To Vector* .................................................................116

  7.1  Converting Bitmap Files to Vector Lines........................................117

CHAPTER 8: *Importing and Exporting* ..................................................125

  8.1  Importing......................................................................................126
  8.2  Exporting Files..............................................................................129
  8.3  Saving Files...................................................................................130
  8.4  Using File Backup Options.............................................................132

CHAPTER 9: *Increased Laser Productivity through Artwork* ......................133

  9.1  Which Layout System Works Best for You?.....................................134
  9.2  Creating A Multiples Layout...........................................................135
  9.3  Maximizing the Layout for Productivity Examples.............................137

CHAPTER 10: *Tips, Tricks, and Extras* ....................................................140

  10.1 QR Codes....................................................................................141
  10.2 CorelDraw vs. Adobe Illustrator....................................................145

APPENDIX .........................................................................................148

  A.1  Other/Third Party Support..............................................................149
  A.2  HPGL Plotter (PLT) Technical Notes.............................................151
  A.3  Notes..........................................................................................152
CHAPTER 1
Welcome to the CorelDraw Family
1.1 Introduction and What’s New

Welcome! If you have recently upgraded to CorelDRAW X7 from X6, or being introduced to CorelDRAW for the very first time, you are in for amazing discoveries. The newest version of CorelDRAW has the same great power and features as X6, but the application interface has been revamped so it is extremely user-friendly, whether you are a beginner or have reached expert level.

Corel CONNECT

After installation of your new software, or when first launching CorelDRAW, a box will pop up on your screen that ask you to sign into your Corel Account or Create An Account. Although this is an optional step, Corel CONNECT gives you access to an online community of users. You will have access to new fills and other content that other users, as well as Corel, creates through CONNECT. There are two types of accounts. The Standard Membership is free and guarantees all the fonts, clipart, and media that you would receive with a program on disc. The Premium Membership has a monthly subscription fee and comes with a lot more of the “extras” you would expect to receive with a Premium account. The following illustration shows the box that pops up on your screen.

Welcome: Get Started

Once you have either filled out or closed the registration data box, CorelDRAW’s splash screen appears before the program opens. This is where you are welcomed by a screen overlain on the workspace. If you are a previous CorelDRAW owner you already know about the Welcome Screen, but if you are new user of version X7 you will see the number of options you have to choose from. There is a number of different content that the Corel Corporation has provided – from tutorial videos to customized workspaces.
Let’s take a look at your options. The illustration below shows the Welcome screen. This is the Central Location for starting a new design, doing research, selecting an interface, and getting the latest software updates.

- **Get Started** This icon shows you the most common options to choose from when you want to start a new drawing or open up one you have previously saved. You can also find these options under the File menu, and you can also open a new document and bypass the Welcome screen by selecting the New document icon on the Standard bar.

- **Workspace** When you click on this icon, you are given multiple workspace options – Lite, Classic, Default, Advanced, and Other.
  - **Lite** offers a limited Toolbox and other features.
  - **Classic** and **Default** interfaces are similar, except the Classic interface will remind experienced users of previous versions.
  - **Advanced** interface you can set up the program to make Desktop Publishing or Illustrator features more prominent and easily accessible.
  - **Other** interface allows users to set Up CorelDraw to remind you of Adobe Illustrator [or similar programs].

- **What’s New** is the destination to learn about all the new features in a more detailed but brief document, which is featured in the center of the screen when you click on the “What’s New “ icon.

- **Need Help?** Displays a brief list of resources you can access online and directly within the program to get started. Corel Corporation offers a great collection of video tutorials on the basics.
• **Gallery** Enjoy images that have been created by fellow CorelDraw users. This gallery is updated frequently, so check the Gallery often to see new work.

• **Updates** Stay current. Clicking on this icon let you check for the latest software and product updates.

• **CorelDraw.com** This icon is a connection to the CorelDraw community and online world. It does not actually take you to CorelDraw.com but give you the URL. You can share your experiences, get tips and tricks, and interact with other community members at CorelDraw.com.

• **Membership & Subscription** This is another opportunity to sign up for the Standard or Premium service. Although it is optional, without creating an account [even a FREE Standard Subscription], you will not have access to the fills, fonts, and other media that you will want to access from within the program.

Lastly, once you become tired of the Welcome screen after your fifteenth visit to CorelDRAW, you have the option to uncheck the Always Show the Welcome Screen at Launch checkbox at the bottom left. Then, the program will always start with a bare menu. From this point on you will need to either choose New from the File menu [or New from Template, or Open a saved document], or select the New button on the Standard bar.

Before you can get started, CorelDRAW needs you to tell it what type of new document you would like to create. The following illustration will help guide you when Creating a New Document for the first time. Just like the Welcome screen, at the lower left you can check the Do Not Show Again box. However, it is not a bad idea to let this box appear each time. Without this dialog, you will start a new document with default settings, and this could cause issues with page size, color settings, etc. For example, a document set up for RGB color mode will not look accurate if you print it with commercial CMYK inks.

• **Name** When saving a document, you can name it. If you name the document at the beginning of your session, all you need to do is press CTRL+S at any time to save your work.

• **Preset Destination** A destination in computer graphics terms mean “where the design you draw will be displayed.”

• **Size, Width, and Height boxes** These options are where to set your page size. Although you can change your page size at any time within CorelDraw, it’s nice to get this detail taken care in the beginning. There are a number of different units of measurements you can choose from and select Landscape or Portrait orientation.

• **Number of Pages** You can add, take away, and rearrange a multiple page document at the beginning of your session, or anytime throughout.

• **Primary Color Mode** Color mode for a graphics file holds great importance on your work. It effects how colors are printed and displayed. You can choose from RGB or CMYK.

• **Rendering Resolution** The word resolution here means how many dots you want the printer to use to render your artwork to the desired material(s).
• **Preview Mode** The best option is Enhanced mode. It will provide the maximum viewing quality.

• **Color Settings** This is a crucial feature that greatly effects and protects your artwork when printed.

• **Relative Colorimetric** This setting does not preserve the whitest whites, but rather shifts all colors and all brightnesses to the nearest colors that the CMYK color space can express. Relative does exclude certain colors.

• **Absolute Colorimetric** The White Point and Black Point, unlike Relative, is preserved in Absolute Colorimetric. This guarantees that highly identifiable colors are reproduced accurately.

• **Perceptual** This conversion method takes the entire range of colors from one device [such as your computer screen], and compresses it to fit the destination device [such as the printer]. However, it may result in all the colors in the artwork changing, even if only a couple were out of CMYK range.

• **Saturation** This is for a specific type of artwork – highly comic book-like artwork. When color accuracy is not important this is your option.

Finally, you can save your Custom settings by clicking on the 3.5” floppy disk icon next to the Preset destination option and then giving it a specific name.

Now let’s move on to Exploring the Features that will help you Increase Productivity.

1.2 Exploring Features and Increasing Productivity

Utilizing Your Workspace

Once your document has loaded and are ready to begin, the vast number of options and tools can make one feel just a bit overwhelmed. Don’t worry, you have more help than you know at the touch of your fingertips. You have the capability to refine, redefine, and customize your document with a few clicks and don’t forget, you also have a tutor right within the workspace.

The Page Shadow

The *page shadow* is the medium gray trim around the right and bottom of the drawing page in the drawing window. Although it may not seem like it holds much importance and can be mistaken for merely an artistic embellishment, it is actually a shortcut to an array of useful options. Whether you want to change the page orientation or resolution, it’s all just a double-click away. You can find some of these options in the Property bar, but by using the Pick tool, you can double-click the shadow that opens up the Options dialog.
Page Options on the Property Bar

The terms Page Type or Page Size offer more options that what those words make it sound like. In CorelDraw you have control over many more useful things than you think. All you have to do is switch to the Pick tool to display the properties on the Property bar.

Let’s take a closer, more detailed look, into the purpose of these features and how they can save you time.

- **Dimension number box** These are defined as the numerical entry fields for the units you’ve selected for the current page size. You can change the page size at any time, merely by typing in the value. No need to type in the abbreviation for the units, as you the software knows you have already selected a specified setting when the document was created.

- **Elevator buttons** Elevator buttons are, the majority of the time, located to the right of the dimension number block fields. Just as the arrows suggest, the up arrow increases the values and the down arrow decrease the value.

- **Portrait and Landscape Orientations** With a simple click of a button, you can rotate your page by 90 degrees.

- **Set Dimensions for All Pages** After you set a new page you can click this button to have ALL the pages in your multipage document identical.
- **Set Dimensions for Only the Current Page** Click this button while viewing the specific page, if you want only the current page unique in size.
- **Units drop-down** If you select this button a drop-down list of units will appear. You can change all features that display and use units.
- **Treat All Objects As Filled toggle** A toggle is just a computer term used for an “on/off switch.” This is a very helpful feature to artists, especially those that are used to programs such as Illustrator. When toggled (or “on”) the icon has a slim outline around it. This comes in handy when you want to keep an object unfilled but the outline width is so thin the object is hard to select.

![Image showing the Treat All Objects As Filled toggle](image)

- **Nudge Distance** The arrow keys on a keyboard are often used to move a selected object a predefined distance, or nudge distance. However, you can also use the elevator buttons to nudge an object. This is a great tool to use when you have an object that needs to be moved while you edit another object but need it returned to its original position.
- **Duplicate Distance** A quick and easy way to copy and paste an object is CTRL+C then CTRL+V. However, when using this shortcut, it copies the object directly on top of the original. If you press CTRL+D, it will duplicate your selected object and then you can use the fields to select where the copy will appear.

A Quick Hint

The Toolbox has a vast number of tools to enhance your creativity and many of the tools you see are only at the top face of the tool group. Look a little further at the flyout and there lies even more different neighboring tools. The pen tools, edit tools, and effects tools all contact these flyouts. However, with so many options you may not know which one is the best option for you. Helpful Hints are just a click away. Select Help → Hints, and once you select a tool on the Toolbox, the Hints docker will provide an explanation of what the tool is most useful for.
Meet Your Three New Friends: CTRL, ALT, and SHIFT

These three modifier keys are used in a large number of programs to extend a command. In CorelDRAW, these modifier keys will become your best friends as they can be used to change a tool’s function. Although each do something different depending on the tool selected, they do have some commonalities.

- **CTRL** This is an abbreviation for *Control*. However, in CorelDRAW you should also think of it as *Constrain*. When holding down CTRL it will constrain the dimensions of an object. For example, if you are using the rectangle tool, if you hold down CTRL while you drag, it will keep the object dimensions a perfect square.

- **ALT** This key offers alternatives to the basic command or tool you are using. ALT(ernatives). ALT is not as common as CTRL or SHIFT, but it will come in handy from time to time. For example, when using the Bezier tool, you generally end up with a curved path segment. However, if you hold ALT while click+dragging with this tool, it creates a straight line segment.

- **SHIFT** This modifier keys is the “add to” key. For example, if you are using the Pick tool, SHIFT-clicking on objects adds to the current selection of objects. If you are drawing shapes with object tools, such as a Polygon, Ellipse, and/or Rectangle tool, holding SHIFT before you click-drag will draw the object from the center outward rather than from the corner.

*R=Remember that modifiers can be used in combination.*

The Power of a Right-Click (of the mouse)

The mouse holds a great deal of power in CorelDRAW when you understand what right-clicking and setting up the mouse wheel actually does. *Tablet users can access the same power by using pressure and buttons on their stylus.*

The Right-Click Menu

Although it may go by many names, Windows has supported a pop-up menu, or a *contextual menu*. What this means is that the menu commands on the pop-up menu change, depending on which tool is currently selected.
Dropping a Copy of the Selected Object

- **Right-click+drag, release, use the pop-up menu.** This is the easiest way to copy an object quickly if you are just getting used to a point-and-click device.

- **Left-click+drag, then click both buttons, then release.** This is considered the traditional “drop a copy” CorelDRAW technique.
- Hit the SPACEBAR Key repeatedly while left+dragging a shape to make multiple copies. This method is used for duplicating when you want a quick way to populate a page with the same object.

Page Navigation the Smart Way

There are a number of shortcuts in CorelDRAW but only a handful that you should consider memorizing.

- If you press down on the mouse wheel while dragging, you temporarily toggle to the Pan tool, which allows you to drag your view of the document window in any direction you choose.
- If you roll the mouse wheel away from you, causing a clockwise rotation of the wheel, you zoom into the current document. Rolling the mouse wheel toward you will zoom out.

Don’t Forget About the Standard Bar

The Standard bar is an element that doesn’t change or move (unless you deliberately hide it); the features remain the same no matter the tool you choose. In Corel X7 the Standard bar has been revamped and simplified to bring you only the most needed features.

Here are some of the features you will want to become familiar with:
• **Import** simply means to *bring a copy of something into the drawing window and the original has not been touched*. If you have worked in Adobe Illustrator before you might refer to this as placing a file.

• **Export** is the opposite of import, but does not necessarily the same as saving a file. CorelDRAW provides its users with very extensive export filters. This even includes exporting objects as typefaces. For example, if you need a JPEG or PNG file you can do so from the Export dialog. However, you remember that you are not sending the original artwork anywhere, but a copy, usually a different file format.

• **Zoom Levels** In this box you can select from a number of preset resolutions or enter in a custom value. The maximum zoom level is 264,583 percent, and the minimum is 1 percent.

• **Show/Hide Rulers** This button toggles on and off to display and hide the rulers on the top and let of the drawing window border. **TIP** You can move the rulers anywhere in the drawing window by SHIFT+dragging a ruler.

• **Show/Hide Grid** When in View -> Pixels display mode, this button toggles the visibility of the different grid on and off, however a grid can continue to Snap To objects you move around, even when visibly hidden.

• **Show/Hide Guides** This setting shows/hides any guidelines in a template or guides you’ve added to your document; this button has no effect if there are no guidelines in your document.

• **Snap To settings** This drop down list offers options to make each interface object become magnetic [“sticky”] or not, which is useful when you want to enable the stickiness of the pixels in a photo you imported.

• **Welcome Screen** In case you need to watch a tutorial video right away, or you disabled the Show Welcome Screen option, this button will give you access to the welcome screen.

• **Options** The Options dialog is the nerve center for customizing both the way your documents behave and look; but also how CorelDRAW behaves and looks. The is probably one of the most important dialogs you’ll need for overriding default settings. **SHORTCUT – CTRL+J**

• **Application Launcher** Although Corel CONNECT has its own button on the Standard bar, this drop-down list affords access right within CorelDRAW to all the other modules included in the X7 Graphics Suite.

**Shortcut Keys You’ll Want to Memorize**

Here is a list of important key combos, modifiers, and other shortcuts in X7 that you’ll want to memorize. If you do, before long, CorelDRAW will seem more transparent, and the only thing you’ll need to concentrate on is the work itself.
File Commands

Start a new document .................. Ctrl+N
Open an existing document ............... Ctrl+O
Save the active drawing .................. Ctrl+S
Saves the active drawing with a name.. Ctrl+Shift+S
Export the document or objects ......... Ctrl+E
Import (link) a file into the active document .... Ctrl+I
Choose printing options, and print ........ Ctrl+P
Exits CorelDRAW and prompts to save drawing ... Alt+F4

Main

Set your workspace preferences (Options) ........ Ctrl+1
Brings up the Property Bar .................. Ctrl+Enter
Select all objects in the document ............ Ctrl+A
Deletes the selected object(s) ............... Delete
Duplicates the selected object(s) (with offset) .... Ctrl+D
You can change the duplicate offsets by Menu Tools->Options->Document->General->Duplicate offset section
Join curves using endpoint tolerance .......... Ctrl+Shift+J
Goes to the next page ........................ PgDn
Goes to the previous page ..................... PgUp
Cancel the previous action .......... Ctrl+Z or Alt+Backspace
Reapply the last undone action ................. Ctrl+Shift+Z
Repeats the last operation ..................... Ctrl+Y
Force a redraw of the drawing window ......... Ctrl+W
Display a full-screen preview of the drawing .... F9
Toggles the last two used view qualities ....... Shift+F9
Selects object(s) by specified properties .... Ctrl+F
Define Selection Group 0 - 9 ............... Ctrl+0 - Ctrl+9
Add to Selection Group 0 - 9 ............... Alt+0 - Alt+9
Recall Selection Group 0 - 9 .................. Ctrl+0 - Ctrl+9
Copy to the Clipboard ........................ Ctrl+C or Ctrl+I
Cut to the Clipboard .......................... Ctrl+X or Shift+Delete
Paste in the document ....................... Ctrl+V or Shift+I

Open/Close Dockers

Object Properties docker .......................... Ctrl+Enter
View Manager docker .......................... Ctrl+F2
Symbol Manager docker ......................... Ctrl+F3
Object Styles docker .......................... Ctrl+F5
Color Styles docker .......................... Ctrl+F6
Envelope docker ............................... Ctrl+F7
Contour docker ............................... Ctrl+F9
Insert Character docker ....................... Ctrl+F11
Lens docker ..................................... Ctrl+F3
Position docker .................................. Ctrl+F7
Rotate docker .................................. Ctrl+F8
Scale and Mirror docker ....................... Ctrl+F9
Specify the dimensions of the object .... Alt+Shift+F10, Shift+F8
Step and Repeat docker ......................... Ctrl+Shift+D

Zoom, Pan and Scroll Document

Bring up the Navigator window ............... N
Pan (drag) the drawing ....................... H
Pan document <, >, >, > .................. Alt+Arrow buttons
Zoom ............................................. Z
One-shot zoom action ......................... F2
Zoom out ....................................... F3
Zoom to fit all objects ....................... F4
Zoom to fit the entire page .................. Shift+F4
Zoom only the selected object ............... Shift+F2
Scroll vertically .................. Alt+mouse wheel
Scroll horizontally .................. Alt+mouse wheel

Grid, Guidelines and Snapping

Align objects with the document grid ........ Ctrl+Y
Align objects with other objects in the document .... Alt+Z
Enable or disable alignment guides ............ Alt+Shift+A
Align and Distribute .......................... Ctrl+Shift+T
Align objects with other objects by using dynamic guidelines .................. Alt+Shift+D

Toolbox Tool Selection

I Artistic Media tool. Add artistic brush, spray and calligraphic effects by using freehand strokes.
F7 Ellipse tool. Draw circles and ellipses by dragging in the drawing window. Double-click the tool opens the Ellipse tool page of the Options dialog.
X Eraser tool. Remove unwanted areas in a drawing. Double-click the tool opens the Eraser tool page of the Options dialog.
F5 Freehand tool. Draw curves and straight line segments. Double-click the tool opens the Freehand tool page of the Options dialog.
H Pan tool. Drag hidden areas of a drawing into view without changing the zoom level.
G Interactive Fill tool. Dynamically apply the current fill to an object in the drawing window.
M Mesh Fill tool. Fill an object by blending multiple colors or shades arranged over a mesh grid.
F11 Fountain fill. Fill an object with a gradient of colors or shades in fountain fill dialog.
Shift+F11 Uniform fill. Choose a solid fill color by using color palettes, color viewers, color harmonies or color blends.
Y Polygon tool. Draw polygons by dragging in the drawing window.
F6 Rectangle tool. Draw squares and rectangles by dragging in the drawing window.
F10 Shape tool. Edit a curve object or text character by manipulating nodes. Double-clicking the tool selects all nodes on the selected object. Hold [Alt]+[Shift] to activate marquee-style node selecting.
Shift+S Smart drawing tool. Convert freehand strokes to basic shapes or smoothed curves. Hold [Shift] while sketching to erase the shape or line from the last point drawn only.
F8 Text tool. Adds and edit paragraph and artistic text. Click on the page to add Artistic Text. Click and drag to add Paragraph Text.
Shift Toggles between Eyedropper and Paintbucket tools while either is selected.
Space Toggles between the current tool and the Pick tool.
Ctrl+Space The same but in the text editing mode.

Curve Editing

Convert the selected object to a curve ....... Ctrl+Q
Toggle the selected nodes between cusp and smooth .... C
Toggle the selected nodes between a line and curve segment ........ L
Toggle the selected nodes between smooth and symmetrical .......... S

Fill and Effects Dialogs

Open color balance dialog .......................... Ctrl+Shift+B
Open brightness, contrast or intensity dialog .... Ctrl+B
Open hue, saturation or lightness dialog ......... Ctrl+Shift+U
Sample a color from the desktop to apply to the selected nodes .......... Ctrl+Shift+E

Table editing

Merge cells into one cell .................. Ctrl+M
Delete the selected table ..................... Delete
Also the Text relative commands are valid
A Brief Anatomy Lesson on Dockers

Dockers are panels—palettes—where many different commands and controls related to specific tasks are grouped together in one handy location. Dockers put more of Corel’s power right at the tip of your cursor without forcing you to dig through lots of dialog boxes or flit between various toolbars and menus. In general, if you display a docker such as Window | Effects | Extrude, you might initially think it’s just a duplication of what’s on the Property bar when the (interactive) Extrude tool is your current tool. It’s not, however, and here’s the important difference: you can work on refining the extrude properties of an extruded shape indefinitely when the Extrude docker is open or minimized—it’s simply there; you set it down on the counter, but you didn’t put it away, in a manner of speaking. In contrast, when you use the Extrude tool to work with the Extrude features on the Property bar, you will lose those features if you need a different tool for a moment because the Property bar is context-sensitive—it offers commands specific to the current tool.

These controls can be anchored to the edge of the screen and reduced to tabs by clicking the active docker’s tab (not its title bar). You can tear them off (undock them) and float them right next to where you are working in the interface. You can make your own groups of commonly used dockers. And, if you have a multi monitor setup, you can even drag them out of the application window and stick them on a different monitor so you have the maximum amount of space for your drawing window. It all begins on the Window | Dockers menu.

Opening, Moving, and Closing Dockers

Dockers can be opened using shortcut keys (if your memorized list isn’t complete!), through menu commands, or through toolbars. For example, to open the Contour docker, choose Window | Dockers | Effects | Contour, or press CTRL + F9.

Dockers open to their last-used screen position and state, either docked or undocked. While docked, they are, by default, attached to the right side of your application window. Alternatively, dockers can be positioned on the left side of the screen or anchored on both sides of the screen with your document window in the middle.

While undocked, dockers float above the document window and can be positioned anywhere on your monitor screen(s). Docked or floating is not an all or nothing choice; you can have some dockers docked and some floating at the same time. The only situation you can’t have is more than one copy of a specific docker open at one time.

Nested (Grouped) Dockers

When more than one docker is open, they often appear nested, meaning that multiple dockers overlay each other on the right side of your application window. While dockers are nested, clicking their individual title bars or name tabs brings them to the front of the interface.

A very quick way to build your own group of floating dockers—new to version X7—is to begin with one docker: display it by using the Window | Dockers command. Drag it by its tab into the drawing window to float it. Then click the Quick Customize button at bottom right of the floating docker. As you can see in the next illustration, the Quick Customize button offers an incredible wealth of additional, docking palettes.
By default, the new docker you checked appears in the right-side, docked position. You then click+drag the docker by its tab (not its title bar) and then drop it into the right column where the first floating docker’s tab is located.

To separate a docker when it’s nested, you perform the reverse operation. You drag the tab away from the group until you see a gray preview box of where the docker is going to land.

Finally, if you want to maximize your drawing window area but still keep docked and nested dockers handy, you click any tab, and the entire collection of dockers collapses to a neat row of titled tabs. To access any of the dockers once again, you click the tab of the docker you need and the group extends again with the selected docker open and the others tabbed in the right column, an improvement over docker behavior in previous versions of CorelDRAW.
CHAPTER 2
Getting Started
2.1 Single and Multi-Page Documents

You have an idea for promoting your product or service; you have your graphics, and you have some body copy and a snappy headline in mind. The next step is to define the dimensions within which you express your promotional idea. You’ll learn about layout styles, page dimensions for your screen and for printing, page reordering, and in the process, gain a good working knowledge of what you need to do—and what you can tell CorelDRAW to do—to create a page that suits your ideas.

Setting Up Your Document Page

Every new file you create has its own set of page properties that have two attributes: physical properties and display preferences. The physical properties refer to the size, length, and color of each page as you’d define a physical page in the real world. Display preferences control how page values are viewed. Let’s begin with the most common options and then move on to the more specialized features.

Controlling Page Size and Orientation

If you’ve unchecked the Always Show The Welcome Screen At Launch checkbox, the default size of a new document is CorelDRAW’s default, which might depend on the language version of CorelDRAW you use. For this US author, it’s US Letter, 8 1/2” by 11”, but this can be changed. The quickest route for document size change is through the Property bar while the Pick tool—and no objects—are selected. The Property bar features options for setting your page to standard-sized pages, custom sizes, and orientation. If you have a multi-page document, the Property bar also has ways to change all pages at once or only the currently visible page.

The Paper Type/Size and orientation options control the format of your document. When you have a specific format for a design you need to print, the following sections cover the options available to you in CorelDRAW.

Paper Type/Size

To make sure your CorelDRAW page matches the paper in your printer, clicking a Paper Type/Size option from the Property bar is the quickest method. From the drop-down box, you can choose Letter, Legal, Tabloid, or other common sizes. Once you’ve made a selection, the dimensions are automatically entered as values in the Page Width and Height boxes on the Property bar. If you have a limited need for different paper sizes, click
the Edit This List button at the bottom of the drop-down list, and you can delete seldom-used sizes: click Delete Page Size in the Options box.

• **Page Width and Height** You are not limited to a page size that’s the same as the paper in your printer; page width and height values can be freely adjusted to match just about any paper size. For a custom page size, type specific values directly into the Page Width and Height boxes, and then press ENTER.

• **Landscape/Portrait Orientation** Clicking either Portrait or Landscape on the Property bar while using the Pick tool (with no objects selected) sets the page orientation. If the page width you enter is less than the page height entered, the orientation is automatically set to Portrait, and vice versa for Landscape. Changing from one orientation to the other automatically switches the values in the Page Width and Page Height fields.

• **All Pages/Current Page** You can create a document up to 999 pages long, with different pages set to any size or orientation. The All Pages and Current Page buttons operate in “either/or” fashion—like the orientation buttons—so you can set the page size either for all pages in your document at once (the default) or only for the current page. To set only the current page to be different from the others in your document, click the right of these two buttons on the Property bar (directly to the left of the Units dropdown) and set your new page size and orientation as needed. Other pages in the document aren’t resized when you choose this option.

Page Viewing Options

With CorelDRAW at its default settings, when you select File | New, you’ll see a rectangle in the workspace. This rectangle represents your document page in height and width. However, what you won’t see is how your page will be printed to a personal printer or to a commercial press. Whenever you print a page, you’ll see two areas called the **printable area** and **bleed area**, and you can add nonprinting guidelines to provide a page preview … so objects and text at the edges of your work don’t get partially printed. You certainly want these features visible when designing for print; the grippers on printers often prevent edge-to-edge prints.
Naming Pages

Whenever a new document is created, CorelDRAW automatically creates the names, such as “Page 1,” “Page 2,” and so on. These default page names can be customized using several different methods.

When creating web page documents—where each document page is a separate web page—adding a unique name to the page creates a title for the exported page. When your document is printed, page names can also be printed in the margins, can indicate the contents of the page, and can provide other page-specific information.

Using the Rename Page Command

Use the Rename Page command to assign a unique name to pages. Choose either Layout | Rename Page, or (more quickly) right-click the Page tab of your document window and then choose Rename Page from the pop-up menu to access the command. The Rename Page dialog can rename a page with a name of up to 32 characters, including spaces.

Navigating a Multi-page Document

To go to different pages in a document, click a Page icon at the lower left of the document window. If the page isn’t in view, you can scroll to locate it, or (for lengthy documents) open the Go To Page dialog, shown next, by clicking between the Next Page and Previous Page buttons at the lower left of your document window. It’s the field that lists the pages, “2 of 4,” for example; the field turns light blue when you click on it. You can move quickly to a specific page in your document with this feature.
Using the Object Manager

The Object Manager docker offers the advantage of mass-editing page names from within a single docker. To open the Object Manager, choose Windows | Dockers | Object Manager. Once the docker is open, you want to be able to see all the pages in your document, so first make sure the Layer Manager View (the third button at top) is set to All Pages, Layers, And Objects. Then click the first of the three buttons at top, Show Object Properties.

Page Commands

There are several ways to add and delete pages from a document; using menu commands, shortcuts while holding modifier keys, and certain page views are three methods. However, quick is best, and in this section, you’ll see the most convenient way as well as methods that are easiest to remember. You can decide for yourself which best suits the way you work.

Inserting Pages and Setting Options

From the main menu, choose Layout | Insert Page to open the Insert Page dialog, which has a host of options for specifying your new page properties and where you would like to add the new page in relation to your existing pages.
Deleting Pages

Deleting document pages can be done by choosing Layout | Delete Page from the main menu; you can delete one or more of the existing pages in your document. By default, the dialog opens to display the current page as the page in the Delete Page box, shown at right, but you may select any page before or after your current page if you choose. To delete an entire sequence of pages, click the Through To Page option, which enables you to delete all pages in a range between the page specified in the Delete Page box through to any page following your current page. Pay careful attention to the word “Inclusive” after the last page number: if you type, for example, 10 when you want to delete pages 1–9, well, oops—there goes your day unless you press CTRL+Z immediately!

Moving and Duplicating Pages

You’re going to create such fantastic content in CorelDRAW that you might not even want to delete it. Instead you might want to move and/or copy pages. To move a page, use a click-drag action on the Page tab to drag it to a new position. To copy a page—and all its contents—thus creating a new page order, hold CTRL while click-dragging the Page tab, dragging the page to a new position. You can see this in the next illustration. CorelDRAW does not duplicate the name of a user-named page; you’d wind up with an organizational nightmare if it did, so it’s a good practice to name a duplicate page after you’ve created the copy.

Using the Page Sorter

Page Sorter is a view that provides you with a broad look at your document and all its pages. In this view, you can add, delete, move, or copy pages in a single view. You can also change the Paper/Type Size and the page orientation of all the pages or just selected pages. A CorelDRAW document can contain pages of different sizes, which can be very handy when you are designing matching business cards and letterhead or other similarly related materials. To open your document and all its pages in Page Sorter view, choose View | Page Sorter View. Page Sorter displays all pages in your document.

In Page Sorter view, a single click selects a page. Holding SHIFT while clicking pages enables you to select or deselect contiguous multiple pages. Holding CTRL while clicking enables you to select or deselect noncontiguous pages. The following actions enable you to apply page commands interactively to single or multiple page selections.
- **Move page(s)** To move a page and change its order in your document, click-drag the page to a new location. During dragging, a vertical I-beam appears, indicating the insertion point for the page or the first page of the selected sequence of pages.

- **Add page(s)** To add pages to your document, right-click any page and choose Insert Page Before or Insert Page After from the pop-up menu to insert a page relative to the selected page.

- **Copy page(s)** To copy pages—and their contents—hold CTRL while click-dragging the page to a specific location. During dragging, a vertical I-beam appears, indicating the insertion point for the page copy or the first page of the selected sequence of pages.

- **Name or rename a page** To add a new name or change an existing page name, click the page name below the page to select it; click a second time to highlight the page title, and enter a new name; then press ENTER. You can also rename a page by right-clicking a specific page and choosing Rename Page from the pop-up menu to highlight the page name for editing.

- **Change page size/orientation of all pages** In Page Sorter view, the Property bar displays typical page property options for applying standard or custom page sizes and changing the orientation between Landscape and Portrait.

  If you want to change the orientation of all of the pages in the document, click the Apply Page Layout To All Pages button on the Property bar and then click either the Portrait or the Landscape button to change all pages to that orientation.

- **Change page size/orientation of selected pages** If you only want to change the orientation of some of the pages, click the Apply Page Layout To Current Page button. Then select the pages you want to change, and click the Portrait or Landscape button to change the page(s) to the desired orientation.
Changing the orientation in Page Sorter view not only changes the view, but also changes how the pages themselves are oriented in the document. As you can see above, the first and last pages have drawings that look better in Portrait view; you CTRL-click pages 1 and 4 in this example, click the Current Page button, and both the Page Sorter view and the pages themselves are reoriented. If you want to rethink this dynamic change, repeatedly pressing CTRL+Z (Edit | Undo) to restore your document.

Exiting Page Sorter view is easily done; click the Page Sorter View button. Any changes applied while in the Page Sorter are applied to your document.

**Working with Guidelines and Guide Layers**

Now that you have a handle on page setup, multi-page particulars, and page dimensions, it’s time to turn to perhaps the first thing you put on a page: a guide. Guides help you design with accuracy and give you a perspective on a composition so you save time second-guessing where items should be in relation to one another.

CorelDRAW’s page guides, dynamic guides, and objects you put on guide layers don’t print. Guides are just like the blue pencils some of us used on drafting tables before computer graphics. With today’s digital tools and electronic guidelines, you have the precision only a computer application such as X7 can offer, plus the same speed and ease with guides as any object you draw on a page.

**Using Guidelines**

Guidelines placed on your document page extend between the top, bottom, left, and right edges of the document window. Guidelines appear as vertical and horizontal dashed lines, but guidelines can also be rotated. In CorelDRAW, guidelines are considered unique objects—they have their own properties but are manipulated in many ways like objects you draw.

To view and hide the display of guidelines in your document window, right-click a blank area of the page and then choose View | Guidelines. By default, a new document doesn’t have any guidelines—you need to create them. To have objects snap to the guidelines you create, choose Snap To | Guidelines on the Standard bar.
Manipulating Guidelines

• Make sure the rulers are visible; they’re where many of the guides live. With the Pick tool selected, and no objects selected, right-click and then choose View | Rulers. Then, using any Toolbox tool you like, click-drag beginning on a ruler, and release the mouse button anywhere in the workspace. Although dropping a guide on the page is most useful, you can certainly create a guide on the pasteboard area to measure and align objects not currently placed on the page.

• To move a place guide, you need to select the Pick tool. Then hover the cursor over the guide you’d like to move; when the cursor turns into a double-headed arrow, you’re all set and all you need to do is to click and drag the guide.

• If you want to eliminate a guide, hover over it with the Pick tool until you see the double-headed arrow cursor (to indicate you’ve selected it), click the guide to confirm the guide is “in focus” in the interface, and then press DELETE or CTRL+X.

• If you need a guide that travels diagonally, you create a guide first. Next, click it to select it, and then click a second time, and you’ll see a center and rotation handle. One of the neat things about rotating a guideline is that you can move its center point before dragging on the rotation handles to, for example, rotate a guide around the corner of a shape you have on the page. You move a slanted guideline exactly as you do a perfectly horizontal or vertical guide—you click-drag it to reposition it. In the illustration of the light bulb, where the design needs shafts of light emanating from a center point, that is not the default center of a guide that’s put into slant mode. No problem; you change the center of rotation, and then drag a rotation handle clockwise or counterclockwise.
Controlling Guideline Properties

If you place several guidelines at an exact spacing, you manage all guidelines via Tools | Options | Documents | Guideline. Separate subsections are here for controlling the vertical, horizontal, and slanted guidelines. You can also right-click either of the rulers, choose Guidelines Setup, and a Guidelines docker appears. Additionally, while a guideline is selected in a document, you can open the Guidelines docker by clicking the Guidelines button on the Property bar.

The engineers at Corel have simplified the process and centralized your options for guidelines placement, all through the Guidelines docker. You first choose Horizontal or Vertical Guides from the drop-down list; the Y box becomes active; and you type in a value, then press Add. Remember, the Y measurement is, by default, the same as the rulers: values increase from bottom to top. You also have a lock option. You can change a guide’s value on the page by typing in a new value after you’ve clicked the guide in the list and then click the Modify button. Additionally, at any time, your cursor can “step out of the box”; you can make a manual adjustment and that adjustment is reflected in the inches value on the Guidelines docker’s list.
Adding, Deleting, and Moving Guidelines

You can adjust guides using the Guidelines docker’s Modify feature. The list below the main area on this docker contains the position of the existing guidelines on your document page. Here are steps to perform common tasks:

1. To create a new guideline, first choose Horizontal or Vertical from the button drop-down. Now, enter a value in the Horizontal, Vertical, or Angled num box according to the position where you want the new guideline to be created. Then click the Add button. A new guideline is created where you want it.

2. To move an existing guideline, click it in the list, type the new value in the x or y num box, and then click the Modify button. The selected guideline has moved, and on the list, you can see its new location is correctly entered.

3. To delete a specific guideline, select it in the list, and then click the Trashcan button at lower right on the docker. The selected guideline is gone from the page, and as you see the page from your current view, your document is immediately updated.

4. To remove all guidelines in the list, marquee-select all the entries on the list, and then click the Trashcan button.

Locking and Unlocking Guidelines

All guidelines are editable by default; you can move or delete them using the Pick tool. But occasionally a guide that moves accidentally is as welcome as a friend holding your ladder sneezing accidentally. You can lock guidelines simply by selecting the guide with the Pick tool; the cursor should turn into a double-headed arrow straddling the guide, and then you choose Lock Object from the pop-up menu when you right-click. Unlocking a guide is the inverse process of locking one. With the Pick tool, right-click over the guide and then choose Unlock Object from the context menu.

Working with the Guides Layer

Guides belong to a special layer—named Guides on the Object Manager—reserved just for these assistants. To view the layers in your document, open the Object Manager by choosing Window | Dockers | Object Manager. There are two Guides layers: if you click the Guides (All Pages) entry on the Object Manager list under Master Page, every guide you create will be featured on this page and on every page you create in the future in this document. On the other hand, every new page, including the first page, comes with its own Guides layer, and guides specific to a layer will not show on other pages. By default, all guidelines on the Guides layer are set as Visible, Non-Printable, and Editable. You can change any of these by clicking the symbols to the left of the Guides layer in the Object Manager docker.

To set all options for a layer at once—including the display color of objects on the Guides layer in the Object Manager docker, right-click the layer name, for example, the Guides layer, and then choose Properties from the pop-up menu. Doing this opens the Guides Properties dialog to reveal further options.
Make an Object a Guideline

You can make almost any drawing shape into a guideline. Going the other way around, you can also turn a guide into a drawing object, and moving any guideline to a drawing layer automatically makes it a printable object. You use the Object Manager docker to move objects between layers. Moving any object to the Guides layer makes a guideline, with all the same properties as a typical guideline, except it doesn’t have to be a line—spirals and trapezoids make useful guides. After an object becomes a guideline, anything you draw in its proximity snaps to it, as long as the Snap To Guidelines option is active. Think of the artwork you can clean up and refine when you’re tracing over the original with a drawing tool that snaps to the original.

To move an object to the Guides layer, follow these steps:

1. Create or select at least one drawing shape that you want to use as a guideline.
2. Open the Object Manager docker by choosing Windows | Dockers | Object Manager.
3. Expand the tree directories in the Object Manager docker to locate both the Guides layer on the Master Page and the shape you want to make into a guideline so both are in view.
4. In the Object Manager docker, click-and-drag your shape icon (not the shape on the page) from its current page and layer to on top of the Guides layer title on the Master Page. As you drag, your cursor changes to an arrow pointing at representations of layers, indicating the shape’s current position as it is dragged. You then release the mouse button and the operation is a success.

The New Alignment and Dynamic Guides Docker

Corel Corp. has made a dramatic change and improvement to Dynamic Guides, adding Alignment and Margins between aligned objects as an additional perk in X7. You’ll find the Alignment and Dynamic Guides docker under Windows | Dockers. The docker actually has three areas of functions—Alignment, Guides, and Margins—and you can enable all of them (although your screen might become cluttered with data you don’t need), or uncheck one or more of the functions to use only what you need.
Alignment Properties on the Docker

Before moving forward, do not mistake the Alignment feature on this docker for the Align and Distribute docker (CTRL+SHIFT+A). The Alignment and Dynamic Guides docker is a manual feature–it reports to you and offers suggestions but it does not align things for you. It’s a really sophisticated ruler, not a pocket calculator as analogies go.

To begin at the beginning, you must check the box for Alignment Guides on the docker before you can do anything with the Alignment and Dynamic Guides docker.

The goal here is to align the house at the bottom right of the housing.cdr file (open it and try this yourself). By simply using only the Alignment features–Margins and Dynamic Guides are disabled–you don’t have to hold CTRL to constrain movement and all you do is drag up and a little to the left until you can see that the chimney hasn’t moved horizontally at all as it’s moved up vertically–the dashed light-blue alignment guide demonstrates this when your object is aligned, and the guide disappears if your object is moved off-alignment, or you release the mouse button.

- **Object Centers** Click this button if you want these temporary guides to appear when the object you’re moving becomes aligned, vertically or horizontally, with the center of other objects on the page. This option is really good for quickly making an accurate distribution of several objects that you need to equally space apart.

- **Object Edges** This option is good to use in combination with Object Centers, so you can see exactly where in relationship to another your desired object lays. In the case of aligning a square with another square, you will see two guides, one indicating top-edge alignment and the other indicating bottom alignment.

- **Individual Objects in a Group** When you need to align grouped objects, it’s not necessary to ungroup them and then use either the Alignment and Dynamic Guides or the Align and Distribute dockers. Nope: you use the Pick tool to CTRL+click the lucky object to be aligned to something else in the drawing, and then move it around until the temporary guides tell you that your object is now realigned.
• **Intelligent Spacing** This feature is sort of like an equidistant distribution function. In the illustration here, you can see that the diamond is selected and the goal is to place it an equal distance between the club and the spade. You’ll see these unique divider guides when the object is in the desired position, and the Intelligent Spacing option even tells you onscreen what the distance is between objects, in this case the x-spacing (horizontal) is 0.115 inches. Naturally, if you have units set up to a value other than inches, Intelligent Spacing will report picas, centimeters, and so on.

• **Intelligent Dimensioning** Ordinarily, you’d want to hold CTRL to proportionately scale a selected object larger or smaller, but this is unnecessary when you’ve selected an object and clicked the Intelligent Dimensioning button. Open Brochures.cdr and give this a try. The left pamphlet is smaller than the one at right; also they are identical copies of each other. Suppose your boss unreasonably demands (at a quarter to five) that the left pamphlet be the same size as the larger one at right. No problem; as shown in this illustration, you click the Intelligent Dimensioning button in the Alignment Guides area of the docker, and then with the Pick tool, you drag any corner control handle away from the center of the tiny pamphlet. Once the special blue guies appear for either the height or the width, you can release the mouse button and both objects are identical out to three decimal places.
Adding Margins to the Mix
Aligning things can be an exciting sport, especially on rainy days, but artistically, there are often times when you need to not only align objects, but also add space—a margin—between the objects. And this is where the Margins area of the Alignment and Dynamic Guides docker comes into play.

Like the alignment options, margins can be set to any color and be dashed or solid in appearance, so there’s zero chance that what you’re aligning will be the same color as these guides. The feature is simple to use and to explain: You should have Object Edges and/or Object Centers enabled in the Alignment Guides area first or the margins won’t be awfully relevant to your aligning efforts. Enable Margins you want between the aligned objects. Pick one of the objects and then start dragging it toward the other object. See the following illustration; it can’t hurt. You’ll see by the alignment guides when the tops and or bottoms are aligned, but then you’ll see markers, shown in the next illustration, that tell you when you’ve reached the desired margin between the objects.

Dynamic Guides
Okay, this is the weird and wonderful part of the Alignment and Dynamic Guides docker. Dynamic Guides can actually help you draw technically accurate objects because your cursor snaps to the nearest of angles that you enable on the docker.
• **Default angle increments** You have a number of degrees, spread out in 15 degree increments, that you can use (or not use by unchecking their boxes) when the Dynamic Guides feature is enabled. This means that every time you draw a straight line (let’s say you use the Polyline tool), end the path segment, and begin another, when you come to a 15 degree or 30 degree angle relative to the angle of the first path segment—CorelDRAW pops up onscreen info called a tool tip, informing you that you are beginning this next segment from the edge of the preceding one, the number of degrees off the original path’s orientation, and how far you’re traveling away from the end of the first path.

• **Extend Along Segment** Without needing to pull a guide out of a ruler and rotating it so it’s perfectly aligned with a path you’ve drawn, you can activate Extend Along Segment, and the temporary Dynamic Guide will keep you on the straight and narrow.

• **Snap To Tick spacing** There are invisible tick marks when you drag a path segment; you’ll “feel” some resistance when you use your mouse to pull the onscreen cursor a specific distance. Tick spacing is found in the Alignment and Dynamic Guides docker. First, click the right-most icon, and then the num box becomes active for Tick Spacing tweaks. You enable and disable this feature by using this button on the docker.

• **Creating a custom angle and saving the custom angle** You might find that 15 degree increments aren’t what you need—for example, to make a five-sided polygon (yeah, yeah, you could use the Polygon tool, but play with me here), you’d need an angle of 72 degrees, not to be found on the preset list. So you type in this value, click the +button to add it to the list, and off you go.
If you have any doubt that Dynamic Guides can make quick work of shapes that are exceptionally complicated, check out this next figure. It was created entirely using Dynamic Guides at default preset values and paying attention to how long each segment was using the tooltips.

2.2 Basic Shapes and Transformations

You have to begin *somewhere* with the DRAW part of CorelDRAW—and *this* is it. Therefore, you need to know the steps to create simple geometric shapes and the basic editing moves to create exactly the shape you want to fill and stroke.

Using the Rectangle Tool and Property Bar

The Rectangle tool is simple enough to use, but it doesn’t just create a four-sided, right-angle polygon—it creates a rectangle that has *special properties* in CorelDRAW. You’ll find the Rectangle tool in the Toolbox; you can quickly select it by pressing the F6 shortcut key.

The Rectangle tool gives you the option to apply corner “roundness” based on a percentage value. Roundness can be set either manually by dragging a corner with the Shape tool—the most common technique experienced Corellians use—or by using the Property bar’s Corner Roundness option, which is available when a rectangle is selected. By default, you round all four corners equally and together. However, if you unlock the Edit Corners Together toggle button, you can manually enter different values for each of the four corners, as discussed in the following section. There are several more features for changing the shape of a rectangle object that are reversible (no destructive changes are made) on the Property bar.
Drawing a Rectangle

To create a rectangle, choose the Rectangle tool from the Toolbox, and click-diagonal-drag in any direction to define its corner positions, as shown here. The act of click-dragging begins by defining the first two legs; as you drag, the corner positions can be redefined, depending on where your cursor is on the page; and then before you release the mouse button, you’ve defined the position for the remaining rectangle corners and you’ve built the remaining sides.

While the Rectangle tool is selected, notice that the cursor is a crosshair with a small rectangle shape at its lower right. As you click-drag using the cursor, you’ll also notice that the Status bar and Property bar show the coordinates, width, and height properties of your new object shape.

Setting Rectangle Corner Properties

Corner Roundness is one of three different effects you can apply and dynamically edit when you’re into rectangles. Corner Roundness, as well as the Scallop and Chamfer corner styles, can be applied to a rectangle from a value of 0 to about one-half the overall length of one of its sides. If you think about this one, a 2” rectangle can’t have more than a 1” rounded corner on each side! The Corner Roundness amount can be changed anytime while the shape remains a native rectangle, that is, as long as it has not been converted to
curves. By typing 0 into any of the size boxes while the rectangle is selected, you remove the corner style. Corner Roundness, Scallop, and Chamfer can be set uniformly for all corners (the default) or independently when the Edit Corners Together lock option is in the unlocked state.

While a rectangle is selected, use any of the following operations to change corner properties according to your needs:

• Click the type of corner style you want on the Property bar, and then either type in the size for the corner values or drag the elevator buttons up or down to adjust the size of the corners.

• Set your rectangle’s corners manually using the Shape tool, by first unlocking the Edit Corners Together toggle button, and then CTRL+dragging any corner control point away from its corner (toward a side that makes up the rectangle). Enabling Edit Corners Together causes all corners to be rounded or scalloped an equal amount by dragging on any of the control points.

• Use the Object Properties docker by pressing ALT+ENTER, clicking the Rectangle tab, and then editing any property you so choose.

Creating 3-Point Rectangles

If you want to create a rectangle and rotate all in one fell swoop, you can use the 3-Point Rectangle tool. You’ll find it grouped with the Rectangle tool in the Toolbox.

Using this tool, you can draw new rectangles at precise angles. The rectangle you create is a native rectangle shape, so you can round its corners and manipulate it as you would any other shape.
To create a rectangle using the 3-Point Rectangle tool, you click-drag—clicking sets the first point of the rectangle and the subsequent distance you drag determines both the angle and length of the rectangle. As soon as you release the mouse button, you move your cursor (without clicking—this is called hovering) to determine the height of the rectangle. A final click seals the deal and you now have a rectangle whose corners you can round and perform other operations on.

Using the Ellipse Tool and Property Bar

Ellipses are a staple of commercial design work. Essentially an ellipse is a circular shape that is not perfect. The Ellipse tool can be used to draw both circles and ellipses, but in CorelDRAW, an ellipse shape has additional, special properties, just like a rectangle can be a round-cornered rectangle. Ellipse shapes can be edited to create dramatically new shapes while retaining their elliptical properties. In contrast, a shape you might draw that looks like an oval, using the Bezier tool, for example, will have no special properties and always remains an oval.

Ellipses are easy enough to draw with the Ellipse tool and can be set in several different states: as an oval or circular closed-path, pie wedge, or arc. Pie wedges are the portions of an ellipse—like a single slice of a pie or, conversely, a whole pie with a slice removed. Arc shapes are open paths, exactly like pie wedges, except the two straight line segments are missing.

To create an ellipse, choose the Ellipse tool from the Toolbox or press F7, followed by a click-drag in any direction.

While the Ellipse tool is selected, the Property bar shows ellipse-specific options that enable you to control the state of your new ellipse shape before or after it has been created. Choose Ellipse, Pie, or Arc. A
complement is reserved for pie and arc shapes: for example, if you specify a 15-degree pie wedge, clicking the Change Direction icon changes the shape to a 345-degree wedge. Additionally, if you want a Pie or Arc to travel in a different path direction, double-click the Ellipse Tool icon on the Toolbox, which takes you to Options, where you can choose clockwise or counterclockwise path directions.

Round One with the Ellipse Tool

1. Choose the Ellipse tool (F7) and use a click-diagonal-drag action in any direction. As you drag, an outline preview of the shape appears. An ellipse shape has two overlapping control nodes (so onscreen it looks like only one node); if you drag down and left or right, the nodes will be located at 12 o’clock. Conversely, if you drag up and left or right, the control nodes will be located at 6 o’clock.

2. Release the mouse button to complete your ellipse shape creation.

Controlling Ellipse States

All ellipses have two control points (nodes—a start and an end) that overlap each other and are visible when the ellipse is selected. When these control points are separated, they create either a pie or an arc state, and each control point determines either the starting or ending angle of the pie or arc.

You can separate these control points either by using Property bar options or by dragging the points using the Shape tool. Dragging inside the ellipse’s shape creates the Ellipse Pie state. Dragging outside the shape creates the Ellipse Arc state.

To draw a new pie or arc without drawing an oval-shaped ellipse first, click either the Pie or Arc button on the Property bar before you start drawing. You can also switch any selected ellipse between these states using these buttons. By default, all pies and arcs are applied with a default starting angle of 0 degrees and a default ending angle of 270 degrees. Starting and ending angles are based on degrees of rotation from –360 to 360 degrees; this is counterclockwise in orientation.

Creating 3-Point Ellipses

The 3-Point Ellipse tool is the key for creating ellipses while setting a rotation angle (perfect circles show no possible rotation angle; we’re talking oval here). You’ll find it grouped with the Ellipse tool in the Toolbox. This tool’s operation is very much like the 3-Point Rectangle tool.
You can create ellipses at precise angles without needing to create and then rotate an existing one. The shape you create is still an ellipse with all associated properties, such as optional pie and arc states.

To create an ellipse using the 3-Point Ellipse tool, choose the 3-Point Ellipse tool, click to set the beginning point of the ellipse, and then drag to specify its width and rotational angle. Release the cursor and then position your cursor where you want the maximum height of the oval defined. Click, and your ellipse is complete.

Using Polygons and the Property Bar

The Polygon tool (the shortcut is Y) is unique to the category of vector drawing software; competing applications offer a polygon tool, but CorelDRAW’s Polygon tool produces shapes that can be edited—making dynamic changes, just like CorelDRAW rectangles and ellipses. The shapes you create with the Polygon tool can have as few as 3 or as many as 500 points and sides; by default, all polygon sides are straight paths. You’ll find the Polygon tool, together with the Star, Complex Star, and other group tools, in the Toolbox. While the Polygon tool is selected, the Property bar offers the number of sides for the polygon you’ll draw.

Drawing and Editing Polygons

To create a default polygon, you use the same click-diagonal-drag technique as you use with the Rectangle and Ellipse tools. This produces a symmetrical shape made up of straight paths. Because you’ll often want a shape more elegant than something that looks like a snack food, it helps to begin a polygon shape by holding SHIFT and CTRL while dragging: doing this produces a perfectly symmetrical (not distorted) polygon, beginning at your initial click point and traveling outward. Therefore, you have the shape positioned exactly where you want it and can begin redefining the shape.

Here, you can see the Polygon tool cursor and a symmetrical default polygon. Because the Polygon tool can be used to make star-shaped polygons, there are nodes that govern the outer points of the star, and then there are “inner” nodes in between the points that control the curves between points. When you edit a polygon, the position of these points can be reversed. These nodes have no control handles because they connect straight path segments. However, in the following tutorial, you’ll get a jump start on advanced shape creation and really get down in very few steps to creating a dynamite polygon shape through editing.
Reshaping a Polygon

1. Choose the Polygon tool from the Toolbox. Before you do anything else, set the number of sides to 12 on the Property bar.

2. Hold CTRL to constrain the shape to a symmetrical one, and then click-diagonal-drag on the page. Release the mouse button after you have a polygon that’s about 3” wide.

3. To better see what you’re doing, left-click over the color palette with the polygon selected to fill it. By default, polygons are created with a small stroke width and no fill.

4. Choose the Shape tool from the Toolbox. Click any of the control points on the polygon to select it, but don’t drag yet. Hold CTRL and then drag outward, to constrain the movement of the cursor so the polygon doesn’t take on a lopsided appearance (although you can create interesting polygons by dragging in any way without holding CTRL). You should have a star shape now.

5. Notice that on the Property bar you now have a lot of icons that control how line segments pass through nodes and whether the segments are straight or curved. Click any line segment that makes up the polygon; your cursor should have a wiggly line at lower right, as shown here, meaning that you’ve clicked a line. Then click the Convert To Curve button on the Property bar, converting not only the line, but also all the lines in the polygon that are symmetrical to the chosen line, to a curve. Or perhaps more simply, use the same command by right-clicking a point and using the pop-up contextual menu.
6. You’ll now see two control handles. They lay exactly on the segment that appears to be a line but now has curve possibilities. First, click an inner or outer original node along the polygon path, as shown next. This reveals the handles. It is now possible to create a curve by dragging on the segment between the control handles. Doing this, as you can see here, creates a very interesting and complex symmetrical shape, and you can now see the control lines and handles for the curve segment much more easily and can manipulate the control handles to further embellish your creation.

Stars and Complex Stars

You have variations on polygons at the ready in CorelDRAW, in the same group as the Polygon tool. The Star tool can be used to create pointy polygons with anywhere from 3 to 500 points. The Complex Star tool creates a number of combined polygons to make a star shape; you can create interesting symmetrical shapes by filling a complex star—the result contains both filled and vacant polygon areas as the component paths intersect one another.

Working with the Star Tool

The Star tool produces objects by using the click-diagonal-drag mouse technique; CTRL-SHIFT-dragging creates symmetrical stars beginning at the initial click point traveling outward.

On the Property bar, when the Star tool is selected, you’ll see options for the number of points for the star and the “pointiness” (sharpness) of the resulting object—how severe the indents are between points. At a setting of 1, the star object is not at all pointy—you’ll see that it looks quite like a Polygon tool object. So, if you can make a star using the Polygon tool, why would you ever choose the Star tool? The answer is because when using the Star tool the geometric structure of a star shape is always perfectly symmetrical. Although you can use the Shape tool to tune the sharpness of a Star tool object’s points manually, the angle between points is always consistent. In the illustration here, you can see a Star tool object compared with a Polygon tool object.
that has been clumsily edited. You can’t perform this goof with the Star tool; its interior angles are always mirrored and symmetrical.

Using the Complex Star Tool

Think of the kaleidoscope images you enjoyed as a child (or still do) when you choose the Complex Star tool—because with only an edit or two using the Shape tool, you can create mesmerizing symmetrical shapes, unlike with any other tool in CorelDRAW.

To use the tool, you know the drill if you’ve read this far! You click-diagonal-drag to create a shape; by default, the complex star has 9 points of a value of 2 on a 1- to 3-point sharpness scale (available to define on the Property bar.

CTRL, SHIFT, and CTRL+SHIFT perform the same modifiers as they do with other shapes. One unique characteristic of complex stars is that they have two control points: one for the inner, negative space, and one for the points. When you edit using the Shape tool, holding CTRL constrains your edits on the control points to symmetry, but if you want a spiral treatment of a complex star, don’t hold CTRL and drag any way you like on both the inner and outer control points. You’ll probably want to assign a fill to a complex star as your first edit because unfilled complex stars aren’t as visually interesting. The illustration here shows what you can create by moving the inner control point to outside the outer control point. Imagine the snowflake patterns you can build; and like snowflakes, no two complex stars are alike.

Next, you can see other examples of simply playing with the Shape tool on a complex star object. Also try assigning a wide white outline property to a complex star as a property to create still more variations.
Using the Spiral Tool

With the Spiral tool (press A as the keyboard shortcut), you can create circular-shaped paths that would be tedious, if not impossible, to create manually. Spiral objects are composed of a single open path that curves in a clockwise or counterclockwise direction. They can also be designed to expand in even segment distances or in increasing distances as the spiral path segments travel away from its center (called a logarithmic function). You find the tool in the Toolbox, grouped with the Polygon and Basic Shapes tools.

The Spiral tool options share space on the Property bar (shown next) with options for the Graph Paper tool and include Spiral Revolutions, Symmetrical, and Logarithmic Spiral modes, and a Spiral Expansion Factor slider.

The objects you can create can have between 1 and 100 revolutions, each of which is equal to one complete rotation around its center point. The direction of the revolutions is set according to the click-diagonal-drag action you take when creating the initial shape, as shown here…
**Symmetrical vs. Logarithmic** A symmetrical spiral object appears with its spiral revolutions evenly spaced from the center origin to the outer dimensions of the object. To increase or decrease the rate at which the curves in your spiral become smaller or larger as they reach the object’s center, you may want to use the Logarithmic method. The term *logarithmic* refers to the acceleration (or deceleration) of the spiral revolutions. To choose this option, click the Logarithmic Spiral button on the Property bar before drawing your shape.

**Logarithmic Expansion option** While the Logarithmic Spiral tool is selected, the Spiral Expansion slider is available—as well as a value field you can type into—and you can set this rate based on a percentage of the object’s dimensions. Logarithmic Expansion may be set from 1 to 100 percent. A Logarithmic Expansion setting of 1 results in a symmetrical spiral setting, whereas a setting of 100 causes dramatic expansion. If you need a shape that is reminiscent of a nautilus, increase the Logarithmic Expansion to 50 or so.

Converting Shapes to Curves

Any of the shapes discussed in this chapter can be converted to curves by using the Object | Convert To Curves command (CTRL+Q). Using this command removes any dynamic-editing properties. For example, an ellipse shape may be converted to a pie or arc (and vice versa); but after it is converted to curves, you’ll no longer have the option of turning the object into a pie wedge. The same applies to rectangles, polygons, and so on. With the exception of the Undo command, once an object is converted to curves, there is no way to return the object to its dynamically editable state.

Using the Convert Outline To Object Command

Many of the shapes covered in this chapter, the spiral in particular, are shapes that have outline properties but no fill. So what do you do, for example, if you want a gradient-filled spiral? The Object | Convert Outline To Object command converts any shape’s outline properties to a closed path. To apply the command to a selected object, choose Object | Convert Outline To Object, or use the shortcut: CTRL+SHIFT+Q. Once the outline is converted, the resulting closed path looks exactly like the shape of the original, except it can be filled because it’s not an outline, but instead a closed path object whose shape is based on an outline.

When an outline is converted to an object, CorelDRAW performs a quick calculation of the Outline Pen width applied to the object and creates a new object based on this value. When applying this command to objects that include a fill of any type, a new compound-path object is created based on the outline width. If the object includes a fill of any type, the fill is created as a new and separate object applied with an outline width and color of None. When you’re converting open paths, only the path itself is created as a single outline object of the path according to the Outline Pen width applied.
Original with 16-point outline applied

New fountain-filled object based on the outline
CHAPTER 3

All About the Objects
3.1 Arranging and Organizing Objects

When you create or import an object, it’s might not be exactly where you want it on the page. Or the position might be fine, but the object’s a little too large. It might also be rotated by a few unwanted degrees, or it’s part of a group or on the wrong layer—you get the picture. This chapter covers the techniques to use in CorelDRAW to transform objects—both the manual approach and pinpoint precise numerical entry approach are covered. You’ll soon have the skills to compose elements on a page the way you want them, and then you can stop cursing at the cursor.

Basic Object Selection

The Pick tool–by default, the tool at the top of the Toolbox—can move, scale, or create other transformations when you click an object to select it and then drag to move the selection, for example. Use the SHIFT key as the modifier when you’re selecting things on a page; you add to your existing selection by SHIFT+clicking other objects. If you’ve selected an object unintentionally, SHIFT +click on the object (that’s already selected) to deselect it.

With one or more items selected, you’ll notice that information about the selected shapes is displayed on the Status bar. The other workspace area to watch is the Property bar, which shows the position and size of the selection and offers options relevant to the tool being used, such as the number of degrees to rotate the selected object(s). Also, if you press ALT+ENTER when something is selected, the Object Properties docker provides you with not only details about the object, but also the opportunity to quickly change many of the object’s properties.

Pick Tool Selections

The Pick tool can be used for at least two things, the most important of which are to choose an object or several objects and to create a change in the selected object(s) by moving it and adjusting its selection handles.

Clicking an object once selects it. While an object is selected, selection handles appear—the eight black markers surrounding the object. Additionally, depending on the type and properties of an object, you’ll see nodes at various areas around the object, which indicate the first node in an object path or subpath (of combined vector objects) when a vector object is selected or the edge of an object when a bitmap is selected. A small X marker appears at the centermost point of the object, indicating its center origin. This origin can be moved and is quite useful for defining a center of rotation for an object.
Picking and Freehand Picking

The Freehand Pick tool is located in the Pick Tools group, and both new and experienced CorelDRAW users might want to give this selection tool a try; the Freehand Pick tool behaves exactly like the (regular) Pick tool after an object is selected, so you can move or perform other transformations without switching tools.

The main difference between these tools is that with the Pick tool, you must click-drag to define a rectangle that the desired objects are completely within. The Freehand Pick tool is used more like a shape creation tool than a rectangle creation tool; you can click-drag around objects, selecting some and avoiding others, regardless of how closely the objects neighbor one another. The illustration here visually demonstrates the different properties of the Pick and Freehand Pick tools.

Selection Techniques

You can use mouse and keyboard combinations while navigating through a collection of objects and for selecting more than one object at a time using the Pick tool. Many of these object-selection techniques can also be used in combination with each other. Here’s how to select more than one object in one fell swoop:

- **SHIFT-clicking to select** Holding the SHIFT key while clicking an unselected object adds it to your current selection. This also works in the reverse: holding SHIFT while clicking a selected object deselects the object. This technique works with both the Pick and Freehand Pick tools.
• **Marquee-selecting objects** To select all objects in a specific area, use the (regular) Pick tool and click-drag diagonally to surround the objects; a dashed blue outline representing the rectangular area being selected appears until you release the mouse button. When you do so, all object shapes completely within the area you define are selected.

• **Holding ALT while marquee-selecting** If you come to CorelDRAW from Adobe Illustrator, you can use the convention of selecting objects by merely touching a shape in a marquee-selection technique. Holding the ALT key as the modifier while click-dragging to marquee-select a specific area selects all objects within—and even ones whose edge you touch. Holding SHIFT+ALT while marquee-selecting causes the reverse to occur, deselecting any objects that are already selected. There is also an option (Tools | Options | Workspace | Toolbox | Pick Tool and then click Treat All Objects As Filled) that saves you from holding ALT all the time.

• **Pressing TAB to select next object** Suppose you have a bunch of objects in a document, but some of them overlap, and you’re getting nowhere by attempting to click the one you need. Pressing the TAB key alone while the Pick tool is active selects a shape and selects the next single object arranged directly behind your current selection (whether or not it overlaps the current object). Holding SHIFT while pressing the TAB key selects the single object arranged directly in front of your current selection. This tabbing action works because each new object created is automatically ordered in front of the last created object. Tabbing cycles through single object selections on a page, whether you have a current object selected or none at all. The key is to begin tabbing after you’ve chosen the Pick tool.

**ALT+ click to select objects covered by other objects** To select an object that is ordered in back of and hidden by other objects, hold the ALT key while the Pick tool is selected and then click where the object is located. Each time you ALT+ click with the Pick tool, objects that are ordered farther back in the stack are selected, enabling you to “dig” to select hidden objects.

The Pick Tool’s Shape Tool State

If you’re getting an idea that the Pick tool has a host of hidden features, you’re right. One of these is its alternate state—the temporary Shape tool state. The Pick tool can temporarily act like the Shape tool while a single object is selected and when held over object nodes, but this isn’t its normal behavior, and you need to first enable this feature in Options; choose Workspace | Display and then check Enable Node Tracking.

The temporary Shape tool state lets you move object nodes without changing tools, conveniently giving you control to modify selected characters in a line of Artistic Text, to edit open and closed paths, and to modify an ellipse, star, polygon as star, graph paper object, and even a bitmap. When the Pick tool is outside of a shape it looks like an arrow cursor. After an object is selected and the tool is over an object node, however, the tool changes to the Shape tool and you can move nodes.
Selecting Objects by Type

So far, you’ve learned to select any objects on or off your page. But you can also select objects by their type (such as text objects, guidelines, and path nodes), using commands from the Select All menu, shown in the following illustration. Shown here all text objects are selected, and CorelDRAW is being very clever; it didn’t select the “O” or the “a” because they are drawings and not text. You can extrude, add a perspective, and put any type of fill you like on text, and it’s still text. See how effortless sifting through a page of objects can be? Each time you use a command, a new selection is made (and any current selection of objects becomes not selected).

- **Select All Objects** Choosing Edit | Select All | Objects selects all objects in your current document window. Quicker is the CTRL+A keyboard shortcut, which accomplishes the same thing and is easy to remember.

- **Select All Text** Choosing Edit | Select All | Text instantly selects all text objects both on and off the current document page. Both Artistic and Paragraph Text objects are selected after using this command (unless they have been grouped with other objects, in which case they are ignored). Text objects that have effects (such as Contour or Extrude effects) also are selected using this command.

- **Select All Guidelines** Guidelines are actually a class of document page objects, different from objects you draw, but objects nonetheless. To select all guidelines on your document page, choose Edit | Select All | Guidelines. Selected guidelines are indicated by a color change (red, by default). To select guidelines, they must be visible and cannot be locked; probably the fastest way to unlock or unhide a bunch of guidelines is to double-click one using the Pick tool to display the Guidelines docker. The Guidelines docker has options for locking/unlocking and hiding/revealing existing guides. If guidelines you’ve placed merely aren’t visible on your page, and you’re sure you laid some down in your last session, try choosing View | Guidelines.
- **Select All Nodes** You can have the Shape tool or the Pick tool (which will magically change into the Shape tool) and an object selected (closed or open paths qualify) when using this Select command. Choose Edit | Select All | Nodes to select all the object’s path nodes. For a quicker method in the same situation, use the CTRL+A shortcut when either the Pick tool (which changes to the Shape tool) or the Shape tool is your current tool. Special CorelDRAW objects, such as rectangles, ellipses, and polygons, can’t be selected this way because their shapes are defined dynamically by “control points” instead of nodes.

**Using the Pick Tool**

Holding the Pick tool over certain areas of a selected object activates the tool’s positioning cursor, as shown in the illustration. This means a click-drag action on the area will move your selected object(s) in any direction. As you drag your object, you’ll see a preview outline, indicating its new position. When you release the mouse button, the move is complete.
Using Nudge Keys

As an alternative to using the Pick tool, you can also move selected objects by a distance you specify by nudging using your keyboard arrow keys. To nudge a selected object, press the UP, DOWN, LEFT, or RIGHT arrow key. Your object will be moved by the nudge value specified on the Rulers page of the Options dialog. You can customize the Nudge distance by opening the Options dialog (CTRL+J), clicking to expand the tree directory under Workspace and Document, and clicking to display the Rulers options page.

Using nudge keys, you can perform moves according to the Nudge value or by larger or smaller values. These are referred to as Super and Micro nudges. Like “normal” nudges, these values are set on the Rulers options page. Here are the techniques for using Super and Micro nudges:

- **Super nudge** This action moves a selected object in larger increments than a normal nudge. To use Super nudge, hold SHIFT while pressing the UP, DOWN, LEFT, or RIGHT arrow key on your keyboard. By default, this moves your selected object by twice the default value for a “normal” nudge distance, although as you can see in the preceding illustration, you can change that 2 to a larger value in the Super Nudge num box.

- **Micro nudge** The pint-sized version of a typical nudge is the Micro nudge, which moves your object in smaller increments. To use Micro nudge, hold CTRL while pressing the UP, DOWN, LEFT, or RIGHT arrow key on your keyboard. By default, Micro nudges move the selected object by one-half the default nudge distance, but again, this value’s in the Micro Nudge num box and you can make it even smaller.

Transforming Objects

A transformation is any type of object shape or position change, short of actually editing the object’s properties. This includes changing an object’s position, size, skew, and/or rotating or reflecting it. Dragging an object directly in a document is more intuitive than precision transformations—but both approaches have their own special advantages. In this section, you’ll learn how to apply transformations using both techniques.

Transforming Objects Using the Cursor

For the intuitive method, the Pick tool is what you need to transform objects by the simple act of click and dragging. Depending on the type of transformation you need to apply, you can click-drag any of the four, black, square selection handles that surround the selected object or group of objects to change an object’s
size *proportionally*—by width only and by height only. Dragging any middle selection handle or side handle scales the object *disproportionately*—“smush” and “stretch” are the more common terms for disproportionate scaling.

During transformations, CorelDRAW keeps track of the object’s transformed size, position, width, height, scale, and rotation angle. CorelDRAW remembers your object’s original shape from the time it was created, regardless of how many transformations have been applied to it. You can remove all transformations and restore the object to its original state in a single step: choose Object | Transformations | Clear Transformations to return your object to its original shape immediately.

While transforming objects, you can constrain certain shape properties by holding modifier keys. Here are the effects of holding modifier keys for constraining a transformed object’s shape:

- **To change object size (scale)** Click-drag any corner handle to change an object’s size *proportionally*, meaning the relative width and height remains in proportion to the original object’s shape. Hold ALT while dragging any corner selection handle to change an object’s shape *disproportionally*, meaning width and height change, regardless of original proportions.

- **To change width or height only** Click-drag any side, top, or bottom selection handle to change the size of the object in the drag direction. Hold SHIFT while doing this to change the width or height from the center of the object, or hold CTRL while dragging to change the width or height in 200-percent increments.

You can also rotate or skew an object using Pick tool states that become available after you click a selected object a second time—you click an object that is *already* selected once to display rotation and skew controls around the object. This action causes an object (or group of objects) to look like the illustration of the 45 here, an ancient analog sound device best known to listeners who know who Little Anthony and the Imperials were.
You control the point around which objects are rotated or skewed, by moving the center origin marker or anchor point of an object or group of objects. Your cursor will change to display either the rotation or skew cursor when held over a corner or side handle. A good creative example of offsetting the original center of an object is covered in the following tutorial, where you’ll make a circular pattern from a group of objects.

Using the Free Transform Tool

The *Free Transform* tool is the middle ground between controlling transformations entirely with mouse gestures and the hands-off controls of the Transformations docker. When you use the Free Transform tool, the Property bar offers four transformation modes: Free Rotation, Free Angle Reflection, Free Scale, and Free Skew, as shown here, performing the Free Angle Reflection, to mirror the drawing’s original location and left-to-right orientation.

To transform a selected object in one of these four modes, click to select the mode, and then use a click-drag action on your object. A live preview of the new object’s shape appears. While using Rotation or Angle Reflection modes, a reference line appears as you drag to indicate the object’s angle transformation from its original state.

Using the Free Transform tool and then applying a little transparency can yield compositions that contain believable reflections. The Free Transform tool works with bitmaps as well as native CorelDRAW vector objects.
Applying Precise Transformations

The Transformations docker is terrific for applying multiple transformations with a single command. The docker has five Transformation buttons: Position (Move), Rotation, Scale And Mirror, Size, and Skew, as shown in this fantastic illustration. To open the Transformations docker, choose Window | Dockers or choose Objects | Transformations, and then click any submenu command and the entire docker appears docked to the right edge of the drawing window.

For all transformations, the procedure is the same: click the button for the type of transformation, enter the values you need, and then click the Apply button in the docker to transform the selected object(s). In this section, you’ll learn what each area does for you and the options offered for each.

Positioning (Moving) Objects

Options for the Position page will move your object selection a specified distance, either horizontally (x) or vertically (y), to a specific point on your document page.

While the Relative Position option is selected, entering new values and clicking the Apply button moves your objects by a specified distance. If the Relative Position option is not selected, you’ll be moving your object to a specific location, for example, if you type 11 in the x (horizontal) field and then click Apply, your object moves to the 11” mark on the horizontal ruler.

If you specify a value greater than zero in the Copies field, and use the Relative Position option, you create a duplicate object every increment of the x value you’ve typed in.
Rotating Objects

On the Rotation page, you can enter exact angles of rotation based on degrees and in default increments of 5 using the spin boxes. Here, you see two very different results when using relative and absolute positioning and two copies of the tea kettle.

Entering negative values rotates an object clockwise, whereas positive values cause counterclockwise rotation. Selecting the Relative Center option lets the object be rotated around its center marker position. By default, the marker is at position x=0 and y=0—at the object’s geometric center. Entering new values has the same effect as moving the center marker position with the Pick tool, but with the advantage of mathematical precision. When Relative Center is not selected, the x and y values represent fixed page coordinates for the center of rotation.

Precision Skewing

The term skew means to change the position of two sides of a shape in a parallel fashion while leaving the other two sides alone; slanting is a more common synonym for “skew.” The Skew transformation also gives you the chance to apply both vertical and horizontal skew independently or simultaneously by entering degree measures, in turn, transforming the object either x or y. As with rotation commands, negative degree values produce clockwise skews, whereas positive values cause counterclockwise skews. Choosing the Use Anchor Point option lets you specify left, center, right, top, bottom, sides, or corner points as the point around which your objects are skewed by choosing the Use Anchor Point option.
Controlling the Order of Things

Object order is another of the basics you need to know to organize shapes. Setting the order of objects lets you set whether an object appears in front of, or behind another object. When overlapping objects are ordered, they appear in front of or behind each other, according to their order. As you create each new object, it is put in front of all existing objects on the current document layer. Changing the object order lets you rearrange overlapping objects without changing their position on the page. To do this, CorelDRAW has a series of order commands that let you shuffle the order of objects in various ways. You'll find them in the Object | Order submenu, but you can also apply them using shortcut keys or the To Back Of Layer and To Front Of Layer buttons, available toward the far right on the Property bar, when an object is selected.

Here's how each of the object order commands works:

• To Front This command shuffles your selected object(s) to the very front of the current layer. Press SHIFT+PAGE UP or choose Object | Order | To Front to apply it. The To Front command is also available as a Property bar button when an object is selected.

• To Back This command shuffles your selected object(s) to the very back of the current layer. Press SHIFT+PAGE DOWN or choose Object | Order | To Back to apply it. The To Back command is also available as a Property bar button while an object is selected.

• Forward One This command shuffles your selected object(s) forward by one in the object order of the current layer. Press CTRL+PAGE UP or choose Object | Order | Forward One to apply it.

• Back One This command shuffles your selected object(s) backward by one in the object order of the current layer. Press CTRL+PAGE DOWN or choose Object | Order | Back One to apply it.

• In Front Of This command is interactive and puts your selected object directly in front of any object you specify in the current layer order. A targeting cursor will appear, and you use it to choose which object to shuffle your selection in front of. Choose Object | Order | In Front Of to apply it.

• Behind This command also causes a targeting cursor to appear, enabling you to specify which object you want your object selection to be shuffled behind in the object order on the current layer. Choose Object | Order | Behind to apply it.
• **Reverse Order** This command effectively shuffles the order of your selected object so that it’s in the reverse of its current order on the layer. Front objects become back objects and vice versa. For example, if your objects were numbered 1, 2, 3, and 4 from front to back, applying this command would reorder them to 4, 3, 2, and 1. Choose Object | Order | Reverse Order to apply it.

**Working with Views of a Document’s Depth: Layers**

CorelDRAW’s layer feature provides invaluable ways not only to organize but also to view complex drawings. You can create several layers and move shapes among layers. You can also name layers, control their order and appearance, change object ordering within layers, group objects, and quickly see object information.

**Exploring the Object Manager**

The Object Manager docker is your resource for viewing layer content and using layer options. With the Object Manager, you can perform a whole range of actions: navigate document pages, create and name layers, select and move objects among layers, and set layers as editable, printable, and visible. To open the Object Manager docker, choose Windows | Docker | Object Manager.

The Object Manager shows a listing of the layers, each accompanied by options and a flyout menu. A Master Page also appears and includes default layers for controlling guides, the desktop, and grid objects. If more than one page is in a document, you can specify whether you want odd, even, or all pages in the file to have Master Pages.
Navigating Pages, Objects, and Layers

The best way to use the Object Manager docker to navigate through your document, select layers, and control layer options is by experimenting yourself; the following steps are a guide. You’ll learn exactly how these operations are performed; look at the next illustration, which shows a default layer structure for a new document.

Using Object Manager Editing and View States

Objects can be on different layers, and you can edit across layers in CorelDRAW. Create a new file that has objects on, let’s say, three layers to better learn through example about the editing and view states of CorelDRAW layers. Open the Object Manager docker. You’ll see three view state buttons at the top of the docker—that’s where information about viewing and editing behavior are set. Clicking each button toggles its state on or off. Each button has the following effects:

- **Show Object Properties** Click the Show Object Properties button to set whether you want to view a detailed name for a layer’s contents (color, type of object, and so on), or just the name, either the default or your own custom name.

- **Edit Across Layers** Click the Edit Across Layers button to set whether objects can be selected, moved, and copied between layers. While cross-layer editing is disabled, objects appear grayed out, allowing only objects on your current page layer and/or the desktop to be selected or edited. While cross-layer editing is enabled, you can select, move, or edit any object on an unlocked layer.

- **Layer Manager View** The Layer Manager View button toggles your view to show only your document’s layers. When working with complex drawings that have many pages, layers, and objects, using this view can make managing layer properties a lot easier. In this state, all page and object information is omitted.
Controlling Layer Properties

Using the Layer Properties dialog, you can control specific properties for each layer. To access these options, right-click a specific layer in the Object Manager docker and choose Properties from the pop-up menu. You can access properties directly from the pop-up menu or display a modeless dialog for defining the properties of a specific layer. There is a minor difference between using the dialog and the pop-up: the pop-up (right-click) menu has the Delete, Cut, Copy, and Paste commands. However, in X7, you can now rename layers in the Layer Properties dialog in addition to the Object Manager. Options in this dialog control the following layer properties:

- **Visible** This option enables you to toggle the view state of a layer between visible or hidden. You can also control the visibility of objects on a layer by clicking the Eye symbol to the left of the layer name.

- **Printable** This option toggles the printing state of objects on the layer on or off. You can also set whether layer objects are printable by clicking the Printer symbol beside the layer in the Object Manager docker to toggle the printing state of objects on the layer.

- **Editable** Use this option to lock or unlock all objects on a layer. While a layer is locked, its objects can’t be edited (or even selected), which is a little different than the Lock (object) command. You can also set whether layer objects are editable by clicking the Pencil symbol beside the layer in the Object Manager docker to toggle the editing state of objects on the layer.

- **Master Layer(s)** You can have layers for odd, even, and all pages in the Master Page entry on the Object Manager docker. You can create a new Master Layer, and you can also drag an existing layer from a page to the Master Page entry. Changing a layer to a Master Layer makes it part of the Master Page structure. Any objects on a Master Page appear on all pages. For details on working with Master Pages and Master Layers, see the next section.

- **Layer Color** This selector sets the color swatch as it appears in the docker listing directly to the left of a layer name, for easy recognition. Layer Color also determines object colors when viewed using Normal or Enhanced views while the Override Full Color View option is selected. You set the color coding for a layer by double-clicking the color indicator next to a layer name to open a typical color selector menu and then clicking any color from the drop-down color picker.

Working with Master Page Layers

Whenever a new document is created, a Master Page is automatically created. The Master Page isn’t a physical page in your document, but instead a place where document objects can be placed so they appear on every page of your document. Objects on a Master Page layer are visible and printable on every page in your document, making this an extremely powerful feature. For example, placing a text header or footer or a company logo on a Master Page layer is a quick and easy way to label all the pages in a pamphlet or brochure.

Moving any object onto a layer on the Master Page makes it a Master Page object and causes it to appear on each page.
3.2 Align and Distributing Objects

Alignment

CorelDRAW offers precision when using its Align and Distribute commands that enable you to align or evenly space object shapes in various and relative ways. You can access the menu commands by choosing Arrange | Align and Distribute and make a selection from the submenu.

Align and Distribute options are organized into three areas: Vertical, Horizontal, and Page options.

Vertical Alignment

Choose Left, Center, or Right to align your objects.
Horizontal Alignment

When aligning objects horizontally, you have the option of using Top, Center, or Bottom. Only one of these three options can be selected at any one time.

Edge of Page Alignment

Choosing Edge of Page option alone won’t change your selected object’s alignment. It must combined with one of the vertical options (Top, Center, Bottom), or one of the Horizontal options (Left, Center, Right). On the other hand, you can use one option from both the Vertical and Horizontal options.

Center of Page Alignment

This option centers your objects to the center of the page according to each objects center point.
Align To Grid Option

When using this option, objects align to the nearest grid. Select the Align to Grid option and either one selection from the Vertical options (Top, Center, Bottom) or Horizontal Options (Left, Center, Right), or an option from both the Vertical and Horizontal options.

What Aligns to What, and When?

**Align – Based on Order Objects are Created** When marquee-selecting objects, the first object that was drawn or created will be the object to which all other objects are aligned.

**Align – Based on the Order of Selection** If you use the selection process with the Pick Tool, the last object selected will the object which all others will align.

Using Distribute Command Options

The CorelDRAW Distribute command allows you to control the precise spacing of selected objects. You can add automated spacing between objects based on their width and height or their center origins.

Objects can be evenly spaced based on one of two position reference points. With the Extent of Selection option is selected, your objects are evenly spaced between the two objects farthest from each other. Objects are distributed vertically and/or horizontally according to their Top, Center, Left, Right, or Bottom edge, or by adding equal spacing between their width or height.

The Extent of Page option causes objects to be evenly spaced within document page borders. Choose a Vertical and/or Horizontal spacing option together with Extent of Page to apply even spacing between the selected reference point on your objects.

Here’s an actual sample that was created using CorelDRAW’s Align and Distribute command.
3.3 Selecting the Correct Path Tools

CorelDRAW’s path building and editing tools are at your disposal, so you can create exactly what you envision. The Curve Tools group on the Toolbox has tools that make any shape you can imagine (and some you can’t) a snap to design.

Sidling Up to CorelDRAW X7’s Curve Tools

The most basic shape you can draw in CorelDRAW (and any vector drawing program) is a line: a line is a path that passes through at least two points, called nodes in CorelDRAW. A line is actually a mathematical equation, and as such, it doesn’t necessarily have an outline color or width, and it doesn’t even have to be a straight line. However, a line does have direction—the direction in which you draw the line. This might seem obvious, but vectors do have a direction, and you can end up with arrowheads on the wrong end of a line and all sorts of unwanted stuff if you fail to remember the basic properties of a vector graphic.

You can assign a line scores of different properties: arrowheads, a dashed outline around clip-out coupons, solid colors, and varying widths. Joining the beginning and ending points of a line (a path) closes the path. If the beginning doesn’t meet the endpoint, the shape is called an open path.

CorelDRAW X7’s Curve tools are task-oriented; although they all produce paths, your choice of tool(s) for a task depends on what you want to draw. For example, do you need an object whose curves are flawless—like those of a physical French curve? This task calls for the B-Spline tool. You can also “mix and match”; you can begin an object with one tool and finish it with a different tool—your choices depend on the object you want to create. Some of these tools work similarly so it’s best to become acquainted with what the different cursors look like.
How to Fill an Open Path

When you draw a path and the beginning and ending points don’t meet, you have an open path, and ordinarily you cannot apply a fill to its interior. But you can indeed fill an open path—just like in Adobe Illustrator—when you know how to turn on this option.

To change DRAW’s behavior so all open paths are filled—so you don’t need to close the path first—follow these steps:

1. Open the Options dialog; just click the button on the Standard bar.
2. Expand Document, and click General to display the associated options on the right side of the dialog.
3. Click the Fill Open Curves option to select it, and click OK to close the dialog.

After choosing this option, the open paths you draw can have an interior area.

How to Draw in CorelDRAW

In the Curve Tools group, you’ll find CorelDRAW’s path and node creation pens; you can use them for both accuracy and artistic expression, and they each have varying degrees of ease of use that correspond directly to their power.

Drawing with the Freehand and Polyline Tools

The Freehand and Polyline tools share a common function, giving you the freedom to draw as if you were sketching by freehand on a physical sketch pad, but the tools work in slightly different ways. Sketched lines can create a single open or closed vector path. Both tools are located in the Toolbox grouped with other line-creation tools.

For mouse users and stylus users alike, click-dragging initially produces a Start node for a path segment and then, when you release the mouse (or stylus) button, a node is placed, setting the end of the path segment. To use these tools:

1. Begin by selecting the Freehand tool.

2. You can create a continuous line by click-dragging a path shape. As soon as the mouse button is released, the line is complete.
3. To extend this path—to add a path segment after the first segment’s End node—you position your cursor over either the Start or End node (the cursor now features a tiny bent arrow), and to continue with a freeform path, just start click-dragging again.

4. Now, let’s say you want to extend this path with a straight line segment or two. Instead of click-dragging on the End node of the previous segment, you click and then release the mouse button; the cursor turns into a little line segment icon; and at whatever point you want to end this segment, you single-click.

5. If you want to keep going with straight line segments, don’t just click an End node and move your cursor; double-click an End node and you are now creating a new line segment that is joined to the previous line segment by a node.

6. To create a path that only has straight lines, you single-click, and then move the cursor and double-click each time you want the line segment to end and a new one to begin. Along with what the cursors look like and do depending on the position of the cursor over the page or the path. Do not freak out at the apparent complexity of this figure! It’s a map to the treasure of mastering the Freehand tool.

The Polyline tool, on the other hand, can be used similarly to the Freehand tool, except only a single click adds a node and you can continue to add path segments. You’ll notice that when you click-drag with the Polyline tool, your curves appear smoother, and this, like the Freehand tool, might serve digitizing tablet users the most.

The Polyline tool has an extended function that lets you draw straight lines, mixed with perfectly circular arcs if you single-click the end of a straight line segment, hold ALT, release the mouse buttons and move the cursor position (this is called hovering), and then single-click. The next illustration shows that with a minimum of patience and a good idea in your head, you can easily create French-curve-like abstract objects. If you want your work to be an open path, double-click when you’re done with the pen.
Using either of these tools, you can control the smoothness of path shapes drawn using click-drag actions by adjusting the Freehand Smoothing option on the Property bar before drawing your path. You can control smoothness after drawing a path by selecting nodes with the Shape tool and then using the Reduce Nodes slider. Reduce Nodes has a range between 0 and 100 percent; lower values apply less smoothing, and higher values apply more smoothing.

Drawing Arcs with the 3-Point Curve Tool

The 3-Point Curve tool was created for artists to build perfectly smooth arcing line segments, with complete control over the direction and steepness of the curve between two points. First, you hold-drag the tool to set a straight line that defines the angle of the curve. This sets the start and end points for the curve. Then you release the mouse button and hover the cursor to define the slope and degree of the curve; you’re provided with an onscreen preview until you decide and click a point and thus create the curve.
The terms *angle*, *slope*, and other common words don’t adequately describe the characteristics of a curve to anyone other than a geometry professor. This might help: these are two additional, slightly nerdy, yet highly accurate terms describing the characteristics of a curve:

- **Bias** When you draw an imaginary straight line through the endpoints of any curve, *bias* describes which of the two endpoints the curve leans toward.

- **Tension** Similarly, when a straight line runs through the two points that define a curve, tension describes how closely or how far the curve’s farthest point is from the line.

**Drawing with the 2-Point Line Tool**

This is the most self-explanatory tool in the Pen Tools group: you click-drag at any point on the page, and when you release the mouse button, the line is completed. Although this might seem like a “toy tool” compared to the others, it’s actually quite useful for creating callouts in technical manuals, and it was used extensively in this book. Create a 2-point line, add an arrowhead, end of task.
Using the Bézier and Pen Tools

The Bézier tool and the Pen tool are variations on the same theme of drawing connected curves and straight segments through the action of first clicking to set a path point, and then either dragging to define a curve behind the click point or clicking (no dragging) to define a straight path segment behind the click point. You'll find these tools grouped together with other line-drawing tools.

One of the less obvious differences between the two tools is that the Pen tool offers a “look ahead” point when you draw with it: before you click or click-drag a point, the proposed path between the point before you click and the previous (already defined) point on the path is shown in light blue. Although control handles are displayed when a curve is defined with the Pen tool.

The Pen tool doesn’t afford you as much control steering the shape of the curve as the Bézier pen tool. The Bézier tool always requires a click-drag mouse gesture to produce curves, whereas the Pen tool lets you hover your cursor before clicking to set the preceding curve in an object’s path segments. When you’re just beginning with CorelDRAW, the Pen tool provides a preview of the next segment you’ll create, and after you gain some experience, you might want to skip the previews, pick up some drawing speed, and use the Bézier tool.

Getting a Handle on Béziers

Both the Bézier tool and the Pen tool can create curves between two nodes whose connection to a neighboring node is smooth and symmetrical. You’ll see control handles on smooth, symmetrical nodes when you click one using the Shape tool. These handles are used for intuitively reshaping the curve.

You can also create straight path segments between curves using the Bézier tool. Click-dragging creates smooth curves that have smooth connections between segments, whereas clicking without dragging sets a path point that is not smooth—if you click again in a different location, you’ll get a straight path segment.

Because straight line segments and curve segments share so much fundamental anatomy, there is almost no distinction between the terms line and curve in the discussions in this chapter. The shapes of Bézier lines are
controlled, in part, by node properties and the position of curve handles. Two paths can have nodes in the same relative page position, but have completely different shapes.

Nodes and Control Points

When a vector path describes an arc, nodes (points) connect a start and ending point, and the nodes have control handles, at the end of which are control points (also referred to as nodes), the screen element you use to manipulate curves. The number of control handles and points depends on the segment connected by each node. For example, an arc (a curve) connected to a straight line segment has one control handle visible and it controls the slope of the curve segment. When two curve segments are connected, you’ll see two control handles if you click the connecting node with the Shape tool; this node can have different connection properties (cusp or smooth—described later in this chapter). A straight path segment can be described as two nodes connecting the segment, and the control handles for the nodes coincide in position with the node itself. For all intents and purposes, the control handles can’t be seen; they become visible when the segment is changed to a curved segment: the control handles appear on the segment, and you can move them away from the launch point of the curve and then freely manipulate the slope of the curve by dragging the control points.

Nodes can be defined as cusp, smooth, or symmetrical by using the Shape tool in combination with the options on the Property bar, as shown in the next illustration. Cusp nodes can be used to create a discontinuity in direction between two line segments; in English, the two segments connect in a nonsmooth fashion. Think of the moon being on the cusp; it’s crescent shaped, and this is the sort of shape you can create using cusp node connections. Smooth nodes cause the path slope and direction to align on either side of a node; their relationship is in 180-degree opposition, which has the effect of creating a smooth transition at the node point itself. Control handles surrounding a smooth node may be unequal distances from the node. Symmetrical nodes are not only smooth, but the control handles are an equal distance from the node. You’ll immediately appreciate the effect of a symmetrical node; when you drag one control point away from a node, the opposing control handle moves an equal distance from the node in exactly the opposite direction. The artistic effect is that the two joined path segments take on an almost circular appearance, which is very useful for technical illustration work.
Drawing Conventions for the Bézier and Pen Tools

Both of these tools are used to create compound paths (segments connected by a common node) by combining a series of clicks or click-drag, but each is used in slightly different ways for different results. Using either of these tools, single-clicks define new node positions joined by straight segments. Curve segments are created by clicking to define the node position and then dragging to define the curve shape. Click-dragging in succession creates a continuous curved path shaped by multiple nodes and off-the-curve control handles.

While using the Bézier tool, each click-drag defines and completes the curve segment. However, while using the Pen tool, the cursor remains active, and a preview of the next curve segment appears, so you can define both the curve shape and the next node point. Double-clicking ends the series of path segments.

Editing Bézier Paths

All lines are controlled by properties of the nodes they include, which are edited using the Shape tool (F10). You’ll find this tool, shown here, grouped with the Smooth, Smear, Twirl, Attract, Repel, Smudge, and Roughen tools.
Using the *Shape tool*, you can change node positions and curve shapes by click-dragging the nodes and their control points, or by directly click-dragging on a path segment. While using the Shape tool, icons appear on the Property bar when one or more nodes are selected; you can select several nodes to change by marquee-dragging them or SHIFT-clicking a few. These icons are used to set node attributes to cusp, smooth, and symmetrical, to join nodes and break nodes to create individual path segments, and to create straight lines from curves (and vice versa) when you’ve selected a segment or a node connecting segments. The bevy of functions on the Property bar provides exceptional control and flexibility in your design work. In short, you should *get to know the functions* for the Shape tool.

### Shape Tool Selection Mode
You can marquee-select nodes the way users always have, by click-dragging a rectangular shape around the nodes you want to select, or Freehand style, which produces a lasso-like marquee you can use to be careful and exacting about which nodes in a group you want to edit. Using Freehand style, you might also want to use SHIFT to add to selected nodes.

### Add/Delete Selected Nodes
These buttons give you the power to add new nodes to a curve or delete selected nodes after you’ve drawn a path, using the Shape tool and clicking at specific points on a path. To add a node, click any point on a line to highlight the new position and then click the Add Node button. You can also add a new node to a line by clicking one or more nodes and then clicking the Add Node button to add a node midpoint between the selected node and the next node on the path. To delete a node, click to select it with the Shape tool and click the Delete Node button. You can also marquee-select (drag diagonally with the Shape tool to create a rectangle surrounding the nodes) and then delete all the selected nodes in one fell swoop. Pressing the minus (–) key on your numeric keypad or your DELETE key also deletes selected nodes.

### Join Two Nodes/Break Curve
When two unconnected nodes on an open path are selected, for example, when the start point is close to the endpoint, pressing the Join Nodes button connects them to create an unbroken path. On single paths, only the unjoined Start and End nodes may be joined. On compound paths (paths that aren’t necessarily close to one another, but have been joined using the Object | Combine command—CTRL+L is a shortcut worth memorizing), the Start and End nodes selected on two existing—but separate—paths can also be joined. While a single node is selected or while a specific point on a segment is clicked, pressing the Break Curve button gives you two unjoined nodes, breaking a closed path into an open path.

### Line To Curve/Curve To Line
These two buttons are used to toggle the state of a selected straight line to a curve state, and vice versa. A single click with the Shape tool selects a line or curve indicated by a black
marker on the line. When curves are converted to lines, the path they follow takes on a shortcut: “the shortest distance between two points.” When converting a straight line to a curve, the path remains the same shape, but control handles appear directly on the “line,” and the quickest way to make the control points visible is to drag on the line to force it into a curve shape.

- **Extend Curve To Close** For this command to be available, you must have both the Start and End nodes of an open path selected (marquee-select the points, or SHIFT+click to select them both). Under these conditions, clicking the Extend Curve To Close button joins the two nodes by adding a straight line between them, closing the path.

- **Auto-Close Curve** While selecting an open path, clicking this button joins the Start and End nodes to form a closed path by adding a new straight line between the two nodes. Although similar to Extend Curve To Close, depending on the closeness of the Start and End path nodes, you might not even see a visible straight line connection. You can also join the endpoints of a selected curve using the Close Curve option on the Object Properties docker’s Curve tab. Press ALT+ENTER to open object properties. The Start and End nodes don’t even have to be selected to use the Object Properties’ method.

- **Reverse Curve Direction** While selecting a curved path on a line, clicking this button changes the direction of the path. By doing this, the start point of the path becomes the endpoint (and vice versa). The results of using this command button are most noticeable when the start or end of the line or path has been applied with an arrowhead, meaning the arrowhead is applied to the opposite end of the line or path. You may also notice subtle changes in the appearance of line styles applied to a path after using this option.

- **Extract Subpath** This option becomes available only when a compound path is selected. After clicking the Extract Subpath button, the selected path is separated from the compound path, converting it to a separate path. Using this command on a compound path composed of only two different paths is essentially the same as using the Break Apart command. It’s more useful when you need to extract a specific path from a compound path made up of three or more paths.

- **Stretch Or Scale Nodes** This powerful CorelDRAW feature is not available in competing applications. When at least two nodes on a path are selected, clicking Stretch Or Scale Nodes allows the transformation between nodes using their relative distance from each other vertically, horizontally, or from center. Eight selection handles become available, just like selecting an object using the Pick tool, and you can use a click-drag action from any corner or side selection handle toward or away from the center of the node selection. Holding SHIFT constrains the stretch or scale operation from the center of the selection. For example, if you draw a cartoon portrait of a man in profile, you could select the nose nodes, and enlarge the fellow’s nose without significantly affecting any other curve segment in the drawing.

- **Rotate Or Skew Nodes** Similar to Stretch Or Scale Nodes, when at least two nodes on a path are selected, clicking the Rotate Or Skew Nodes button lets you rotate and skew the selected nodes; this is a great feature for refining a shape just a little and also for creating more dramatic appearance changes (see the following illustration). Eight selection handles become available, enabling you to use a click-drag action from any corner selection handle to rotate the nodes in a circular direction either clockwise or counterclockwise. Dragging from any side handle enables you to skew the node selection either vertically or horizontally.
• **Align Nodes** When two or more nodes are selected, clicking this button opens the Align Nodes dialog, from where you can choose the Align Vertical or Align Horizontal options that automatically align your node selection accordingly. In addition to these options, while only the Start and End nodes of an open path are selected, you can also choose to align control points. This has the effect of moving the two endpoints of the line to overlap each other precisely. This command is wonderful for quickly sketching a zig-zag (perhaps for an illustration of a saw blade), and then in one step, aligning the nodes to create a precise illustration.

• **Reflect Nodes Horizontally/Vertically** These two buttons become available when two or more nodes are selected. You use these options to move nodes using nudge keys (the up, down, left, and right keys on your keyboard) or click-drag actions in opposite directions.

• **Elastic Mode** With this command, you move selected nodes according to their relative distance from each other; the effect is like experimenting with a rubber band. For example, while a collection of nodes is selected, dragging one of the nodes causes the others to be dragged a shorter distance in relation to the node that is being dragged. While Elastic Mode is off, all the selected nodes are moved equal distances. Try this option to add a more organic feeling to a drawing you feel looks a little too studied and stiff; it adds expression to a path.

• **Reduce Nodes** When you use this command, CorelDRAW evaluates the overall shape based on the nodes you’ve selected, deletes nodes that deviate from a predictable course along the path, and then repositions the remaining nodes—the effect is to smooth the curve. To use this feature, select the nodes controlling the segments you want to smooth and drag the Reduce Nodes slider control position toward 100. As you drag the slider, the shape of the curves is smoothed and you’ll notice superfluous nodes disappear from the curve. This option is helpful for smoothing lines drawn using the Freehand tool with either the mouse or a digitizing tablet stylus.

• **Select All Nodes** This button selects all the nodes in a path (or compound path) using one click. It’s a great feature for users who aren’t expert with the marquee-select dragging technique yet. You may also select all the nodes in a path with the Shape tool by holding CTRL+SHIFT and clicking any node on the path.

**Controlling Freehand and Bézier Tool Behavior**

The options to control how the Freehand and Bézier tools create the curves and lines you draw are set in the Freehand/Bézier Tool pane of the Options dialog, shown next. To access these options, click the Options button on the Standard bar. Then expand the tree subdirectory under Toolbox, and click Freehand/Bézier Tool. The quick way to get to this box, however, is to double-click the Freehand or Bézier tool buttons after choosing them from the Curve Tools group.
• **Freehand Smoothing** The Freehand Smoothing option lets you set the default value of the Freehand Smoothing option on the Property bar while drawing with the Freehand tool. Smoothing may be set based on a percent within a range between 0 (minimum smoothing) and 100 (maximum smoothing). This option is largely redundant with the Freehand Smoothing option available on the Property bar when a curve and the Shape tool are selected.

• **Corner Threshold** This option is for setting the default value for corner nodes when drawing with the Freehand or Bézier tool. Lower values make nodes more likely to be set to cusp nodes, and higher values make them more likely to be smooth nodes. The range may be set between 1 and 10; the default is 5.

• **Straight Line Threshold** This option pertains to how the shapes of lines or curves are created when drawing with the Freehand tool. Lower values make nodes more likely to be set to straight lines, whereas higher values make them more frequently curved. The range may be set between 1 and 10; the default is 5.

• **Auto-Join** This option sets the behavior of the Freehand or Bézier tool while drawing closed-path objects. This value represents the distance in pixels your cursor must be when clicking near the first node of a newly created path to close the path automatically. Auto-Join can be set anywhere within a range between 1 and 10 pixels; the default is 5 and is probably the best overall choice for the large screen resolutions we all have today.

**Working with Compound Paths**

*Compound paths* have at least two separate paths (either open or closed) composing a single shape. To examine an example of a compound path, use these steps:

1. Choose the Text tool (F8), click once to define a text insertion point, and then type an uppercase *Q* character. You can assign the character any typeface you like; the more ornamental the character, the more obvious the compound path will be. This character shape, shown in the illustration, has combined two paths: one represents the “positive” space and one represents the “negative” space shape.
2. While the text object is selected, convert it to curves (CTRL+Q). The Status bar now indicates the object is a Curve on Layer 1.

3. Change your view to Wireframe; choose View | Wireframe.

4. Press CTRL+K (Object | Break Curve Apart). With the Pick tool, click one of the shapes and drag to move it; clearly the two paths are now separate. You have just converted a compound path featuring two subpaths into two individual objects.

**Combining Objects**

When separate objects are combined, they behave as a single object. When two or more closed paths are combined, they form positive and negative spaces within the object. Applying a fill to this type of object fills the positive shapes, but the negative shapes remain clear, as shown here. The Combine command does this: choose Object | Combine, or use the CTRL+L shortcut. You can also click the Combine button on the Property bar, or choose Combine from the pop-up menu.
Breaking Paths Apart

You can separate the individual paths in a compound path using the Break Curve Apart command (CTRL+K). This command is available when a compound path composed of at least two subpaths is selected. (Using the Extract Subpath command button on the Property bar also does this, but only for the selected path.)

Converting Objects to Curves

Converting special types of objects to curves—such shapes auto-created with the Rectangle and Ellipse tools—frees them to be manipulated with the Shape tool as if they were ordinary paths. Choose Object | Convert To Curves; press CTRL+Q; click the Convert To Curves button on the Property bar; or right-click the object and choose Convert To Curves from the pop-up menu.

Converting an object to curves removes any special editing properties; text loses its editability as text and rounded rectangles can no longer be edited to refine the curvature of the rounded corners. Converting to curves applies to polygon, ellipse, and Artistic Text objects, and certain effects objects such as envelopes and perspective effects.

3.4 Special Shapes and Connectors

CorelDRAW’s Smart Drawing Tool

Even if you use a graphics tablet and stylus, you’re still drawing freehand, and using a mouse introduces still more flubs when it comes to freehand drawing. Fortunately, the Smart Drawing tool takes the guesswork out of drawing polygonal and rounded objects—in a nutshell, you click-drag an approximation of what you intend, tune the options for the Smart Drawing tool based on your first drawing, and in a jiffy you have a precise object with the proportions you need. Pictured next on the Toolbox, the Smart Drawing tool instantly translates rough drawings into shapes you’d usually consider drawing with the Rectangle tool or Ellipse tool—or with other tools that require more effort and skill.

When the Smart Drawing tool is selected, the Property bar displays Shape Recognition Level and Smart Smoothing Level options (shown next) for setting the sensitivity CorelDRAW uses to translate your roughs into precise shapes.
You control how precisely your sketch shape is translated into a precise shape by setting these options:

- **Shape Recognition Level** This option determines how precisely your sketched shape is matched to a recognizable shape. You can set it to one of five levels, ranging from Lowest (sketched shapes are not easily recognized) to Highest (sketched shapes are easily recognized), with Medium being the default; None turns off the feature.

- **Smart Smoothing Level** After you’ve completed a sketch by releasing the mouse button, a level of node smoothing is applied to make object recognition more, or less, precise. This option gives you total control over the smoothing action, much in the same fashion as using the Reduce Nodes spin box on the Property bar when a path is selected with the Shape tool. Choose from five options ranging from Lowest (less smoothing applied) to Highest (more smoothing applied), with Medium as the default; None turns off the feature.

**Editing Glyph Nodes**

Glyph nodes are edited in similarly to the control points on a polygon. As they are moved, the glyph nodes often have the effect of resizing, changing proportion, or dynamically moving a certain part of an individual symbol. Complex symbols can include up to three color-coded glyph nodes.

To explore glyph node editing, take a moment to try this:

1. Choose the Banner Shapes tool from the Shapes group on the Toolbox.
2. On the Property bar’s Perfect Shapes flyout button, click it to expand the list and then choose the second preset shape.
3. Using a click-diagonal drag action, create a new shape on your page. Notice the shape includes two glyph nodes—one yellow, one red.
4. Click-drag the yellow glyph node up or down to reposition it several times. Notice its movement is horizontally constrained; as it is moved, the vertical width of each portion of the banner changes.
5. Click-drag the red glyph node left or right to reposition it several times. Notice its movement is vertically constrained; as it is moved, the horizontal width of each portion of the banner changes to match your movement.
Glyph nodes can be edited using both the Perfect Shape tool you used to create the shape and the Shape tool (F10). You can also edit glyph nodes by using the Object Properties docker for a selected Perfect Shape. This docker offers precise control over glyph node position; just right-click your shape and choose Object Properties from the pop-up menu or press ALT+ENTER. Depending on the Perfect Shape you’ve selected, the Object Properties docker might display one, two, or more controls.

The Connector Tools

The Connector Tools group is almost so self-explanatory, it’s not necessary to cover how they work here. Connector lines come in one straight segment, a right-angle, and a rounded right angle, and there’s also an Edit Anchor tool, shown in the illustration here, to modify the exact location of the connector line relative to the object (or group of objects) to which the line is anchored.

There are more uses in everyday work for Connector tools than you might imagine. Everything from mapping genealogy, to org charts, to seating arrangements at receptions—these all need text in boxes and some sort of connecting line to establish relationships. The marvelous thing about DRAW’s Connector tools is that once you’ve connected two objects, regardless of where you move an object, the connector line preserves the connection. This makes arranging and laying out complex hierarchical maps and charts a snap.

As with dimension lines, set connector line properties—arrowheads, line widths, colors, and others—after you’ve created the connector line.
3.5 Editing Objects

Because every object you draw on a page can be broken down into rectangles, ovals, path segments, and so on, this chapter covers the tools and features for doing exactly this: breaking down shapes, combining them, subtracting a little of this, and adding a little of that. Often, arriving at the design of your dreams can be realized by creating an approximation of the shapes you seek. Then, with a pull and a tug here and there, you’ll get your desired results faster than by creating the drawing from scratch.

Shaping and Reshaping Objects

You have a choice of two places to begin when you want to edit an object: you can use Property bar commands, or you can use the hands-on approach. Both approaches will serve you well, and your choice largely depends on what you need to edit, and then what type of operation is required.

CorelDRAW has great shaping commands to speed the object-creation process, such as Trim, Weld, Intersection, and Boundary. You’ll also find three other shape commands at your disposal: Simplify, Front Minus Back, and Back Minus Front.

You’ll learn exactly how to use these commands to shape and reshape your objects. Before getting into the specifics, though, let’s take a look at where you can find these commands in X7.

Shaping Commands and the Property Bar

X7’s Property bar includes shaping command buttons that let you shape selected objects instantly. These Property bar options are available only when at least two objects are selected—and the shaping commands are available whether or not the objects are positioned to overlap. The Property bar shaping buttons are shown here.

Source and Target Objects

When using Property bar shaping buttons, shapes are subtracted, added, and so on, but the original objects go away. To keep your original objects, use the Shaping docker, which offers options to specify that the source object (the one performing the operation—the “scissors”) and/or the target object (the object receiving the operation—the “paper”) should remain after shaping.

When using the Shaping docker and the Weld and Intersect operations, you have an additional helper: the Intersect With or the Weld To button at the bottom. When only one object is selected, naturally it’s hard for CorelDRAW to perform these operations. The idea behind this option is that if you have several objects nestled closely together (making a target object hard to select), you click the Weld or the Intersect button, your cursor changes to a unique shape, and you then click the desired target object to complete the operation,
• **Weld** The *Weld* command creates a new shape based on the outline shape of two (or more) overlapping objects, as shown at right. You can specify via the Shaping docker whether the *original* shapes remain on the page.

• **Trim** The *Trim* command removes any area of the backmost object that overlaps the frontmost object, as shown here—the rectangle used in this operation is not deleted and has been moved to make the result more obvious. No color change takes place; the back object does not inherit the front object’s color, transparency, or any other trait.
• **Intersect** The *Intersect* operation creates a new object based on the overlapping areas of two or more objects. The original objects remain on the page, and the result is not obvious because the new object is in the same position as the overlapping parts of the original objects. In the following illustration, the square was on the bottom, and the resulting object takes on the color of the bottom object. *Intersect* is a great operation for creating difficult crops of complex objects.

![Intersect Operation](image)

• **Simplify** The *Simplify* command removes all hidden areas of objects that “underlap” foreground object. This command is great for simplifying an intricate drawing, and it can also make a design that otherwise might not print to PostScript print just fine. A different order and arrangement of objects will give you slightly different results.

• **Front Minus Back** When two or more shapes are selected, applying the Front Minus Back command removes the hidden area of the object in back from the shape in front. When more than two shapes are selected, it removes all portions where the shapes in back are overlapped by the object in front, leaving only the object in front remaining, as shown in the center of the next illustration.

• **Back Minus Front** This shaping command works in reverse of Front Minus Back. While at least two shapes are selected, applying the Back Minus Front command removes the portions of the shape layered in front from the shape in back. When more than two shapes are selected, it removes all portions where the shapes in front overlap the shape in back, leaving only the shape in back remaining. The following shows the results of Front Minus Back and Back Minus Front, when applied to two objects, in the same front-to-back order.
• **Create Boundary** This operation is similar to Weld, except it leaves the target objects on the page. Also, if there are empty spaces between objects, Create Boundary ignores them when making the combined single object. Here is an example of several selected objects and, below them, the resulting shape. By default, the new object has no fill and is ordered on top of the target objects. Just click a foreground color on the color strip, and the new object will become immediately apparent.

![Create Boundary](image)

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**Embellishing Corners and Object Node Editing**

Subtracting and adding objects is only the beginning of your adventures in making a shape that’s approximately what you had in mind to exactly what you envision. The following sections introduce you to a trio of effects on the Fillet/Scallop/Chamfer docker, and a tool that can change the corners or the line segments that connect object corners.

**Fillet/Scallop/Chamfer**

Display the Fillet/Scallop/Chamfer docker by choosing it from Window | Dockers. With this docker, you can truncate the sharp corners of an object you draw.

• **Fillet** Rounds the corners of an object.

• **Scallop** Trims a semicircle from the corner of an object.

• **Chamfer** Lops a straight angle off a corner at an angle perpendicular to the interior angle of the corner.

When Fillet/Scallop/Chamfer evaluates sharp direction changes along a path, it “rounds off” the point of a convex area toward the inside of the path and adds to concave areas. This feature is terrific for quickly building elegant objects such as furniture pieces and machine parts and simply nice ornaments for a desktop publishing document. Enter a positive value in the Radius field (or use the elevator buttons on the docker), and you'll see a faint outline preview in your document. Click Apply when you're happy with the preview. Fillet/Scallop/Chamfer is a destructive operation, unlike the Shaping operations, so if you want to keep your original object, duplicate it before using this docker.

The following shows the effects of the Fillet/Scallop/Chamfer docker on the same zig-zag object created with a single-click and the Pen tool. Because the Radius of this trimming effect is measured in page units, it’s usually a good idea to keep rulers visible in your document, and to refer to them to achieve the exact degree of corner truncation you need.
Using the Eraser Tool

The Eraser tool, shown next, completely removes areas of selected objects you click-drag over—just like a real art eraser, but without the stubble landing in your lap. The Eraser comes in two different shapes, and you can define the size by using the Property bar. You’ll find it in the Toolbox grouped with the Knife, Virtual Segment Delete, and Crop Tools.

Working with Eraser Operations

With this tool, you can remove portions of shapes in four ways:

- **Double-clicking** When you double-click a selected shape, you remove an area that is the shape of the cursor. Therefore, if you double-click a lot with the circular cursor, you can quickly design a slice of Swiss cheese.

- **Single-click two points** If you single-click, move your cursor, and then click a second time, the Eraser tool erases a straight line through the selected object.

- **Click-drag** This is the most common method of erasing, and the results are totally predictable and usually look like hand-painted strokes. If you click-drag, you erase the area you’ve dragged over on a selected object.

- **Click, hover over a different area, and then press TAB** This technique creates several connected straight-line segments, and after you get the hang of it, it will feel like you’re painting with an eraser. You’ll quickly produce phenomenally expressive and complex drawings.
CHAPTER 4

Experiment with Text and Fonts
CorelDRAW’s Text Tool

All text you want to enter on a page in CorelDRAW is created with the Text tool, the tool with an A as its icon in CorelDRAW’s Toolbox. To begin, click its button in the Toolbox or press F8. If there’s already text on the page, double-clicking the text with the Pick tool switches the current tool to the Text tool and gives you an insertion point for adding text. The Text tool cursor is a small crosshair with an A below and to the right, which becomes an I-beam (a text-editing cursor) when it’s over a text object. You click anywhere on the page or the pasteboard to create an insertion point and then start typing.

When you use the Text tool, you can produce two different types of text objects in a document: Artistic Text and Paragraph Text. Below you see a layout that uses Artistic Text in combination with the Text | Fit Text To Path command—the path is hidden in this illustration. The smaller body copy text uses Paragraph Text; the top paragraph wraps around the top of the image using a CorelDRAW Envelope. Artistic Text and Paragraph Text have different properties, but both are added to a document using the same Text tool. Artistic Text, because of the way it’s produced in a document, is easy to reshape and distort—you’ll find it simple to do artistic things with it, such as creating a company logo. Conversely, Paragraph Text is optimized for longer amounts of text, and it’s a great text attribute for quickly modifying columns of, for example, instructions, recipes, short stories, and so on. In short, Paragraph Text is best used for several paragraphs of text in a composition whereas Artistic Text should be reserved for headlines and just a few lines of text you might want to curve along a path, extrude, or do something else unique and fancy with.

Formatting options can be accessed from the Text Property Bar (shown below) or from the menu Text -> Character Formatting, or Text -> Character Formatting.
4.1 Artistic Text

Artistic Text is best for illustration headlines, callouts, and other occasions when you want to create text with a special effect such as extrusion, an envelope, text on a path, and so on. To add a line of Artistic Text to a document, with the Text tool, click an insertion point and then type your phrase; alternatively, after clicking an insertion point you can press CTRL+V to paste any text you have loaded on Windows’ Clipboard. To create several lines of Artistic Text, press ENTER when you want to skip to a new line and then continue typing. By default, all Artistic Text is set in Arial, 24 point.

Artistic Text is also easy to convert to curves so you can modify a character in a word: for example, Microsoft’s logo has a tick missing in the second “o”. To duplicate this effect (but not Microsoft’s logo), you begin with Artistic Text for the company name, press CTRL+Q (Object | Convert To Curves), and then edit away using the Shape tool. Artistic Text can be fine-tuned using the features on the Property bar when the text is selected using either the Pick tool or the Text tool.

Mirroring (Horizontal and Vertical) In addition to creating special effects, the Mirroring buttons are also useful when, for example, you want to print a T-shirt transfer with your company name. The name needs to be reversed (mirrored horizontally) to print on the transfer paper, so the unreversed print on the T-shirt reads correctly (or at least without the need for a mirror).

• Type of font (file) To the left of the font name in the Font Name drop-down list is an icon signifying what file format the chosen font uses: OpenType, Type 1, or TrueType. This option is nice when you’re sorting your fonts in Bitstream Font Navigator or the Fonts utility in Control Panel.

• Font Name, Font Family The font name is the name of the typeface. By default, you’re using Arial 24 point. You change fonts in a new document by selecting the text you’ve typed with the Pick tool and then choosing a different font from the Font Name drop-down list. If a font has family members, you’ll see a right-facing triangle to the right of the font name when the drop-down list is extended; choose it by hovering above the triangle to reveal the flyout and then click the family member you want to use. You can also perform a speed-search by clicking the current name in the Font Name drop-down and then typing the first few letters of the font you want. The drop-down list immediately scrolls to the right neighborhood of installed fonts, making your selection a fast and effortless one. Note also that on the Font Name drop-down list, at the top, above the divider bar, are the fonts you’ve chosen recently for previous documents and even from previous CorelDRAW sessions.

• Point Size Text has traditionally been measured in points; with current digital typeface technology, the measure is 72 points to the inch. Artistic Text used as a printed headline can be anywhere from 18 points for a flyer headline to 72 points for a newspaper headline to 300 points and up for headlines that fairly scream at the reader.
• **Bold and Italic** These buttons on the Property bar are shortcuts to formatting a whole line of text or only selected characters as bold and italic members of the typeface shown in the Font Name box. If a specific font has no family members, CorelDRAW doesn’t “fake” a bold or italic look, and the buttons are dimmed. If you need an italic treatment of a font that has no italic family member, a quick fix is to use the Transformation docker, and then set Skew to about –12 degrees to apply to the Artistic text.

• **Underline** An underline is an effect available for every font you have installed—you click the button when text is selected and CorelDRAW renders an underline. You can modify the style of the underline by highlighting the underlined text and choosing Object Properties. Then, in the Character area of the Object Properties docker, you click the Underline flyout and choose the type of style you prefer.

• **Text Properties** This button appears on the Property bar when you select the Text tool. Clicking this button displays the Text Properties docker. The Text Properties docker is very similar to the top area of the Object Properties docker. Essentially, anything you need to do to customize one or more characters in a text string, you can do using the features on the Text Properties docker. You can access the features of the Text Properties docker by clicking the button when text is selected with the Text tool and Pick tool or by pressing CTRL+T when the Shape tool is the active tool.

• **Interactive OpenType** Explained shortly, Interactive OpenType shows alternative characters in highlighted OpenType text you’ve typed. OpenType fonts sometimes contain scores of custom characters that are very hard for average users to access and add to text. The Interactive OpenType button shows and hides alternatives, allowing a one-click addition of special characters when a specific OpenType font contains them.

• **Bulleted List** With text selected (with the Pick tool) or highlighted (using the Text tool), clicking the Bulleted List button creates a bulleted list from your text, using a standard bullet symbol, a hanging indent for the text, and a new bullet wherever you’ve inserted a hard return in Paragraph Text. This button is inactive when using Artistic Text.

• **Drop Cap** By default, when Paragraph Text is highlighted and this button pushed, a three-line-tall drop cap is auto-created. Options to adjust the drop cap’s height, spacing, and whether a hanging indent is used or not is found on the Text menu. This feature is covered in [Chapter 11](#).

• **Quick Customize** Although technically not a part of the Text Properties features, if you want to add or remove a button on the Property bar when the Text tool is active, clicking this button will do the job.

• **Edit Text** This button displays a text editing box, which also appears when you click the Text tool on text that has an effect applied such as an envelope or an extrude. CorelDRAW is designed with text-editing flexibility in mind, so to transform text using just about any feature—and to allow the text to still be editable—you work in a proxy box so you don’t have to start over when you make a typographic error. You can use the text cursor to select one character at a time, by words, or by whole paragraphs. You can also the UP, DOWN, LEFT and RIGHT arrow keys on your keyboard to select strings of sequential text, a word, a line, or a paragraph at a time.

If some text is already selected, the selection can be extended by clicking at the new endpoint of the selection while holding down the SHIFT key.

* Double-clicking with the cursor selects the word in which you double-clicked.
*Triple-clicking with the cursor selects the entire paragraph in which you triple-clicked.

*Hold down the CTRL when you single-click to select a single sentence.

**Options for Formatting Characters**

The Text Properties docker takes the place of other UI features in previous versions, and includes more comprehensive options to change selected characters. If you’re new to CorelDRAW, you can change Artistic Text characters in three different ways:

- Use the Shape tool in combination with the Property bar. This method gives you control over character positioning, rotation, and other properties as covered in the next section.

- Use the Text tool or the Shape tool in combination with the Character section of the Object Properties docker. Using this method gives you more options and thus more control than the Property bar. Using Object Properties with characters is covered later in this chapter.

- Use the Text tool, the Shape tool, or the Pick tool (which works but you cannot select individual characters) in combination with the Text Properties docker. The same comprehensive options are on the Text Properties docker and in the Character area of Object Properties, but for experienced users this feature might be easier to remember by its historic shortcut, CTRL+T.

**4.2 Paragraph Text**

Paragraph Text is similar to text objects used in desktop publish applications. Paragraph text can be used for larger bodies of text that have greater formatting requirements. It is most often used when creating columns for names on a plaque, or wrapping text around an object. When adding paragraph text, you must first create a text frame.

To create a Paragraph Text object, choose the Text tool from the Toolbox, and then click-drag diagonally to create a rectangle into which you’ll enter the text. The click-hold+diagonal-drag technique (commonly called a marquee-drag) is the way to create a paragraph block. A paragraph block is just a container. It can be filled with text you type, or you can fill it immediately with loaded text. The sample text inside the Paragraph frame is simply a placeholder; it disappears after you’ve added your own text. Paragraph Text frames have resizing handles as well as kerning and leading handles (Artistic Text features these as well), discussed later in this chapter. You can fill a Paragraph Text frame with text in one of three ways:

- **Type in the frame.** You’ll probably want to run spell-check (Text | Writing Tools | Spell Check or press CTRL-F12) when you’re finished typing.
• *Paste from the Clipboard.* You’ll see a dialog before you can paste if you press CTRL+V, or choose Edit | Paste (and Edit | Paste Special). Here, you can choose to keep or discard the formatting of the text on the Clipboard.

• *Import a text file.* Depending on the text file type, you might be prompted to install a compatibility pack, especially for older MS-Word documents. With a broadband connection, the process takes about three minutes; you don’t have to quit CorelDRAW; and you can paste after the compatibility program is installed. By contrast, a plain TXT file with no font or paragraph attributes will import perfectly after you choose an import style from the Importing/Pasting Text dialog.

The frame you drag for imported Paragraph Text might not accommodate the amount of text. As a result, the *overflow* text is hidden; in this case, the frame is a dashed red outline instead of black. To reveal the text, you drag down on the “windowshade handle”—the small square tab, bottom-center, on the text frame; when there’s hidden text, the handle has a down arrow at its center.

You always have the option to *link* Paragraph Text frames. Instead of spoiling a design by increasing the size of a frame, you can create a second, third, or any number of additional frames, and then flow the excess text into the new frames as you create the frames. You can move the linked frames around in your design, and the *content* (the meaning of the typed text within Paragraph Text) remains in perfect order.

**Fitting Text to Curve**

Wrapping text around an object has its alter ego: putting text inside a shape, so it looks as though the text itself forms a shape. And there’s a third variation called Fit Text To Curve—you can have Artistic Text follow an arc, a freeform line, and an open or closed shape, and you have options for the style in which the text follows your line.

**Pouring Text into a Shape**

The simplest way to form text so it appears to have a geometry other than rectangular is to first create a shape, copy some text to the Clipboard if you don’t have a message in mind, and then carefully position your Text tool just inside the line of the shape (perhaps 1/8th of a screen inch inside) until the cursor turns into an I-beam with a tiny text box at its lower right. Then click to start typing, or click and then press CTRL+V to paste your Clipboard text.

In this next illustration, you can see sample Paragraph Text at left; it’s been copied to the Clipboard, and then the Text tool has been placed close to the white ellipse; it makes no difference whether the container object is selected. When the cursor changes to the one shown in this illustration, start typing, or in this case, press CTRL+V, and then format your text, and probably assign the container outline no color and no width to complete the illusion.
One popular treatment for text “bound” to an object is the arc of text. You apply this treatment by first creating the arc shape (a circle usually works well) and then, instead of clicking inside the shape, you hover above the shape until your Text tool cursor becomes an I-beam with a tiny swooping curve beneath it.

**CorelDRAW’s Font Playground**

Corel Corp. has added a utility to CorelDRAW X7 that’s both useful and fun. The Font Playground is an onscreen panel that looks like any other CorelDRAW docker, but aside from copying and pasting text, its purpose is not to enhance drawings or modify text, but to preview and compare a phrase or word when set in different font styles.

Type some Artistic Text, something like **FLASH SALE 8 HOURS ONLY**! Then Choose Text | Font Playground. The illustration shown here is a composite of the Font Playground docker, showing multiple views of it to clue you into your options visually.
From left to right, your display options for the font type and the preview you’ve entered (covered in a moment) are as follows:

- **Single-line Display** Clicking this button displays a phrase once, in as many font styles as you like.

- **Multiline Display** Clicking this button displays an entire phrase you might choose as the display sample, again, in any number of chosen font styles.

- **Waterfall** This button option shows you only the text sample you’ve clicked on in the preview window, at various increasing point sizes. This option is useful for predetermining whether your chosen font is legible at, say, very small point sizes.

Additionally, you have a Type Size slider toward the top left of the docker. But perhaps the neatest part of Font Playground is the option to copy a phrase into the Playground so you can compare it in several styles and then copy the chosen phrase and typeface to the drawing page.

To put a phrase into the Font Playground preview window, select the text on the drawing page with the Pick tool, press CTRL+C to copy your text selection, and then click an entry in the preview window and press CTRL+V. Remember this shortcut because the docker doesn’t have a Paste command or button.

To put your dream font and phrase on the page, all you do is click+drag the desired version of your text from the text entry list on the docker into your CorelDRAW document.
CHAPTER 5
Using Advanced Tools and Special Effects
5.1 Filling Objects

A shape without a fill on your drawing page is like a brand-new coloring book. To make a coloring book—and your CorelDRAW artwork—more complete, you need to fill your shapes with colors and textures. CorelDRAW has more than a half-dozen types of fills you can apply to your shapes, and these types have hundreds of variations. In computer graphics, you have over 16 million solid shades of color at your disposal; imagine what you can do with blends, patterns, and textures of colors!

The worst part of filling CorelDRAW objects will be deciding on a style of fill. Each type of CorelDRAW fill has its own special characteristics:

- **Uniform** fills apply flat, solid color.
- **Fountain** fills make a color transition from one color to another, in different directions—sometimes also called a gradient fill. You can also create a fountain fill composed of more than two different colors. CorelDRAW ships with many preset fills, and this chapter demonstrates how to pick and apply them.
- **PostScript** fills are good for repeating patterns. Although PostScript is a printing technology, you don’t need to print a CorelDRAW document to see a PostScript fill, and you can indeed export a PostScript-filled object to bitmap format and the fill looks fine. PostScript fills support transparency and are ideal for exporting to EPS file format to use in desktop publishing programs. And, naturally, a PostScript fill is valid for printing to a PostScript printer.
- **Pattern and texture** fills can fill shapes with bitmaps, including photographs, and a large supply of preset bitmaps is included with CorelDRAW.
- **Mesh** fills take multicolored fills and present you with the option of “smearing” colors within the fill, much like finger-painting.

Every fill type is applied in a slightly different way through the use of onscreen tools, docker windows, or the Interactive Fill and Mesh Fill tool.

From Uniform to Non-Uniform Object Filling

The quick way to apply any of the fill types is to use the Fill tool, shown here. You’ll find it at the bottom of the Toolbox; to select it quickly, press G. You’ll see a hint here that the Fill tool is also a selection tool—the cursor is an arrow cursor with a paint bucket. You don’t have to have already selected the object that you want to fill when you use this tool. You can click an unselected, solid-filled object with the Fill tool to select it, and then a click-drag on the object, by default, applies the Linear-style fountain fill, making a transition from the current solid color to white. You can then change the colors used, or choose a different fill type.
from the Property bar—and here’s where version X7 has been reworked to make applying different types of fills easier than ever.

Suppose you just filled an object with the default Linear-style fountain fill. If you’ve used a previous version of CorelDRAW, you’re going to be pleasantly surprised to see more than one control node on the fill: a mini–color and transparency picker pops up when you click over a color node. And all the fill types you can imagine are on the Property bar. Additionally, you can change some controls for the fountain fill parameters, so this streamlined, fortified Fill tool will get you where you need to go in a jiffy. The illustration shows you what you’ll see on your page when you click-drag with the Fill tool to create a linear gradient. The element names and what they do are described in a moment.

5.2 Cropping Tool

The Cropping Tool works with both vector and bitmap graphics. You could achieve the same with the Trim Option in the Shaping Tool, but it’s far more time consuming. The standard from most programs is the Cropping Tool, which CorelDRAW X3 now has. You 'crop' the area you want to save and everything else on the drawing page disappears.
To define the protected area to which you want to crop the selected objects, click and drag. You can use the **Crop** tool on both bitmap and vector objects.

To crop the selected objects to the protected area, double-click the protected area. Results after double-clicking within the 'cropped area'.

5.3 Contouring

Contour effects instantly create perfect outlines of shapes or paths by the dozens or even hundreds. The result is similar to viewing a topographical or contour map, hence the name.

During a contour effect, dynamically linked shapes are concentrically created outside or inside an object's path. CorelDRAW effectively calculates the shape of each contour step and applies progressive outline and fill colors based on the original object's properties and selected contour options.

While a contour effect is linked to an object, the object itself becomes a control object, and the new shapes created become the contour group. Changes made to the properties of the original immediately affect the linked group. While the contour group is selected, its properties can be edited at any time—without your having to begin the effect from scratch.

Using the Contour Tool and Property Bar

To apply contour effects, you'll need to use the Contour tool, shown here, in combination with the Property bar. You'll find the tool in the Toolbox, with other interactive tools: Blend, Drop Shadow, Envelope, Distort, Extrude, and Transparency.

While you're using the Contour tool, the Property bar displays options for customizing the effect. These options include contour presets, contour direction, steps and offset spacing, color rotation, outline and fill color, and buttons for copying and clearing the effect.

Below are the actual steps in CorelDRAW for creating the Contour effects:
Editing Contours Interactively

The easiest way to edit a contour effect is by hand, using the Contour tool to change the interactive markers in combination with adjusting Property bar options. Use the options to adjust the direction, spacing, and offset values of the effect.

The black diamond-shaped marker indicates which object is the effect’s control object. The white rectangle marker indicates the End object in the contour group, and its position sets the distance between the control object and the End object in the effect. A slider between these two enables you to adjust the spacing between the contour steps interactively, which, in turn, sets the number of steps by dividing the difference.

You’ll also notice the Contour tool cursor changes its appearance as you drag outside, inside, or to the centermost point of your selected object. While held over an object, the cursor will also indicate whether you can apply the contour effect to the object.

5.4 Shape Editing Tools

Corel has added tools to the Shape Edit group on the Toolbox: Smear, Twirl, Attract, and Repel are incredibly dramatic and powerful tools that will make you feel as though you’re dragging your finger through wet paint.
Using the Smooth Tool

New to version X7 is a tool that can undo accidental bumps and curves you’ve inadvertently created along a path. You can get better results with the Smooth tool than you can selecting nodes with the Shape tool and then using the Reduce Nodes slider, because you might want some areas to remain rough, while smoothing other areas. With the Smooth tool, you have complete control over which areas are smoothed.

Three controls on the Property bar govern how the Smooth tool works:

- **Nib Size** Determines the size of your cursor.
- **Rate** Determines how quickly the tool responds. At a fast rate (a high value), scrubbing over a path produces immediate results; the curve is smoother and usually there are fewer nodes. At low rates, you can be more selective and leisurely about smoothing your object.
- **Pen Pressure** Works only if you are using a tablet or a digitizing stylus. You set how much pressure is applied with the tool, and what result you get when you press harder or lighter. You might want pressure set to determine the rate of the Smooth tool.

The Smear Tool

The Smear tool behaves like the Smudge tool’s big brother (covered later), offering more plasticity to areas you drag over, more control, and with a little practice, a gallery of freeform shapes that look like anything but vector graphics. On the Property bar, you have the following options:

- **Nib Size** Nib size determines the tool’s diameter.
- **Pressure** Artists who use a mouse can use the num entry box or the flyout slider to set the tool’s intensity.
- **Smooth and Pointy Smear buttons** Use one or the other type of smear to affect the end of a stroke. Smooth is good for natural, freeform distortion, whereas Pointy—an aesthetically severe effect—might be useful for embellishing machined parts and metal band logos.
- **Pen Pressure** Digitizing tablet users should click the Pen Pressure button to use physical pressure to add character to strokes.
Using the Smudge Brush

The Smudge brush is sort of a paint tool in a drawing program: you can dramatically alter shapes in a natural, painterly fashion, with results that would take hours using any other method. You move areas of a vector object by dragging from a starting point inside the object and dragging outward, or starting outside and dragging inside the object. The result is a little like the Eraser tool if you move object areas inward, and if you drag from the inside out, the result might remind you of dripping paint.

Applying Smudge to Shapes

Using the Smudge brush, you can alter the outline shapes of open or closed paths by click-dragging across the outline path, in either an outward direction (to add to the object) or an inward direction (to create a recess in the object). As you drag, the path is altered according to your drag action and the Smudge Brush cursor’s shape settings. The following illustration shows a creative example of using the Smudge brush: the rectangle is almost a puzzle piece now, the editing took less than five seconds, and the resulting path can be refined using the Shape tool or other CorelDRAW features.
5.5 Creating the Illusion of a 3D Image

For centuries, traditional artists have studied and sweated, and sometimes failed, to create artwork that conveys a sense of dimension. Perspectives, vanishing points, and angle of view can easily elude all but the most diligent, talented people because the sense of a third-dimension on a 2D canvas is, after all, an illusion.

Fortunately, you don’t have to go to school for years and you don’t have to break a sweat when you want a little photorealism and dimension the next time you sit down to draw because you have CorelDRAW. You’ll learn how to lift your graphical ideas right off the page with version X7’s perspective effect and CorelDRAW’s legendary Extrude tool.

Getting a Perspective on Perspective

Isometric views of objects are quickly accomplished in CorelDRAW by putting an object into Rotate/Skew mode (clicking once and then a second time), and then skewing the object by click-dragging a middle control handle. Isometric views are completely the province of computer graphics and geometry. They don’t exist in the real world with human eyes, but they are useful in illustration to put equal emphasis on all visible sides of an object. For example, if you want your client to read the side panel of a proposed cereal box design but want the box posed to show more than one side, you’d use an isometric view (occasionally called isometric perspective). At right, you can see the same kid’s block using a wide-angle perspective. In CorelDRAW, such an illustration is accomplished by putting the vanishing points outside of the drawing page. It’s exaggerated mostly because the human eye does not have a field of view as large as 76 degrees, that is, the view is not entirely in focus.

The following illustration goes way over the top; the vanishing points are quite close to the object, and the result is dramatic, unrealistic, and unsuitable for presenting a product design. As you read through this chapter, you’ll learn that, on some occasions, you want a vanishing point on the drawing page, and on other occasions, you want the “normal” human-eye type of perspective.
Experiments in Perspective

Experimenting with the perspective effect is a lot more fun and rewarding reading about it. The operations are fairly straightforward, and you’ll probably get ideas for future illustrations just by playing with it! Single objects and object groups can be put in perspective; you can change the angle of a perspective shape (or group) by click-dragging any of the four control corners or by click-dragging the vanishing point(s), which changes two of the four control corners at once.

Tutorial Creating One-Point Perspective

1. Press D, the keyboard shortcut for the Graph Paper tool. On the Property bar, set the number of columns to 12 and the number of rows to 12.

2. Hold CTRL while you click-drag to constrain the graph paper object to a square. Make the object fairly large, about 7” is good. Because the perspective effect can appreciably shrink one or more sides of an object, it’s a good design practice to create objects that are a little exaggerated in size.

3. Click a deep red swatch on the color palette to set the fill for all the cells and then right-click over a pale yellow to set the outline color.

4. Choose Effects | Add Perspective, as shown here. Your object now has control handles around it, and your current tool has changed to the Shape tool. The Shape Tool is used during Perspective creation. Additionally, if you intend to edit a perspective effect while you’re working on a different area of a design, all you need to do is choose the Shape tool and then click an object that’s in perspective.

5. Click the top-right handle of the Perspective Effect box surrounding the graph paper object. Hold CTRL to constrain the movement of your cursor to the first direction in which you drag, and then drag down to about the second or third cell in the right column. You’ve created a perspective effect on the object, as you can see the cells align more or less with the effect’s red-dotted overlay reference, and a vanishing point appears directly to the right. If the vanishing point lies off-screen—which it will when you use a small amount of perspective—press F3 to zoom out so it shows.
6. Click-drag the vanishing point up and then down as long as this is an experiment and not playing for points. Notice what happens: you’ve defined one-point perspective—this is the right side of a hypothetical cube, and one-point perspectives have only one vanishing point. So the left side of the object is anchored; it doesn’t change with the perspective change.

7. Click-drag the vanishing point left and right. The left side is still anchored, and what you’re doing is making the hypothetical box’s right side deeper and shallower, extending to and from an imaginary horizon on the page.

8. Save this document; you’ll work with it in a moment, so don’t close it. This is only the beginning of the experiment with suggesting depth in a 2D document!

**Tutorial Creating a 3D Ground Plane**

1. With the graph-paper document you saved in the previous tutorial open, choose the Shape tool and then click the object to reveal its Perspective Effect control handles and the vanishing point you defined.

2. Click-drag the top-right control handle up and toward the center of the object, until you see a second vanishing point marker at about 12 o’clock on the page. You might want to zoom out to better see the second vanishing point because it is initially defined quite far away from the object. In the illustration after Step 9, you can see how the graph paper object should look. Notice also that because this two-point perspective is so extreme, the graph paper outlines are actually curved to accommodate the severely distorted perspective. This is not an optical illusion; the lines are indeed curved now.

3. Choose the Pick tool, and with the graph paper object selected, click it to put it into Skew/Rotate mode. Rotate the object about 45 degrees counterclockwise—stop click-dragging when the Property bar reports that you’ve rotated the object by about this amount. Changing the orientation of the object by only changing the vanishing points’ positions would be difficult.

4. Choose the Rectangle tool and then click-drag a rectangle to cover the graph paper object.

5. Choose the Fill tool, and then click-drag from top to bottom on the object so the top is black, fading to white at the rectangle’s bottom. Then choose a red from the color palette to fill the Start color indicator of the fountain fill.
6. Choose the rectangle with the Pick tool, and then press SHIFT+PAGE DOWN to put the rectangle on the back of the drawing page, behind the graph paper object.

7. Choose the graph paper object, and then right-click the white color swatch on the color palette. Then double-click the Outline Pen swatch on the Status bar to open the Outline Pen dialog.

8. Type 4 in the Width field, and then click OK to apply this width. You’re done and your composition looks like the illustration following Step 9.

9. Left-click the No Fill swatch now while the graph paper object is selected.
CHAPTER 6

Bitmaps in CorelDRAW
6.1 Bitmap Artwork

While CorelDRAW is noted for its ability to create and work with vector images, it can also handle the basic needs required by the laser owner for handing bitmap images.

We can produce quality products with the tools with have in CorelDRAW. All we need is quality artwork. Sounds simple, but what is quality artwork. The two images shown below. Can you guess what they are?

While these were not actual pictures, they are created to enhance your awareness that artwork needs contrast, especially when working with lasers.

**Bitmaps – the Basics**

Okay, here are the very basics about bitmaps!

Bitmap images, also called raster or paint images, are made of individual dots, called pixels (picture elements), that are arranged and colored differently to form a pattern. When you zoom in, you can see the individual squares that make up the total image.

Increasing the size of a bitmap has the effect of increasing individual pixels, making lines and shapes appear jagged. Reducing the size of a bitmap distorts the original image, because pixels are removed to reduce the overall image size.

Applications like Corel PHOTO-PAINT work with bitmap images. Bitmaps are also the images that scanners and cameras create. The bitmap storage formats include: TIF, BMP, PCX, JPG, GIF and others. TIFF is the most preferred format because it is most widely used format.
Bitmaps cannot be edited in most graphics software. Some basic functions such as cropping, scaling, or mirroring might be possible but it is usually necessary to use a bitmap image processing software to perform a dot by dot editing, rotation, or scaling of the bitmap.

**Bitmaps and the Laser**

The biggest misconception with working with lasers and bitmap images is our past experiences with cameras and photography. We have always been taught that the higher the DPI (dots per inch) we can use to take or picture or scan an image, the better the output. This is true with some of the really high end printers and scanner. However, *this is incorrect when working with bitmaps that output to the laser.*

Here are some general thoughts about DPI and the laser (and note that general was italicized).

- Lasers power in our industry usually runs from 25-120 watts, which can affect the size of the beam or spot size of the laser. And the lens available on these machines can range from .00125 up to .007 inches wide.
- Most lasers use a 2.0 lens - it is focused 2.0 inches from the surface of the material. When a laser fires, it produces a beam, or spot size which is approximately .005 wide, or about 200 spots in 1 inch. So theoretically, we only need a scanned image of 200 DPI. In the real world, 250-300 DPI is the most preferred to allow for overlapping and smoother edges.
- Okay, that’s not too bad. But our next problem is the laser does not always produce the same width of burn or spot on all materials. Harder material likes anodized aluminum and brass may give a smaller spot, while burning deeply into wood may give a larger spot size.
- And, if that’s not enough, we are assuming you are working with perfect artwork.

### 6.2 Scanning Bitmaps into CorelDraw

**Scanning**

If you have a choice of accepting a computer file or an original photograph from a customer, always choose the photograph. You can control the file type, DPI and other options more precisely.

Often users will quickly scan the image either directly into CorelDRAW via TWAIN, and then try to do most of the resizing and editing.

**Mode Types**

Next, you need to decide what output type you want the scan to be. There are primarily three types of bitmaps output modes available from your scanning program; black and white, grayscale, and color. The laser system can print all three types of bitmaps providing that either the driver or the bitmap image-processing program converts the grayscale and/or color bitmaps into a monochrome bitmap.
**Monochrome Bitmaps**  *Most often used for black and white line art.* If you scan the image in monochrome (black and white) mode, set your scanner to at least 600 DPI. The higher the DPI, the smoother the image will be. Scanning monochrome images at 300 DPI is the minimum recommended resolution, but scanning them at 600 DPI will provide a significant improvement in the image quality. Clean it up in your bitmap image-processing program and save it to your hard disk. Monochrome bitmaps are engraved in the same manner as black filled text. The black area will turn the laser on and the white area turns the laser off.

**Grayscale Bitmaps**  *Preferred type when scanning photographs.* When scanning image in the grayscale mode, you should scan the image at no more than 300 DPI. Scanning at a higher DPI consumes more memory and will take longer to print. Unlike black and white, the laser fires different power pulses for the different shades of gray.

**Color Bitmaps**  *Should always be converted to grayscale or black and white.* Most laser drivers handles color bitmaps the same as grayscale bitmaps. Since color bitmaps use more memory, they are unnecessary and are therefore NOT recommended. Many software programs have a difficult time interpreting large color bitmaps. They sometimes can crash your computer or send scrambled images to the laser system. It is much better to avoid using color bitmaps altogether.

### 6.3 Importing Bitmaps

**The Placement Cursor**

To import a file, go to **File | Import** or click on the Import icon on the Standard Property Bar. The placement cursor will appear and you can drop it on the Drawing Page by several methods.

- When the placement cursor appears, you can choose from a few options for sizing and positioning the imported file. The options include:
  - Click the drawing page, the files original dimensions are maintained, and its top-left corner is positioned where you clicked.
  - Press **Enter** or **Spacebar**, and the file’s original dimensions are maintained, and it is centered on the drawing page.
  - To have full control over the size and position of the imported file, you can **click and drag** the imported file to your exact specifications on the drawing page. The import cursor displays the
dimensions of the resized file as you drag on the drawing page. But remember enlarging the image reduces your resolution, or DPI.

You can also hold down Alt key as you drag, and alter the original dimensions. The import cursor displays the dimensions of the resized file as you drag on the drawing page.

**Bitmap Options**

After we import the file, we follow the same procedure when working with all bitmap or raster artwork. CorelDRAW offers a variety of options for resizing, cropping and changing the mode of the image.

**Resample**

When you resample a bitmap, you can change the image size, the resolution, or both by adding or removing pixels. For example, if you make an image larger without resampling, you can lose details because the image’s pixels are spread over a greater area. By resampling, you can add pixels to preserve more detail from the original image. Resizing an image maintains the same number of pixels in a smaller or larger area. You can lose details when you make an image larger without resampling because the image’s pixels are spread over a greater area. Resampling adds pixels to maintain some of the original’s details. **However, resampling does not maintain the original quality of the picture.**

Any artwork that is brought into CorelDRAW should be resampled.

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**Resizing**

While you can resize you image by dragging the corner handles, this increases the DPI. It is **recommended** that you resize by the resample method. However, if you do resize by click, dragging, you should resample and change the DPI.

---

To resize a bitmap

1. Select a bitmap.
2. Click Bitmaps | Resample.
3. Choose a unit of measure from the list box beside the Width and Height boxes.
4. Type values in Width and Height boxes.
5. If you want to minimize the jagged appearance of curves, enable the Anti-alias check box.

**Crop a Bitmap**

Cropping removes unwanted areas of a bitmap. The method of cropping an image is the same method that nodes are used to change vector artwork. When you click on the Shape Tool, four nodes become available for editing. Additional nodes can be added, and lines can be converted to curves.
Cropping a Bitmap While Importing

1. Click File | Import.

2. Choose the folder where the image is stored.

3. Choose a file format from the Files of type list box.

4. Click the filename.

5. Choose Crop from the list box, and click Import.

6. In the Crop image dialog box, type values in any of the following boxes:
   - **Top** specifies the area to remove from the top of the graphic
   - **Left** specifies the area to remove from the left edge of the graphic
   - **Width** specifies the width of the graphic you want to keep
   - **Height** specifies the height of the graphic you want to keep

7. Click the drawing page.

Mode

Depending on the source of the bitmap artwork you receive, you may have to convert it to work with your desired laser output. Remember, as a general rule, line art should be black and white mode, photographs should be grayscale, and color should be converted to black and white or grayscale.

- **Black-and-White** color mode: you can change any image to the 1-bit Black-and-White color mode. In addition to conversion settings such as threshold, screen type, and intensity, there are several conversion options that affect how the converted images will appear.

- **Line art** produces a high-contrast, black-and-white image. Colors with a grayscale value lower than the threshold value that you set change to black, while colors with a grayscale value higher than the threshold value change to white.

- **Halftone** creates different shades of gray by varying the pattern of black and white pixels in an image. You can choose the screen type, angle for the halftone, lines per unit, and the unit of measure.

- **Jarvis** applies the Jarvis algorithm to individual pixels. This form of error diffusion is suitable for photographic images.

- **Stucki** applies the Stucki algorithm to individual pixels. This form of error diffusion is suitable for photographic images.

Convert To Bitmap

In most cases, the laser operator uses either black and white or grayscale modes. If you get a file that is in a color mode or you want to change modes, using the CONVERT TO BITMAP option is the best way to change modes.

You can access this option through the menu option, **BITMAP | CONVERT TO BITMAP**.
Bitmap Effects
If you did receive a file from the customer, you may have to some of the work in CorelDRAW that should have been done in the original scanning program. Some of these Effect options include:

- **Brightness/Contrast/Intensity** similar to the Contrast option in most scanners. I use it on color photographs prior to changing the mode. The menu option in CorelDRAW is Effects | Adjust | Brightness | Contrast | Intensity.

- **Invert** the most used option when working with photographs. It creates the negative image of the artwork. The menu option is Effects | Transform | Invert.

- **Dust and Scratch** used to clean up scratches on old pictures. The menu option is Effects | Correction | Dust and Scratch.

### 6.4 Power Clips

CorelDRAW lets you place vector objects and bitmapped images, such as photos, inside other objects, or containers. A container can be any object such as artistic text or a rectangle. When you place an object into a container that is larger than the container, the object, called the content, is cropped to fit the form of the container. This creates a PowerClip object.

You can create more complex PowerClip objects by placing one PowerClip object inside another PowerClip object to produce a nested PowerClip object. You can also copy the contents of one PowerClip object to another PowerClip object.

Let’s start with a simple image. We would like to have only the image of the little girl. First draw the container which is shown over the little girls face. Then go to Effects | PowerClip | Place Inside Container.

The default for CorelDRAW is to center the object inside the container. While you can move the image once it is in the container, you can have it center to the container by changing the PowerClip default CorelDRAW uses. Go to Tools | Options | Workspace | Edit and de-select the Auto-center new PowerClip contents option. Here is the same image (Figure 7-5) with Auto-center turned off. The outline was change to white.
6.5 A Trick with the Eyedropper Tool

The Eyedropper and Fill tools have been dramatically improved to make your work easier. In addition to sampling and applying colors, you can now use these tools to copy:

- complex fills
- outline properties
- text formatting
- effects (extrusions, drop shadows, envelopes, and more)
- transformations (rotating, moving, sizing) applied to objects

Before we use the Eyedropper tool, let's first start with applying a white fill to the portrait oval (click on the White swatch on our color palette). And give the outline a NO-FILL (X swatch at the top of the color palette). This will help us compare the color we want to copy from the background of the photograph.

CLICK the Eyedropper flyout, and CLICK the Eyedropper tool.
The **EYEDROPPER** property bar appears.

From the **EYEDROPPER** Property Bar, select Sample Size. This allows you to get a better sampling of the color. In this lesson, I used **3 x 3 Pixel Sample**. Click **OK**.

On the property bar, choose **Sample Color** from the list box. The other option, **Object Attributes**, allows you to copy Transformations, Properties and Effects. With the **EYEDROPPER** icon, click on an area of the blue.

Hold down the **SHIFT** key. The **PAINTERBUCKET TOOL** icon appears. **CLICK** the portrait oval to apply the object attributes you copied from the original photograph.

Now, PowerClip the photography to our new, colored portrait oval.

The finished results are shown in the illustration.
CorelDraw Training
Back to the Basics and Beyond

CHAPTER 7
Raster to Vector
7.1 Converting Bitmap Files to Vector Lines

“All I want to do is scan in the image, and laser it. I don’t have time for cleanup, but most of all I don’t want to learn how to cleanup. If I can’t press a magic button to convert it to a perfect image, or convert to vector for cutting out, then forget it.”

Sound familiar? This was my attitude a couple of years ago. But in today’s extremely competitive market, you must be able to produce quality products from almost any kind of artwork. As a laser owner, we always hope that the customer can give us a vector file, or at the least, a computer file or a printed, “100% Camera Ready Artwork”, an old term used for perfect artwork. But you still have the customer that responds with a business card when you request the artwork for the logo on the acrylic award that was just ordered.

And what if we get a great raster image for a Christmas ornament that needs to be cut out in wood or acrylic?

There is only one way to get 100% professional results from inferior, raster artwork - recreate the artwork. While you can do this in Photoshop or other raster/pixel based programs, I prefer CorelDRAW or other vector based programs. Unlike raster images, vector files can be resized once the initial artwork is created. Here are the most popular ways of converting bitmap images to vector format:

• Use CorelTRACE, Adobe Streamline or other raster to vector software.
• Use scanner software that converts the scanned image directly into a vector format.
• Redrawing the image in CorelDRAW or other vector based program.
• Have someone else do it.

CorelDRAW Power Trace

The new PowerTRACE in X3 allows you to quickly trace bitmap images with higher precision than in previous versions. The old trace was a separate module that opened separately from the CorelDRAW program. And getting the image back into CorelDRAW was rather awkward. But now, the new PowerTRACE is an option in the program, and is smooth as glass.

Note: while I like the new version, it did leave out some of the options of the old trace.

I’ll use the Coors Light logo, one of my favorites. (Note: I am using this logo as an example. Coors is the owner of this logo, and it cannot be used without their permission.)

To trace a bitmap in PowerTRACE

1. Select a bitmap – Click Bitmaps -> Trace bitmap, or the Trace Bitmap option on the Bitmaps/OLE Object Property Bar.
2. Click one of the Line Art option. The PowerTRACE dialog appears with our Coors Light logo.
Now click on OK. See, I told you it was easy. The results are below:

If it's so easy, why do they offer so many options in PowerTRACE? Because the type of trace you will be doing has to do with the type and quality of artwork you get!

Let's start with the basics. Below is the PowerTRACE dialog labeled for easy referencing.
After you click on Trace Bitmap, you need to select the type of image you are working with. Here are your choices, and a brief explanation of each:

- **Line art** — to trace black-and-white sketches and illustrations.
- **Logo** — to trace simple logos with little detail and few colors
- **Detailed logo** — to trace logos containing fine detail and many colors
- **Clipart** — to trace ready-to-use graphics containing a varying amount of detail and number of colors
- **Low quality image** — to trace photos that lack fine detail or in which the fine detail is not important
- **High quality image** — to trace high-quality detailed photos in which detail is important

To help you see how each option affects our Coors logo, we need to first look at two options in the Trace Control Screen, smoothing and detail.

- **Smoothing** — lets you smooth curved lines and control the number of nodes in the traced result. Higher values result in fewer nodes and produce curves that follow lines in the source bitmap less closely. Lower values result in more nodes and produce more accurate trace results.
- **Detail** — lets you control how much of the original detail is preserved in the traced result. Higher values maintain more detail and result in a greater number of objects and colors; lower values discard some detail and result in fewer objects.

CorelDRAW has helped us get started by providing default settings for smoothing and detail for each type of artwork.
Here is a chart of the Coors Light logo with the number of curves and nodes produced with the various default settings for each type of artwork. (Note: These settings are the default settings).

<table>
<thead>
<tr>
<th>Image Type</th>
<th>Curves</th>
<th>Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line art</td>
<td>49</td>
<td>1215</td>
</tr>
<tr>
<td>Logo</td>
<td>29</td>
<td>971</td>
</tr>
<tr>
<td>Detailed Logo</td>
<td>36</td>
<td>1075</td>
</tr>
<tr>
<td>Clipart</td>
<td>49</td>
<td>1193</td>
</tr>
<tr>
<td>Low Quality Image</td>
<td>36</td>
<td>1075</td>
</tr>
<tr>
<td>High Quality Image</td>
<td>49</td>
<td>1193</td>
</tr>
</tbody>
</table>

After comparing all of the logos, including Quick Trace which is the default, the best image type was a toss up between clipart, line art and high quality image. The other three options dropped some of the finer lines in the word “LIGHT”.

What happens if you choose CLIPART and change the smoothing and detail to DETAILED LOGO? You get the same results. These are presets to help you get started. Most of the time I will choose DETAILED LOGO, and work with the smoothing and detailed sliders for the best results.
depending on the logo. And, don’t forget the F8 trick if you want to reset the settings for each artwork type back to factory defaults.

Other options in the PowerTRACE dialog include:

- Keep or discard the source bitmap after a trace
- Discard or preserve the background in the traced result
- Specify the background color you want to remove
- Remove a background color from the entire image
- Undo or redo an action
- Revert to the first traced result
- Preview traced results – Before & after, Large preview, and Wireframe
- Zoom in or out in the preview window.
- Fit an image in the preview window
- Pan a graphic. Click the Pan tool, and drag the graphic.

**Tips for tracing bitmaps**

- If you are not completely satisfied with the traced result, consider the following tips.
- Use high-quality source bitmaps. You can adjust the traced results at any time, including during a trace, by changing the settings in PowerTRACE.
- To trace a specific area in a bitmap, you can use the Shape tool to define the area before clicking Bitmaps Trace bitmap.
- If important detail has been removed from the traced results, disable the Remove background check box on the Options page of PowerTRACE. Also, you can try enabling the Specify color option on the Options page and sample the color you want to specify as a background color.
- If background color is removed around the edges but remains in inside areas, enable the Remove from entire image check box.
- If too many colors or details are removed, make sure that the Number of colors box is set to the maximum number of colors.
- To preserve detail in bitmaps that have fine details, thin lines, and no anti-aliasing applied, choose Line art from the Type of image list box on the Options page.
Converting Bitmaps via Tracing

There are numerous powerful Line Tools in CorelDRAW for creating lines and even intricate shapes. Let’s start with the basics, the **Freehand Tool**.

**The Freehand Tool**

This tool is used mostly for creating open path, simple curves. You click on the point from where you want to start and then click on the ending point. Or you may create a continuous line by **click-drag** a path shape. Both examples are shown below:

![Freehand Tool Examples](image1.png)

When creating a straight line, first click on the starting point. Now hold down the **Ctrl** key. As you move the segment up and down, you will see it snap to certain points. The **CTRL** key constrains the line to 15 degree increments. To change the default constrain angle go to **Tools | Options | Workspace | Edit** and change the Constrain angle option.

You’ve now created the most basic elements – a straight line and a curve. Now, we need to change the straight line to a curve. While there are numerous options, we will only use a few for the tracing lesson.

![Line Tools](image2.png)

Next, convert this line to a curve and manipulate it. Here are the steps for changing a line to a curve:

| **Using the SHAPE TOOL** | select the line, you should see a dotted line superimposed on top of the original line. **CLICK** one time and a plus symbol will appear. |

| **Note:** | if a square node appears, you have double-clicked and created a new point in the line. Undo and **CLICK** only once. |
With the bitmap image on the CorelDRAW Drawing Page, Right-click on the object and from the flyout use the Lock Object option so we won’t accidental double-click and open Corel PHOTO-PAINT, or move the logo.

Next, use the ELLIPSE TOOL and create several ovals as shown in red. Sometime when working with images and applying an Ellipse, you will notice that the scanned image may not be symmetrical due to the lens of the scanner.
Next, trace the lettering using the Bezier Tool. The squares represent the individual nodes or places I clicked the mouse. I also did the right arc.

Use the CTRL key as constrains for straight line segments.

With the SHAPE TOOL select the Select All Nodes option on the SHAPE TOOL Property.

Then select curve. Do this for each of the letters and their parts. We even have converted the straight lines which we don’t need to adjust. However, it’s easier to do them all at once do we don’t have to click on each line that needs to be changed to curves. Unless we edit the lines, they will still remain straight even though they are ‘curves’.

The lettering is Century Gothic. It was aligned to the red Ellipses using the Fit TEXT TO PATH. Each of the letters had to be adjusted using the SHAPE TOOL and moving each letter’s control handle.

The completed logo after it was color filled.
CorelDraw Training

Back to the Basics and Beyond

CHAPTER 8

Importing and Exporting
8.1 Importing

One of CorelDRAW’s strongest features for many years has been its powerful import and export capabilities. Filters are translators for files created in other applications or formats. Import filters bring in the data from other applications and translate it into information that can be viewed and edited within CorelDRAW. Export filters translate file data from a CorelDRAW document to a format readable by another program or publishing medium.

With CorelDRAW’s powerful filters, we can exchange artwork without having to own many, many over priced applications. It also offers the laser owner more sources for artwork which decreases drawing or re-creating files.

Importing is primarily for bringing in files that were created on a non-laser Corel workspace, laser workspace with different settings than your laser. CorelDRAW 12 has over 60 different import filters for bringing in various file formats into your document. Here are some of the import filters and their file extensions:

<table>
<thead>
<tr>
<th>Filter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDR</td>
<td>CorelDRAW File</td>
</tr>
<tr>
<td>CGM</td>
<td>Computer Graphics Metafile</td>
</tr>
<tr>
<td>CLK</td>
<td>Corel R.A.V.E.</td>
</tr>
<tr>
<td>CMX</td>
<td>Corel Presentation Exchange</td>
</tr>
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<td>CSL</td>
<td>Corel Symbol Library</td>
</tr>
<tr>
<td>DES</td>
<td>Corel DESIGNER</td>
</tr>
<tr>
<td>EPS</td>
<td>Encapsulated Postscript</td>
</tr>
<tr>
<td>WPG</td>
<td>Corel Word Perfect Graphic</td>
</tr>
<tr>
<td>CMF</td>
<td>Enhanced Windows Metafile</td>
</tr>
<tr>
<td>PDF</td>
<td>Adobe Portable Document Format</td>
</tr>
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<td>GEM File</td>
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<td>VSD</td>
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</tr>
<tr>
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<tr>
<td>DRW</td>
<td>Micrografx Designer</td>
</tr>
<tr>
<td>HTM</td>
<td>Hyper Text Markup Language</td>
</tr>
<tr>
<td>SVGZ</td>
<td>Compressed SVG,</td>
</tr>
<tr>
<td>PCT</td>
<td>Macintosh PICT</td>
</tr>
<tr>
<td>SVG</td>
<td>Scalable Vector Graphics</td>
</tr>
<tr>
<td>DXF</td>
<td>AutoCAD</td>
</tr>
<tr>
<td>DWG</td>
<td>AutoCAD</td>
</tr>
<tr>
<td>PLT</td>
<td>HPGL Plotter File</td>
</tr>
<tr>
<td>PAF</td>
<td>Frame Vector Metafile</td>
</tr>
<tr>
<td>PIC</td>
<td>Lotus PIC</td>
</tr>
</tbody>
</table>

These import filters allow you more opportunities to bring in artwork from your customers programs.

**CDR File**

Remember if you have a file created on a lower version than your current version, you don’t have to import it. Corel will automatically open it. This would apply to old files on your computer after you have updated. Why would you want to import a CorelDRAW file?

While having a CDR file is great, here are two issues that you need to be aware; having the right font and possibility of importing excessive styles.

Fonts can come from a variety of sources – programs, after market sources or those already installed in your computers operating system. It is virtually impossible to have all of the fonts. Have your customer send you two files – one with your text characters in tact, and the other file has the text characters converted to curves. If you don’t have the font, you can fall back to the curves version. *You will not be able to text edit the curves file.*
EPS

EPS is the most widely usable file format for graphics which are to be included in page-layout and text processing applications.

What is EPS? An encapsulated PostScript file is a PostScript file which describes a single page. The EPS file can contain any combination of text, graphics, and images.

Some EPS files contain a low resolution, bitmapped image preview, or header. If the header isn’t available, you will get a gray box.

The original intention of this format was for outputting, not editing. You would import or place the file in your application and output it to a printer. And, EPS files were intended for output to PostScript printers. Any non-PostScript printers, such as a laser engraver, will only print out the low-resolution header.

PS, EPS, PRN

The CorelDRAW import for the PS, PRN, EPS – PostScript Interpreted format is one of the best around, considering this file type was not originally intended to be edited. When you get to the Import Dialog, you have several options. Leave the default VM (virtual memory) set at the default at 3.0 MB. If you have import issues, try a bigger setting. You have two options with Import Text As – Curves and Text. If you have the font, use Text. If you select Text and don’t have the font(s) the file will not have the original look. If you select Curves, the file will import in as the original, but the text will not be editable.

HPGL

The PLT file format, developed by Hewlett Packard is vector-based. It is used in programs, such as AutoCAD, for printing drawings on plotters. Other Corel applications can interpret a SUBSET of the HPGL and HPGL/2 command set. A scaling factor of 1016 plotter units = 1 inch is used.

Exporting a HPGL/PLT file

Only the outlines of objects are exported to the PLT file format.

Dotted lines, dashed lines, and arrowheads are mapped to standard line types of the PLT file format.

Bézier curves are converted to line segments.

Outline thickness and calligraphic settings are lost.

Outline colors are limited to eight: black, blue, red, green, magenta, yellow, cyan, and brown.

AI

While CorelDRAW can import Adobe Illustrator files, it is limited to older versions. If you are getting AI files from a customer, ask them to try the version 7 format when they save the file. And often, the AI user will save the file with the EPS extension. You may not be able to import these files. Try importing these EPS files as AI file. Also, carefully check these files if you are using a vector output on your laser. Often you will have additional layers of the same data, causing the laser to cut twice.

WMF

A Windows metafile is a vector format file that can be used by most versions of Windows. Currently, it is the format that many HP scanners use when they convert a scanned bitmap to a vector or Scalable Image. The WMF format does not support some fills and effects that CorelDRAW can.
CGM

Corel applications support all versions of compatible American National Standards Institute (ANSI) Computer Graphics Metafile (CGM) file formats. The CGM export filter supports radial and linear fountain fills but not square or conical ones.

Bitmapped Files

CorelDRAW is a vector based drawing program. But it can import and manipulate bitmap files.

It's a good idea to remember that if a customer sends you a CDR file, it may contain either a vector or a bitmap image, or both. If you are not sure, click on the image with the Pick Tool and note the description on the Status Bar. If it is grouped, click on Ungroup.

TIFF

TIFF (Tag Image File Format) is the most common and desirable format for exchanging raster graphics (bitmap) images between applications programs, including those used for scanner images. A TIFF file can be identified as a file with a "tiff" or "tif" file name suffix. TIFF files are commonly used in desktop publishing, faxing, 3-D applications, and medical imaging applications.

BMP Files

You can import BMP files conforming to the Windows and OS/2 BMP specification.

BMP files may be black & white, 16 colors, grayscale, Paletted, or RGB color (24-bit), and will print accordingly, depending on your printer.

JPG

If you own a digital camera, you are most likely using the JPEG format. The JPG and GIF images are the most desirable for web graphics. The JPG image Shrinks the large file size of your graphic files, and optimizes pictures for faster loading from the Web and for sending via email. Most of the JPG images you get are those that are saved from web graphics. And usually the web designer saves the JPG image in 72 or 96 DPI which is usually not suitable for laser work. If you do have to use a JPG, it's better than nothing – but just barely.

GIF

The GIF (Graphics Interchange Format) is one of the two most common file formats for graphic images on the World Wide Web. While they are slightly better than JPEG, they are not the first choice of laser owners.

Other Importing Tips

If you are in the Artistic or Paragraph text mode, and you try to importing a graphics file such as a PLT or other CAD program, CorelDRAW will interpret it as a text file and bring in the CAD code. Depending on the file size, you may get many, many pages of plotter commands, and often it will crash your computer.

Paste vs. Paste – the Paste command creates a copy of the contents of the clipboard. It's used most often for duplicating objects within a program. For special applications where you want to copy data between programs, you can copy as usual (CTRL+C or from the Edit menu). But you should select Edit | Paste Special when you go to paste in another application.

You can import multiple files if they are stored in the same folder. Click on a file you want to open, and then hold down the CTRL while clicking additional files. You can even open an entire folder's contents by clicking the first file and then holding the Shift while clicking the last file in the folder.
8.2 Exporting Files

The main purpose of exporting a file is to share the CorelDRAW layout with our customer for a proof, using it in another application in our shop or for graphics on our website. Let’s start with basics of exporting a file. **Click** on the icon on the Standard Toolbar, or go to **File | Export**.

Here are the basic options you will use:

**Save in:** The directory where you want to export the file.

**File name:** The name used for you file.

**Save as type:** The format that the file will be saved.

**Selected:** Used if you want to save only selected items on your Drawing Page.

**Web safe file names:** Filename is compatible with Internet standards.

**Do not show filter dialog:** I rarely check this box as I prefer to see the filter dialog.

Now let’s look at the most popular export formats used in the laser shop:

**PDF**

I use this format when I am sending a proof to a customer. This Adobe format is universal, and only needs the Acrobat Reader to view and print this file. The Reader can be downloaded from www.adobe.com at no charge. I also like to use this file when I want to share a file over the Internet, and do not want it edited, such as an invoice or other proprietary document.

The options you pick when exporting depend how you want to use the file. If you use JPG compression, the printing output is not that good, but the file size is better, especially if you intend to send the file as an email attachment. If it is going to be printed, use the CMYK or Grayscale models. Also, embed the fonts so the printed file will be as you created it. And using the RGB mode will have a better output on the screen.
HPGL (PLT)

When I first bought CorelDRAW 3, I only used it to drop in to transfer my DesignCAD files through CorelDRAW and export them to the HPGL format for use on my engraver. The HPGL format has a PLT extension, thus the name of the PLT format. When exporting, you will get a HPGL Export dialog that has much technical data about pens and pages. This was the format that the CAD guys used to print out to their early plotters. The colors could be set to the pens in their plotter.

![HPGL Export Dialog]

JPG

There are only two uses for this file; web graphics and for emailing. The problem with this format is that data gets omitted each time the file is saved. If you continue to Open and Save, the quality of the file will continue to degrade.

Other Formats

While CorelDRAW is one of the top software programs for exporting, the file type depends on the application you want it to be used in. If you find an application that you need to share your CorelDRAW file, look in the Export dialog for your many choices.

8.3 Saving Files

Save

Typically, while working with an existing document, you save the file by clicking the Save button on the Standard Toolbar, choosing File | Save or CTRL+S. The file is automatically saved without opening any dialogs.

Save As

But for saving a CorelDraw document for the first time, you will get the Save Drawing dialog when you tried to save. You will also get the same Save Drawing dialog when you use got to File | Save As menu option.
Although using the Save As option may seem similar to using the Export command, the two are very different. It may be more advantageous to choose one over the other. **Save As** is the best technique when saving native CorelDRAW files, while exporting is best for saving your document or selected objects that will be used in non CorelDRAW programs.

There are several options that you have for saving your CorelDRAW document:

- **Save In** the location where the actual file will be saved.
- **Filename** the actual filename used for the saved file.
- **Save as type** the file format to which it will be saved. The default is CDR, the native CorelDRAW format.
- **Sort Type** options include Default, Extension, Description, Most recently used and vector.
- **Keywords** words that are used in the index of the Scrapbook Search command and in ROMCat.
- **Notes** memo area for keeping notes to remind you or share with others.
- **Version** the default if Version 12, however you can also save versions including 7 thru 11 when sharing with other users. Note Version 8 Bidi is Hebrew and Arabic.
- **Thumbnail** determines the size of the thumbnail. I always use the default. *The Thumbnail includes only the images on the first page of multiple documents.*
- **Selected Only** this option becomes visible only if objects are currently selected in your document before the SAVE or SAVE AS command is selected. It enables you save only specific object selections.
- **Web Safe Filenames** makes the filename compatible across the Internet by placing underscores in place of spaces in the filename.
- **Embed fonts Using TrueDoc** use this option when the files will be share with computers that may not have the same True Type fonts as your computer. When the file is opened on another computer, the job can be printed, edited and saved with the embedded font. However, the font only exists within that job, and is not in the Windows system fonts.
- **Save With Embedded VBA Project if** parts of our document have been created using VBA scripts, this option becomes available. The VBA Scripts you have saved with your document may be viewed, copied, and used by whoever reopens the document.
8.4 Using File Backup Options

Backup files enable you to retrieve recent versions of your files should a mishap occur. To access CorelDRAW’s backup options, use **Tools | Options | Workspace | Save**

The following define the available backup options:

**Auto Backup** when selected, your document files are backed up at specified time intervals. The default time interval is 20 minutes, but can be set in a range from 1 to 120 minutes.

**Always Backup** to This option specifies the location of the backups to be saved. The default is your temporary folder. Remember that when you delete your Temp files, all of your backups are also deleted. Make sure you don’t need them. You can specify another location and delete when you prefer.

**Make Backup on Save** the default, Make Backup on Save option causes CorelDRAW to update the backup file to match your original document each time you use save your file. The backup files created are named `backup_of_filename.cdr`. 
CHAPTER 9

Increasing Laser Productivity through Artwork
9.1 Which Layout System Works Best for You?

Single Page vs. Multiples

Here’s another option you have when creating a layout for your laser. Depending on your application, there are two main methods a laser operator uses in setting the page size in CorelDRAW.

**Set Same Size Page in CorelDRAW and Print Driver**

Set Page Size in CorelDRAW the same as the size of the laser bed.

The method you will use depends on the application you use most often. You can also switch back and forth between the two methods, depending on your application or your mood.

Set Same Size Page in CorelDRAW as you actual plate

The first method is to set up the CorelDRAW page size to the same size as the item or plate size being engraved.

Then, in the print driver change the engraving field or page size to the current CorelDRAW page size. This method is most often used by operators which engrave only one plate at a time, or by those doing rubber stamps.

**Advantages**

- Much more efficient for doing rubber stamps. The Rubber Stamp mode automatically converts and fills the drawing without additional CorelDRAW functions.

**Disadvantages**

- Unable to convert quickly to multiples; CorelDRAW centers current text/logs to center of new page. And most of the time you have to add a box for spacing.
- Doesn’t take advantage of red-dot pointer.
Set Page Size in CorelDRAW the same as the size of the Laser Bed

The second, and my personal preference, is setting the CorelDRAW page size to the size of the laser bed. Then draw a rectangle the size of your plate, and transform (move) the rectangle to 0, 0. Not only does it allow placement of the plate anywhere on the laser bed, it takes advantage of the number one reason 95% of all laser owners should use a full page size – multiples.

Advantages

- Better use of time; less time of loading and unloading plates.
- Faster laser times - the motor has less starts and stops.
- Less wear on one side of machine.
- Ease of using irregular sized boards. Often boards vary as much as a ¼ of an inch. By using a center point for each outline of the plate, all the boards do not have to be exactly the same.
- Ease of placing odd shaped objects anywhere on the laser bed, especially those that will not fit in the upper left hand corner due to their irregular shape.
- Easily turn on rectangle (plate outline) in print driver and use for cut out of plate.

9.2 Creating A Multiples Layout

In this lesson, we will maximize our engraving output by creating a nametag. Then, with the Transformation Docker, we will duplicate or create an array. The laser will vector cut out the nametag after it raster’s the logo and lettering.

Creating a Nametag

I created a 3 x 1.5 nametag by first drawing a rectangle. I rounded the corners and added the logo and name.
Moving the Nametag to the Upper Left of the 16 x12 Layout

Use the Transformation Dock and align the nametag .10 from the top edge and .10 from the left edge. Moving the nametag away from the page edge also moves them away from the rulers on the laser bed. If you try to vector too close to the rulers, you will get flashback and burn the edges of the tags next to the ruler.

Duplicating the Nametag across the page

Use the Transform Docker to duplicate the nametags across the page.

Select the nametag with the Pick Tool, and bring up the Transformation Docker. Click on the Relative position and put 3.10 in the H position and 0 in the V position. The nametag was 3.0 wide and I wanted a space of .10 between each tag (to avoid burning).

Duplicating the Nametags Down the page

Use the Transform Docker to duplicate the nametags across the page.

Select the nametag with the Pick Tool, and bring up the Transformation Docker. Click on the Relative position and put 0 in the H position and 1.6 in the V position. The nametag was 1.5 tall and I wanted a space of .10 between each tag (to avoid burning). The multiples layout is shown below:
9.3 Maximizing the Layout for Productivity Examples

Speed Optimizing

It is advantageous to engrave an object in its longest direction because total engraving time will be reduced when the motion system has to make fewer stops and starts. If the engraving object is longer than it is tall as in Figure 10-5, rotating the graphic 90 degrees and placing the material in the laser system sideways can achieve a greater engraving speed.

Directional sign sample. Note the area between the “101” and the arrow. This is dead space.

If the artwork contains engraved objects of the same color with a great deal of space between them in the engraving direction (Figure 10-6), processing time can be longer since the laser must make long strokes to engrave both objects at the same time. To reduce engraving time in cases like these, use different colors for each of the objects but assign the same power setting to both colors. This will cause the laser to engrave one object at a time, skipping over all blank space, which in many cases will reduce engraving time. However, if the objects are relatively close together in the engraving direction as with ruler (Figure 10-7), then leave them the same color because it will be quicker to engrave them both at the same time. Experiment with these techniques to optimize the speed of engraving.

Picture Frame. Note that area of the picture is ‘dead space’.

Order of Vector Engraving In CorelDRAW
In object manager, the last object created is normally the first object vectored, unless the lasers print driver overrides this order. However, the color of the vector may also affect the order in which it is engraved.

Order of Engraving vector objects in CorelDRAW

**Line** follows direction of creation as shown in the example below. The starting point is noted by the larger node.

![Direction of Creation](image)

If the direction is wrong for the line, use mirror horizontal to change starting point.

**Circles** Starts at top (12 o’clock) and goes clockwise. Mirror and it goes counter clockwise. Mirror vertically and it starts at 6 o’clock and goes counter clockwise. Mirror vertically and horizontally, it starts at 6 o’clock and goes counter-clockwise.

Order of engraving vs. stacking order

Let’s look at the instrument panel example below. I have raised the material over the table to avoid flashback from the laser. I need to cut out the holes first, and then cut out the panel. If the panel is cut out first, it will fall down and will be out of focus when cutting out the individual holes.

![Instrument Panel](image)

On the laser driver I use, I have an option of letting the laser sort the order of vectors cutting or controlling it myself.

When the Sort option is turned ON in the Vector Optimizer of the laser print driver, the vector objects are cut first according to color, and second to placement on the engraving area. The Optimizer attempts to sort the order of the objects to avoid jumping around.

When I turn the Sort OFF in the optimizer, the vector cutting order is first based on the color, and second, the order the vectors are drawn. The last object in the stacking order (or the first object drawn in CorelDRAW) is the first object to be cut.

For this example, I turned the Sort OFF in the print driver, and made sure that the outline of the panel was at the top of the stacking order in the Object Manager Docker.
Other Productivity Notes:

Hidden Vector Lines in Artwork  Most laser drivers do not automatically filter out vector outlines that are overlapped by engraved objects such as fills. If there are filled objects with some hidden outlines underneath, the laser system will then engrave out the fill and cut the hidden outline on top of the fill. This is a common occurrence when using pre-drawn clipart designed for laser printers.

Overlapping Fills  If the artwork created has overlapping filled areas, the most laser drivers will automatically filter these fills to prevent the overlapped area from being engraved twice. This is similar to color separation in the printing industry. The entire filled area of the object on top will be engraved and only the visible part of the underlying filled area will be engraved. The final result is a what-you-see-is-what-you-get output. In this way the color white can be used as an effective drawing tool. Since the laser system will not engrave the color white (this is the background color), it can be used to block out the undesired engraving areas of filled regions and/or bitmaps. However, you cannot use a white fill to cover an outline, the outline will vector cut even though you cannot see it on screen.

Overlapping Outlines  The laser driver does not filter outlines that overlap each other.

Postscript (PS) Images  The laser system is not a postscript device. This means that postscript fills, postscript textures, and especially postscript fonts will not be able to print to the laser system. Sometimes using Adobe Type Manager (ATM) will allow some postscript fonts to print correctly but most of the time does not work properly.

Font Problems  If you are having any problems printing a font and you cannot figure out what is going on, select the font and “convert to curves” or “convert to paths” in your graphics software. This will convert the font into a bitmapped image and will print correctly to the laser system. Refer to your graphics software on how to convert fonts. However, postscript textures and postscript fills cannot be converted and will not print to the laser system.
CHAPTER 10

Tips, Tricks, and Extras
10.1 QR Codes

Popular in consumer advertising and packaging, Quick Response, or QR, codes give smartphone users quick access to a brand’s website which can offer additional product information. You can choose what information to include in the QR code, such as a URL, email address, phone numbers, SMS, Contact, Calendar event, or Geo Location.

What can QR codes do for you?

- Increase awareness for your design, brand, company or unique product
- Disseminate important information to a fan base or loyal customers
- Promote a special deal or other savings benefit
- Provide a wide-reaching way to share design tips, unveil a new illustration technique or showcase your portfolio
- Expand your content or message with a QR code to direct readers to additional information, content, designs and more

What are some examples of cool QR codes?

Take a look at some of these well-known brands and see their clever and powerful use of QR codes. Add any combination of creativity, color, style and flair to get your message recognized and scanned. With a little design savvy, CorelDRAW, and your imagination, the creative combinations are endless!
Creating a QR Code

To insert a QR code, click Object > Insert QR Code

In the Object Properties docker, you can choose from a list of options from the QR code type list box.

Once you have entered in a valid QR code [i.e. URL, Email, Etc] you can use the controls to customize the code.

The smaller squares within the QR code are called pixels. The larger squares in the corners, and the smaller squares with a border inside, are called markers.
Once you have finished customized your QR Code style you can save that style form so you can use it for other projects. Simply click on the style indicator, beside the QR code header, and clock on New Style From.

Visual effects in QR code can add an artistic look but may be considered errors by QR code readers. You can use the error correction settings, to minimize the possibility of errors when scanning the QR code. Higher correction levels duplicate more of the information, increasing the chance that it will be read.

After formatting the QR code, you can validate it to make sure that it can be read by QR code readers. To do so, simply click the Validate button in the Object Properties docker. Once it has been validated, you will see a pop-up message containing the QR code information.

Now that you have customized the QR code you can add it to a logo. Click: File > Import, and choose the file you want to insert. Place the logo in the center of the QR code.
nce the logo is placed, you will need to validate the QR code to make sure it can be read. If it does not validate correctly, it may be because there are too many of the pixels [in the logo] covering the QR code. In this case, try making the logo smaller and click validate again.

There is another method for validating QR codes that can be used to validate non-QR objects or QR codes that have not been created in CorelDraw. If it cannot be validated on the Object Properties docker it can be validated a different way. Go to Object > Validate Barcode.

Then draw the marquee around the bitmap object [or logo] to validate. Once validated you can copy the URL to your clipboard.
10.2 CorelDRAW for Adobe Illustrator Users

Adobe Illustrator and CorelDRAW have many similarities, which makes it easy to move from one graphics application to the other. Although they share most basic drawing capabilities, Adobe Illustrator and CorelDRAW are distinguished by some differences in both terminology and tools. Understanding these differences lets you make a quick transition to CorelDRAW.

**Comparing terminology**

The terms and concepts in Adobe Illustrator and CorelDRAW differ for some features. Adobe Illustrator terms are listed below with their CorelDRAW equivalents.

<table>
<thead>
<tr>
<th>Adobe Illustrator term</th>
<th>CorelDRAW term</th>
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</thead>
<tbody>
<tr>
<td>Actions/Scripts</td>
<td>Macros/Scripts</td>
</tr>
<tr>
<td>Anchor points</td>
<td>Nodes</td>
</tr>
<tr>
<td>Artwork</td>
<td>Drawing</td>
</tr>
<tr>
<td>Clipping mask</td>
<td>PowerClip</td>
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<tr>
<td>Direction points</td>
<td>Control handles</td>
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<td>Guides</td>
<td>Guidelines</td>
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<td>Smart guides</td>
<td>Dynamic guides</td>
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<tr>
<td>Gradient fill</td>
<td>Fountain fill</td>
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<tr>
<td>Live Color</td>
<td>Color styles, color harmonies</td>
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<tr>
<td>Outline view</td>
<td>Wireframe view</td>
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<tr>
<td>Panels</td>
<td>Dockers</td>
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<tr>
<td>Path</td>
<td>Curve</td>
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<tr>
<td>Placing files</td>
<td>Importing files</td>
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<tr>
<td>Rasterizing</td>
<td>Converting to a bitmap</td>
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<tr>
<td>Stroke</td>
<td>Outline</td>
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<tr>
<td>Swatches panel</td>
<td>Color palette</td>
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</tbody>
</table>
## Comparing tools

The following table lists Adobe Illustrator tools and the corresponding CorelDRAW tools. Many of the tools create objects slightly differently.

<table>
<thead>
<tr>
<th>Adobe Illustrator tool</th>
<th>CorelDRAW tool</th>
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<tbody>
<tr>
<td>Add Anchor Point tool</td>
<td>Shape tool</td>
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<tr>
<td>Area Type tool</td>
<td>Text tool</td>
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<td>Blend tool</td>
<td>Blend tool</td>
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<tr>
<td>Bloat tool</td>
<td>Envelope tool</td>
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<tr>
<td>Convert Anchor Point tool</td>
<td>Shape tool</td>
</tr>
<tr>
<td>Delete Anchor Point tool</td>
<td>See “To add or delete a curve” on page 102.</td>
</tr>
<tr>
<td>Direct Selection tool</td>
<td>See “To add or delete a curve” on page 102.</td>
</tr>
<tr>
<td>Drop Shadow tool</td>
<td>See “To select a node”</td>
</tr>
<tr>
<td>Gradient tool</td>
<td>Drop shadow tool</td>
</tr>
<tr>
<td>Line Segment tool</td>
<td>Interactive fill tool</td>
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<tr>
<td>Live Paint Bucket tool</td>
<td>See “Applying interactive fills” on page 278.</td>
</tr>
<tr>
<td>Live Trace command</td>
<td>Freehand tool</td>
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<td></td>
<td>Polyline tool</td>
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<td>Smart fill tool</td>
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<td>See “To apply a fill”</td>
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<td></td>
<td>Dimension tool</td>
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<td></td>
<td>See page 115.</td>
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<tr>
<td>Measure tool</td>
<td>Mesh tool</td>
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<td>Mesh tool</td>
<td>See “Applying mesh fills”</td>
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<td>Paintbrush tool</td>
<td>Artistic media tool</td>
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<td>See page 104.</td>
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<td></td>
<td>Brush tool</td>
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<td></td>
<td>See “Applying artistic media fills”</td>
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</tbody>
</table>
Pan tool
Path Type tool
Pathfinder effects
Pencil tool
Pucker tool
Reflect tool
Reshape tool
Rotate tool
Rounded Rectangle tool
Save For Microsoft Office command
Scale tool
Scissors tool
Selection tool
Shear tool
Star tool
Symbol Sprayer tool
Twirl tool
Type tool
Vertical Type tool
Warp tool
Wrinkle tool

Pan tool See "Text tool See "Object Shaping and "Welding and in Freehand tool on page 98.

Envelope tool
Mirror buttons. See Shape tool See page 142.

Pick tool See "Rectangle tool rounded, scalloped,

File Export for

Pick tool See "Knife tool See

Pick tool See "Pick tool See "

Star and Comp 128.

Sprayer tool
Distort tool

Text tool See "To add artistic text" on p.

Paragraph formatting

Asian text" on page 3i

Smudge tool See

Envelope tool. See "S 155.

Roughen tool S
CorelDraw Training

Back to the Basics and Beyond

Appendix
A.1 Other/Third Party Support

*Engravers Network Virtual Support*

The Engravers Network offers Virtual Support through the Internet. We can connect to your computer via the internet and help you with training, applications questions and other issues. Requirements: Internet connection to the computer running your laser, and a minimum of a DSL or Cable connection. Dial-up connections are not acceptable for Virtual Support. There is a charge of 39.95 per occurrence.

*CorelDRAW*

Corel Corporation  
[www.corel.com](http://www.corel.com)  
[www.designer.com](http://www.designer.com)  
Corel Draw Newsletters  
Corel Patches & Upgrades  

*DESIGNER.COM*

Corel’s User area for Articles & Tutorials, Clipart & Freebies, Design Resources, User Forums, and News & Information  

*Unleashed Productions, Inc*

[www.unleash.com](http://www.unleash.com)  
If you ever get a chance to go to Cave Creek, Arizona for Fosters’ Unleashed boot camp, not only will you learn just about everything you ever wanted to know about CorelDRAW, you’ll have a more fun than ever with all of the friendly people. But watch out for the snakes in his back yard!  
Foster D. Coburn III is co-author of six best-selling books on CorelDRAW with the latest being CorelDRAW 9: The Official Guide. He is also a Contributing Editor of Recognition Review and Engraver’s Journal along with being a contributor to numerous other magazines.

*Click N Learn*

Without a doubt, Scott Georgeson CorelDRAW training is my favorite when it comes to using interactive video. Lots of tips and tricks, specialized training, and a good overall website for the CorelDRAW user.  
Unit 1/1 Summerford Road  
Aberfoyle Park Adelaide  
South Australia 5159  
Ph + 61 08 8370 5082  
Ph + 61 08 8370 4582  
FAX + 61 08 8370 4087
http://www.clicknlearn.com
scott@clicknlearn.com

Tom Anzai

Training – Books & CD

Tom Anzai trains clients and presents seminars throughout North America for CorelDRAW, PHOTO-PAINT, and Ventura. If you've attended CorelWorld 98/99/00/01/02, then you've seen Tom and his magical laser pointer. If you're looking for a dynamic instructor, email Tom Anzai and he will provide training quotes and suggestions for your organization's learning process. And, yes, he will travel to do affordable and customized training at your site!

http://www.anzai.com/

Voicemail: 1-800-816-6339
Fax: (613) 724-3092
Mail: P.O. Box 23100, Ottawa, Ontario, Canada K2A 4E2

Fonts & Artwork

Hemera – 350,000 logos from former Corel employees for $19.95 (the big lime-green box)

http://www.sharkshock.com/fonts/fontsfoo.html
http://www.adobe.com/type/main.jhtml

Click ‘N Learn

Advertised as the “The Most Advanced Form of Learning”.

Personally, I’ve learned more from the lessons and tips from this website than all of the other websites together.

http://www.clicknlearn.com

Oberon Place

This site is mainly devoted to scripting and automation of Corel graphics applications - CorelDRAW and Corel PHOTO-PAINT. You will find tons of useful information on Corel SCRIPT and Visual Basic for those applications. Along with automation, there are generic Desktop publishing articles as well as tips and tricks for CorelDRAW and Corel PHOTO-PAINT.

http://www.oberonplace.com/index.htm

Books

CorelDRAW Design Workshop

Authors: J. Scott Hamlin & Barry Meyer  ISBN: 0-7821-1817-8

Absolutely my favorite for practical applications that can be used in creating artwork for the laser. Many, many clearly written step-by-step lessons using a variety of CorelDRAW functions. I found this book from a used book store on the internet.
Other Sources & Links

http://www.advancedartist.com/index.html

A.2 HPGL Plotter (PLT) Technical Notes

The HPGL/PLT format is widely used for the engraver. Here are additional technical notes when working with this file type.

Importing a PLT file

Corel programs support versions 1 and 2 of PLT file formats although some features of version 2 are not supported.

You can import images larger than the Corel program’s maximum page size by enabling the Scale option in the HPGL options dialog box, which lets you resize the imported image.

The curve resolution factor can be set to a value between 0.0 and 1.0 inch. The value can be very precise; up to eight decimal places are accepted. A setting of 0.0 results in the highest resolution, but it also greatly increases file size. A curve resolution of 0.004 inch is recommended.

The PLT file format does not contain color information. Instead, the various objects in a PLT file have certain pen numbers associated with them. When imported into a Corel program, each pen number is assigned a specific color. You can specify the color assigned to a particular pen, so that you can match the original colors of the graphic.

The Pen selection list contains 256 pens, although not all of the pens may be assigned. You can change the color assignments by choosing the pen and then choosing a new color for that pen from the Pen color list box. Choosing Custom colors brings up a color definition dialog box that allows you to define a custom color according to RGB values.

You can change the pen width assignments by choosing the pen and then choosing a new width for that pen from the Pen width list box.

You can change the pen velocity by choosing the pen and then choosing a new velocity for that pen from the Pen velocity list box. This is useful only for exporting PLT files.

You can set a defined pen to the Unused option. You can also reset the current Pen Library pen settings to the previously saved settings.

Corel programs support numerous dotted, dashed, and solid line types of the PLT file format. The pattern number of a line in a PLT file is translated to a line type pattern.

If the PLT file contains a font that is not on the user’s computer, the PANOSE font matching dialog box lets the user replace the font with an available one.

Exporting a PLT file

Only the outlines of objects are exported to the PLT file format.

Dotted lines, dashed lines, and arrowheads are mapped to standard line types of the PLT file format.

Bézier curves are converted to line segments.

Outline thickness and calligraphic settings are lost.

Outline colors are limited to eight: black, blue, red, green, magenta, yellow, cyan, and brown.