VisionPro

User Guide

CONTENTS

Chapter 1
The VisionPro Workspace   27

Chapter 2
Shape Manipulation 37

Chapter 3
Layout Tools 43

Chapter 4

Importing Images

Chapter 5

Editing Bitmap Images

Chapter 6
Rotary Engraving   81

Chapter 7
Laser Engraving   91

Chapter 8

Drafts and proofs

Appendix A

Hot Keys and Shortcuts

Appendix B

Feature Locator

Copyright Notice

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Welcome to VisionPro

VisionPro is Computer Aided Design (CAD) software for laser and rotary engraving systems. VisionPro provides leading edge technologies as an all-in-one package that designers can adapt to run their production shops efficiently. VisionPro includes tools that support a wide variety of applications, and development is ongoing to provide you with support for the latest technologies.

VisionPro provides simple, versatile tools that include designing with text, line art, and images (i.e., bitmaps). VisionPro also provides significant support for other design applications, so that unfinished or archived designs can be brought into VisionPro for pre-production work.

> **Note:** The available VisionPro features will vary according to the type of VisionPro package that has been purchased.

VISIONPRO HIGHLIGHTS

For both new and experienced users, the following sections highlight key features and functionality of VisionPro:

- Design Layout
- Text Layout
- Vector Shapes
- Image Manipulation
- Third-Party Compatibility
- Toolbars and Palettes
- Fills and Strokes

DESIGN LAYOUT

- □ **Selection Tools** - In addition to basic selection tools, objects can be selected according to their size, or select objects that are open paths. This provides an easy means of removing portions of an imported or scanned file that would otherwise be difficult to clean up.

- □ **Guides and Alignment** - Control placement and layout using an assortment of guides, alignment tools and hot keys.

- □ **Start Sequence** - Arrange a collection of shapes into a specific order that controls how they are processed (e.g., cutting, badges), and optionally align the shapes on-screen.

- □ **Measure Tools** - Quickly obtain the distance between two points, and use the measuring line to resize the entire job proportionally.

- □ **Job Schematics** - Add dimensions and notes that can be printed as part of a customer proof, and likewise be used as a guide when constructing the sign.

- □ **Array** - Create copies of a shape and arrange them horizontally, vertically, as a grid, or on an arc.

- □ **Nesting** - Rearrange shapes within the plate size to minimize wasted material.

- □ **InstantReplay, Storage Bin, Group Viewer** - View, adjust and reuse operations and attributes that have been applied to objects. For example, drag-and-drop a useful gradient onto a new shape (Fig. 1).

- □ **Stencils and Clipping** - Set mask effects, whereby the top-most object becomes a mask for the underlying objects within a selection.

- □ **Outlines, Inlines and Contour Objects** - Add outlines and inlines to shape contours, so that elements of the design have more "punch" or visibility.

- □ **Transformations** - Apply distortions and forming tools to vector shapes, such as adding a sense of perspective, or emulating a flag or cylindrical effect.

- □ **Fit Object to Path** - Automatically create copies of a smaller object and arrange them along the contour of a larger object.

- □ **Metamorphosis** - Generate multiple graduated copies of a shape, so as to create an even size and/or color transition between the start and end shape.

- □ **Shadows** - Add shadow effects to one-or-more shapes to create an impression of object depth, or the perception of distance (Fig. 2).

Fig. 1 - InstantReplay enables you to inspect object attributes and operations, which can be reused via drag-and-drop onto another object.

Fig. 2 - Choose the shadow type and use on-screen handles for the desired effect.
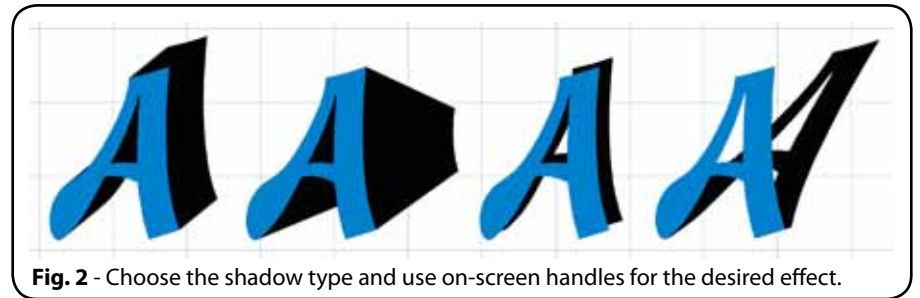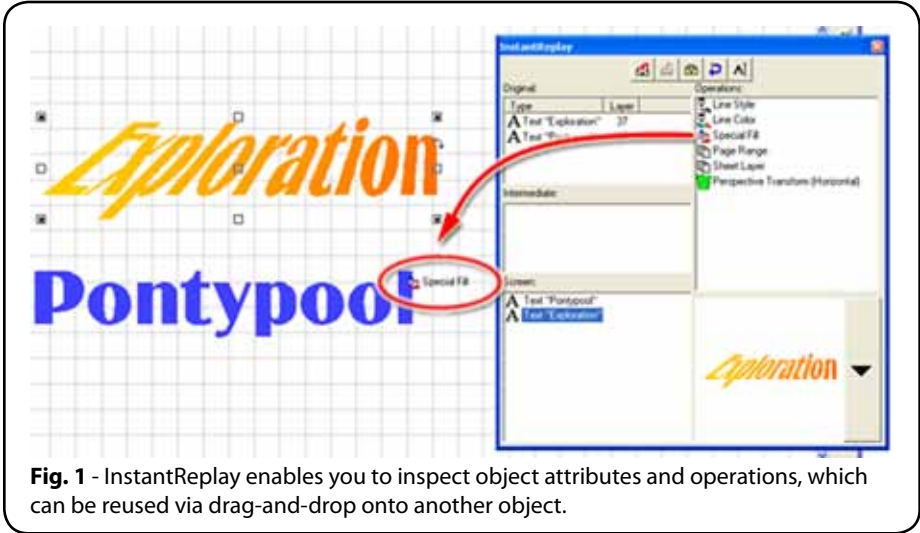
TEXT LAYOUT

- **Adjust Text Attributes** - Text can be manipulated using common word processor tools like text orientation, justification, slant, superscript, case control, line spacing, and bullets.

- **Text Compression** - When creating text frames, use flexible text compression rules to define how text should be adjusted with respect to the horizontal and vertical bounds, and set compression on line-by-line basis.

- **Character Width Compression** - Like text frame compression, characters can be set at a percentage of their original design width.

- **On-Screen Kerning** - Use the on-screen kerning tools to define the spacing between letters, words and lines (Fig. 3).

- **Font Sorting** - Use the Font Detective to group fonts by type or similar typeface features.

- **Typeface Preview** - When choosing a font, an re-sizable preview shows how the current text would appear (Fig. 4). Alternative, an entire typeface can be displayed, so that the character styles can be evaluated at-a-glance.

- **Character Picker** - For unusual characters that are difficult to reproduce with a standard keyboard arrangement, use the character picker to display and select a desired character.

- **Fit Text to Path** - Place text along both open and closed paths using easy positioning and alignments tools, which include adjusting text offset from the path.

- **Fit Text to Arc** - Wrap text to a curved path, space multiple lines to a circular arc, invert text for window applications, and define text frame compression rules.

- **Spell Check** - The spelling can be checked when editing a text object (i.e., before converting the text to vectors), and for all text objects that are on the workspace.

- **Braille Support** - Define Grade 1 and Grade 2 Braille for assorted applications, such as Braille punch, raised dot, and photographic etching techniques.

- **Style Painter** - After setting attributes (e.g., typeface, kerning, height) for one text object use the Style Painter to transfer those attributes to other text objects.

- **Automatic Text Frames** - When creating lists or tables of information (e.g., menus), use the Auto Layout feature to pre-position text frames, which can then be populated with data.

- **Making Lists Using On-Screen Kerning** - As an alternative to Auto Layout, use on-screen kerning to align lists or tables of information.

- **Badges** - Automatically create repeating designs (name badges, component labels, nameplates, etc.) by combining the base design with a plain text file (that contains the variable text of each badge). Serialization tools are likewise available to providing badge numbering (letters or numbers).

- **Font Customization** - For customers that need distinguishing character styles for
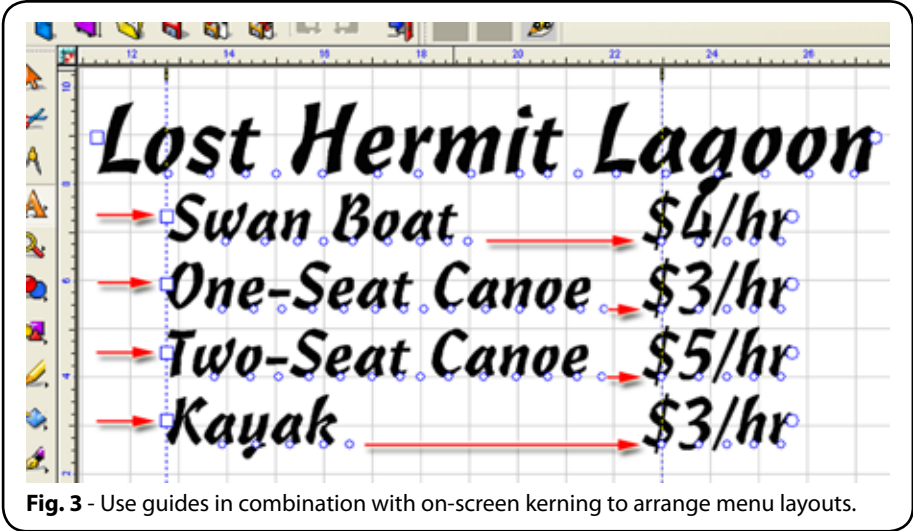
Fig. 3 - Use guides in combination with on-screen kerning to arrange menu layouts.
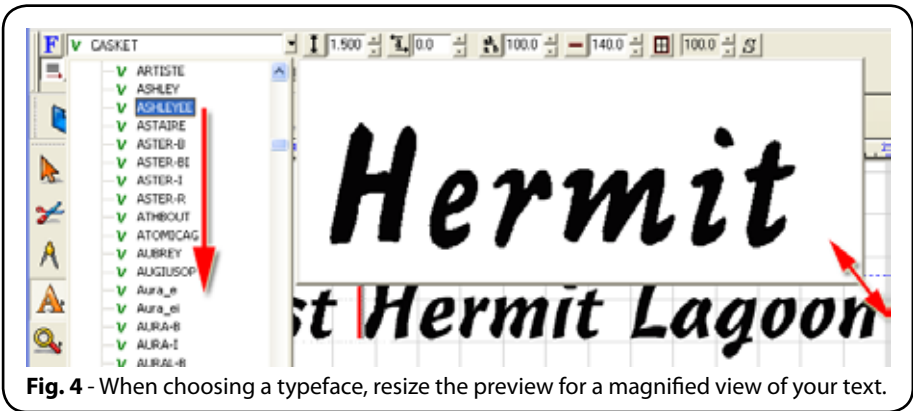
Fig. 4 - When choosing a typeface, resize the preview for a magnified view of your text.

their product identity, use the font editing tools to either customize an existing font, or design a new font from scratch.

- □ **Avoid Distortion of Stretched Text** - If text is simply scaled vertically or horizontally, then the serifs an other distinuishing marks can become distorted. Use the stretch tool (Fig. 5) as a means of preserving qualities of the original typeface.

VECTOR SHAPES

- □ **Basic Shape Types** - Choose from a collection of basic shapes that include circles, ellipses, rectangles, polygons, stars, arrows, fans, spirals, and monuments.
- □ **Ruler and Dial Shapes** - These are special shapes that automatically update tick marks and labels according to the size and positioning of the shape.
- □ **Barcode Shapes** - Standard barcodes can be automatically generated in both common and uncommon industry standards that conform to specified width and height limits.
- □ **Parametric Shape Functionality** - When editing basic and specialized shapes, context sensitive handles and SmartBar parameters are used to provide discrete control over the shape appearance.
- □ **Decorative Borders and Clip Art** - Use the decorative border tool or combine premade border clip art to enhance the effectiveness of your designs.
- □ **Compound Shapes** - Combine multiple overlapping shapes into an integrated object, and set the winding order for the desired effect.
- □ **Welded Shapes** - Bond overlapping shapes into entirely new combined objects (Fig. 6), and create bleeds that prevents gaps between adjacent layers of media.
- □ **Three Types of Node Editing** - Choose the mode of node editing (polygon, polyarc or freehand) that is most natural for your design style. Convert between each type as needed.
- □ **Node Editing Hotkeys** - Common node editing functions are available as hotkeys, such as joining, breaking and aligning nodes.
- □ **Segment Node Edit Modes** - When node editing, select two points of the shape and then force a corner, arc or line to be formed.
- □ **Round Corner Tools** - Rouding of both inside and outside corners, and rounding of individual corners.

Fig. 5 - Instead of scaling, use the Stretch tool to avoid distortion of the typeface characteristics.
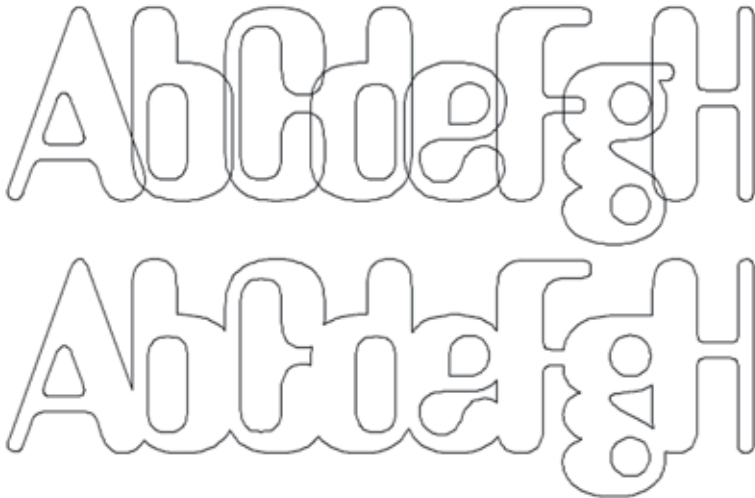
Fig. 6 - The weld tools have a variety of applications, often used to bond overlapping shapes, or to create traps between adjoining shapes, so as to avoid potential gaps that can occur due to exposure to the elements.

IMAGE MANIPULATION

- □ **CMYK Color Mode** - In addition to previous RGB, Grayscale, Indexed Color and Monochrome, VisionPro now supports CMYK colors and images.

- □ **Image Size** and **Super Size** - Two image resampling tools are available, which retain image quality when scaling the image in terms of pixel size or image resolution (dpi).

- □ **Contour Bitmaps** - Use vector artwork to create images composed of three-dimensional chiseled or beveled patterns (Fig. 7).

- □ **Pattern Fill Bitmaps** - Tile specially prepared bitmaps to form a cohesive pattern. These pattern fills can be applied to vector shapes.

- □ **See Through Bitmap Patterns** - Create a see-through bitmap pattern that can be tiled using the See Through Sign Wizard. Such patterns are used to simulate perforated media for window applications, so that viewers can see objects behind the design.

- □ **Fluid Mask Knockout Backgrounds** - Use intuitive paint-by-region tools to quickly and seamlessly remove the backgrounds from images. Please note that Fluid Mask is an optional add-on.

- □ **Image Color Adjustments** - Image tools include adjustments for color levels, contrast/brightness, hue/saturation, curve values (highlights/midtones/shadows), invert (i.e., create photographic negative), posterize, histo contrast, stretch intensity, histo equalize, balance colors, and swap colors.

- □ **Image Filters** - Image effects include sharpen tools, blur tools, introducing noise, despeckle, emboss, solarize, oilify, mosaic, spatial filter, halftone, intensity detect, and remove red eye.

- □ **Image Plug-in Effects** - In addition to plug-ins that you purchase from third-parties, VisionPro includes Richard Rosenman, Redfield, Harry, Alien Skin, and CADlink plug-ins.

- □ **Plug-in Effects for Vectors** - Plug-ins can be applied to vector artwork in VisionPro (Fig. 8). A Plug-ins Helper dialog is used to define how the effect should be applied.

- □ **Vectorizing Images into Line Art** - Artwork in vector form can often be easier to edit, and it can be scaled without introducing flaws. VisionPro provides both manual vectorizing tools, and a vectorizaton wizard that provides ease-of-use steps that include Super Size Image and Fluid Mask tools.

- □ **PhotoMachine Cut Images** - Using image curve values (highlights/midtones/shadows), create a cut pattern that simulates the image when viewed from a distance.

- □ **Centerline Tracing** - Create vector paths that trace the centerlines of the given artwork, which can then be used for etching or tracing effects.

Fig. 7 - Using the **Render Contour Bitmap** tool, line art and text can be converted into bitmaps that simulate the appearance of beveled edges.

Fig. 8 - VisionPro provides a means of using vector artwork in combination with plug-in effects. In this example, the resulting effect was incorporated into the background image, and the original text remained intact. Alternatively, vector artwork can be converted into image data.

THIRD-PARTY COMPATIBILITY

☐ **Importing** - VisionPro supports an exhaustive collection of file types that can be imported, so that legacy formats and design collections can be recovered and reused.

☐ **Exporting** - Likewise, VisionPro can export designs in commonly used bitmap-type formats and mixed format (i.e., vector and/or bitmap data), so that you can collaborate with other designers, and present designs for evaluation by your customers.

☐ **Desktop Scanner** - When used in conjuction with a desktop scanner, VisionPro can import either a bitmap image or vector artwork. In addition, a wizard interface provides a step-by-step process for tracing scanned images.

☐ **Digitizer Tablets** - Design work can be performed in VisionPro using a digitizing tablet. This is an option provided for designers that prefer this type of input device.

TOOLBARS AND PALETTES

☐ **Tools Toolbar** - This is the main VisionPro toolbar, typically docked at the left of the workspace. Most of the tools are organized in flyouts that can be undocked as floating toolbars for quick access (Fig. 9).

☐ **Custom Toolbars** - In addition to the Tools toolbar, you can create your own toolbars with your most frequently used tools. Toolbars can either be docked along the side of the workspace, or undocked as floating toolbars.

☐ **Shop Palette** - This main color palette is typically docked along the bottom of the workspace. By default, left-clicking will set the fill color of a selected shape, and right-clicking will set the stroke color.

☐ **CMYK Colors** - In addition to previously supported color spaces of RGB, HLS and LAB, colors can now be defined in either CMY or CMYK color spaces.

☐ **Default Fill and Stroke Colors** - When no object is selected, the default fill and stroke colors are set by left-clicking and right-clicking Shop Palette colors, respectively. Alternatively, the default colors can be fixed for new text and shapes.

☐ **Job Palette** - This palette (Fig. 10) lists the colors that are currently being used as fill or stroke colors on the workspace.

☐ **Modifier Keys** - The palettes have special key functions. For example, use [Shift + click] in the Job Palette to select all shapes of the given fill color.

☐ **Sheet Layer Palette** - Design elements can be organized onto separate layers, so that parts of the design can be edited in isolation from the design as a whole.

☐ **Sort Palette Colors** - Rearrange Shop Palette colors to suit your preferred method of viewing colors, such as the colors that are currently in use.

☐ **Custom Color Creator** - In addition to preconfigured color palettes included with VisionPro, you can define new colors and organize them into custom palettes.

☐ **Shop Palette Wizard** - Construct a custom Shop Palette. This step-by-step interface

Fig. 9 - For quick access, the **Tools** toolbar flyouts can be detached to become floating toolbars. Similarly, the custom toolbars along the top of the workspace can also be detached.

Fig. 10 - The Job Palette will show all the colors currently in use by workspace objects, so that they can be quickly located for new objects.
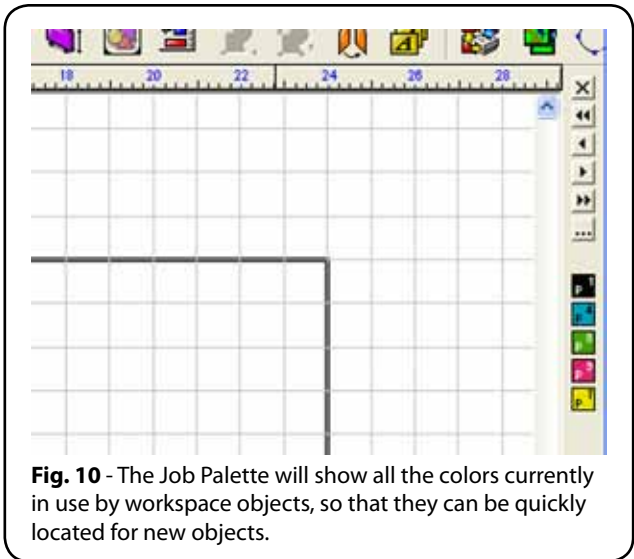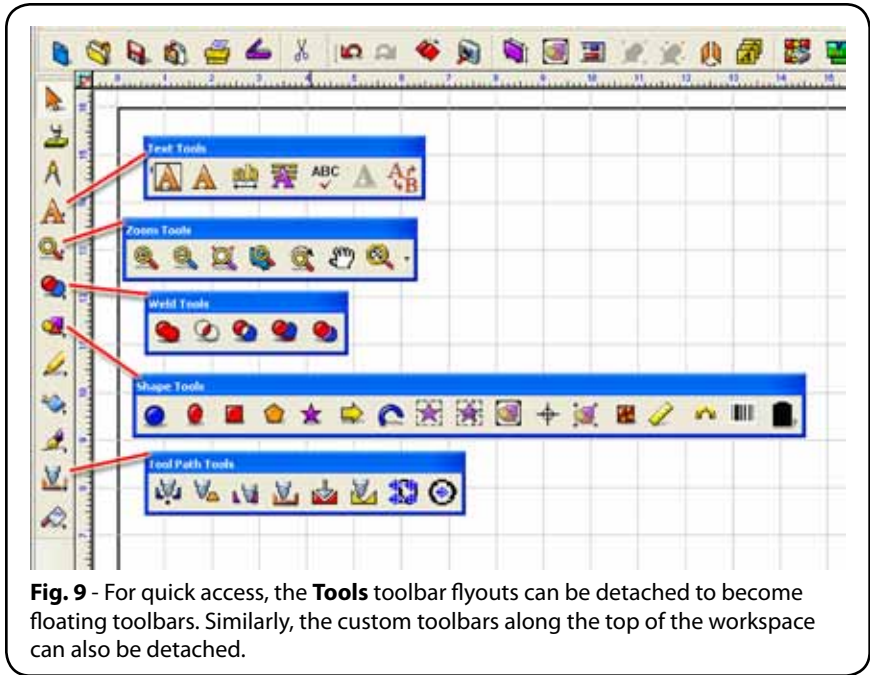
provides a convenient means of browsing and choosing colors from the palettes included with VisionPro.

FILLS AND STROKES

☐ **Pattern Fills** - Tile a small bitmap to fill the entire area of a vector shape (Fig. 11). Included with VisionPro are a collection of tile-friendly bitmaps, or use your own from third-parties.

☐ **Strokes with Locked Proportions** - By applying a stroke that has locked proportions, scaling the object will cause the stroke to become thicker or thinner according to the amount of scaling.

☐ **Strokes Above/Below the Shape** - Thick strokes are like an object that overlaps the main shape. To achieve a desired effect, a thick stroke can be set as being either above or below the principal shape.

☐ **Corner and End Caps Styles for Strokes** - Choose the appearance of how thick strokes are shaped and terminated.

Fig. 11 - The **Pattern Fills** tool tiles a bitmap pattern across a vector shape. Rather than create multiple copies of the bitmap (i.e., inflating the file size), the original bitmap remains linked from the hard drive.
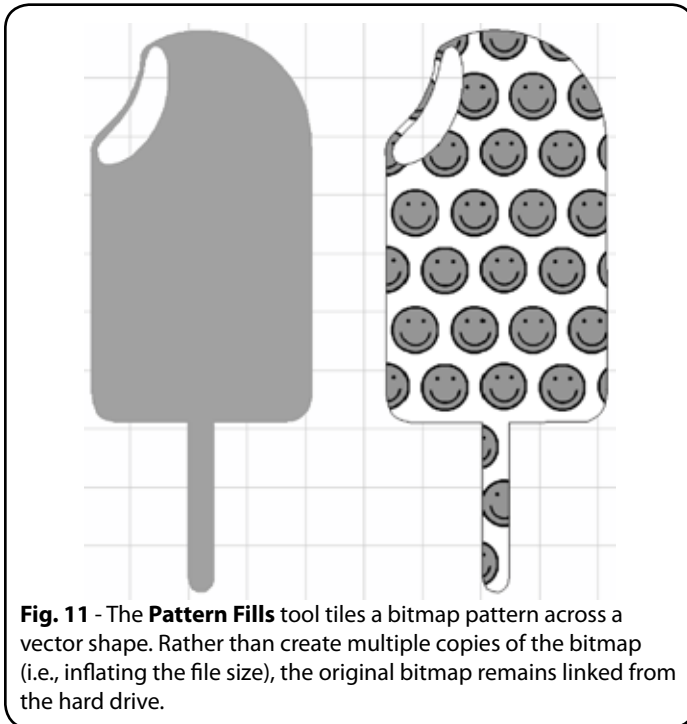
CHAPTER 1

THE VISIONPRO WORKSPACE

In This Section…

- □ Workspace customization
- □ Locations of menus, color palettes and toolbars
- □ Methods of creating shapes and text
- □ Selecting shapes and basic layout controls
- □ Setting fill and stroke colors
- □ Creating gradient fills and color blends

The center of the VisionPro environment is the workspace, which includes grid lines, horizontal and vertical rulers, and a rectangular outline to represent the plate size.

The **plate size** dimensions are usually set equal to the material that is being machined, such that the placement of art and text can be visualized. However, for some design work it may be more convenient to hide the plate size.

QUICK CUSTOMIZATION TIPS

Depending on the other software packages that you are familiar with, you may have certain preferences for how the workspace is set up. The following are some of the VisionPro workspace settings that may be of immediate use to you:

- □ **Options** menu >> **VisionPro Setup** >> **General Preferences** – Set the units of measurement, as well as the grid size
- □ **View** menu >> **Show Plate** – This is used to turn on the rectangular area that helps you visualize the size of the material that you are working on
- □ **View** menu >> **Show Fill** – This is used to show the fill color of line art shapes. Turn this off to see only the wireframe view of shapes
- □ **View** menu >> **Show Bitmap Outlines** – This is used to show only a wireframe rectangle of bitmap shapes
- □ **View** menu >> **Link Show Fill and Bitmap Outlines** – When Show Fill is toggled, also causes wire frames to be shown instead of bitmap image.
- □ **View** menu >> **Show Tool Diameter** – Illustrate the widths that tool paths require
- □ **View** menu >> **Show Grid** – This is used to display the grid lines
- □ **Options** menu >> **Grid** – This is where objects can be set to snap to the grid lines
- □ **Options** menu >> **Guides** – This is where guidelines can be created or removed

Menu, SmartBar, and Toolbars

Above the workspace is the menu bar, the SmartBar, and one-or-more toolbars.

The **menu bar** is typical of most Windows applications.

The **SmartBar** is a special, dynamic toolbar that displays controls that are specific to the current operation that is being edited.

The other **toolbars** are customizable. Buttons may be added or removed from these toolbars. New toolbars may also be created.

Color Palettes

Below the workspace are the color palettes.

The **Shop Palette** is the main color palette that displays colors that are available for use as either fill or stroke colors.

The **Sheet Layer Palette** provides the ability to arrange shapes on separate layers. Each layer can represent a different type of media (black vinyl, white vinyl, etc.).

Tools Toolbar

To the left of the workspace, the **Tools** toolbar contains the main shape creation and manipulation tools. For most of the **Tools** buttons, clicking will open additional toolbars.

Job Palette

To the right of the workspace, the **Job Palette** lists the process colors, foil colors, primers, and halftones that are currently in use on the workspace.

In addition to listing colors, the **Job Palette** can be used to perform global search-and-replace of colors, primers, halftones, etc.

Set all red shapes to a blue fill color

1. Suppose that you have several red shapes
2. In the Job Palette, click the ellipsis button and choose **Color View** from the context menu
3. Note that the red color appears in the Job Palette
4. From the Shop Palette, drag a blue color plate and drop it onto the red Job Palette color

REPLACE ALL SHADES OF A SPOT COLOR

1. Suppose that you have five shapes with different tints of a gold spot color, say 100%, 80%, 60%, 40%, and 20% tint

2. In the Job Palette, click the ellipsis button and choose **Foil View** from the context menu

3. Note that the Job Palette lists the different shades of gold as a single color plate

4. From the Shop Palette, drag a green spot color and drop it onto the gold Job Palette color

SHAPE CREATION

From the **Tools** toolbar, the **Shape Tools** (Fig. 12) are used to create circles, rectangles, polygons, stars, arrows, and fan shapes. These shapes are sometimes referred to as "parametric shapes" because they have extra editing handles for adjusting the shape parameters, such as number of sides, notched corners, rounding, etc.

From the **Tools** toolbar, the **Graphic Edit Tools** (Fig. 13) are used to edit scanned or imported vector artwork. Often, scanned artwork has extra nodes and rough edges that need to be "cleaned up" using these node editing tools. In addition, the **Graphic Edit Tools** can be used to draw freehand shapes and trace simple artwork.
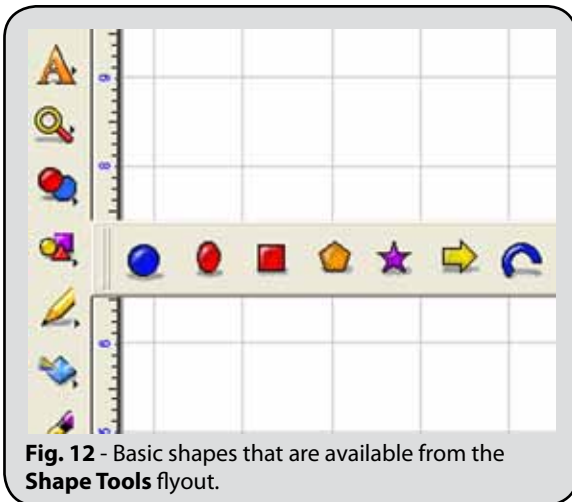
Fig. 12 - Basic shapes that are available from the **Shape Tools** flyout.

Fig. 13 - Node editing is available from the **Graphics Edit Tools** flyout.

Removing excess nodes when node editing

1. From the **Shape Tools** flyout, create an oval shape.

2. Select the oval and choose **Arrange** menu **>> Convert to Polygon**.

3. Double-click the oval to begin node editing.

4. Drag a marquee to select all of the nodes.

5. Press the ' u ' key to select only alternate nodes.

6. Press the **[DEL]** key.

From the **Tools** toolbar, the **Ginsu Knife Tools** (Fig. 14) are used to subdivide selected shapes. The **Open path** tool will leave the subdivided objects as open paths, whereas the **Close path** tool will create closed paths.

When a **Ginsu Knife** tool is chosen, click on the workspace to place one-or-more cutting nodes that intersect the selection. Then click **Apply** to subdivide the selection.
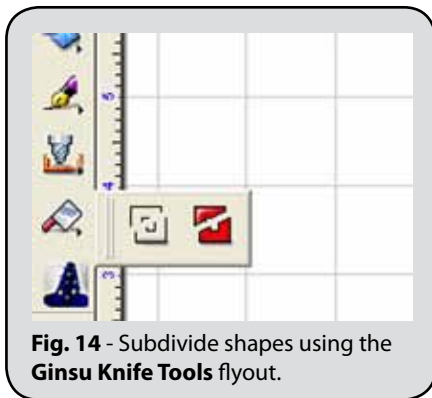
Fig. 14 - Subdivide shapes using the **Ginsu Knife Tools** flyout.
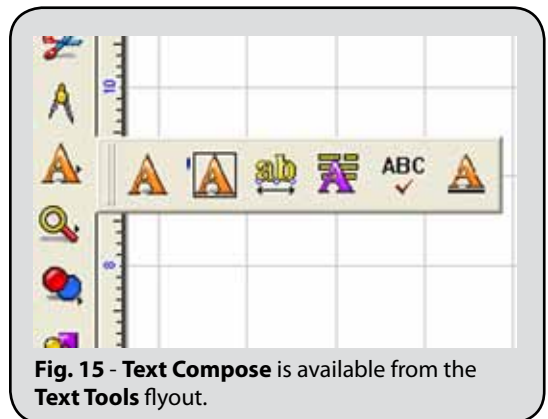
Fig. 15 - **Text Compose** is available from the **Text Tools** flyout.

Text Creation

From the **Text Tools** flyout (Fig. 15), the **Text Compose** tool is used to create text shapes. When creating text, the text frame determines the bounds of the text.

Methods of setting the text frame:

- **Click on workspace:** This will set an entry point for the text. As text is typed, the text frame will expand and contract to enclose the text.

- **Click along a shape contour:** Hold the cursor over the edge of a shape, such that the cursor turns black. Click and type text to fit text to the shape contour.

- **Click and drag marquee:** Dragging a marquee with the mouse will set the text frame bounds. As text is typed, the text frame will remain fixed, and the text will be

constrained according to the text frame properties.

- ☐ **Press [Shift] and click on workspace:** This will set the text frame equal in size to the plate size.
- ☐ **Frame Text Compose button:** This button will set the text frame equal to the plate size.

The **Spell Check** tool will check the spelling for all text shapes.

The **Text Underline** tool will create underlined text. Right click to set the underline properties.

From the **Transform** menu, the **Fit Text to Arc** command is used to fit the text to a circular contour.

From the **Transform** menu, the **Fit Text to Path** command is used to fit the text shape to the contour of another shape.

From the **Weld** Tools flyout (Fig. 16), the **Basic Weld** is used to bond script lettering, such that there is no overlap between adjacent characters.

Fig. 16 - For script lettering, kern the lettering and then use the **Basic Weld** tool.
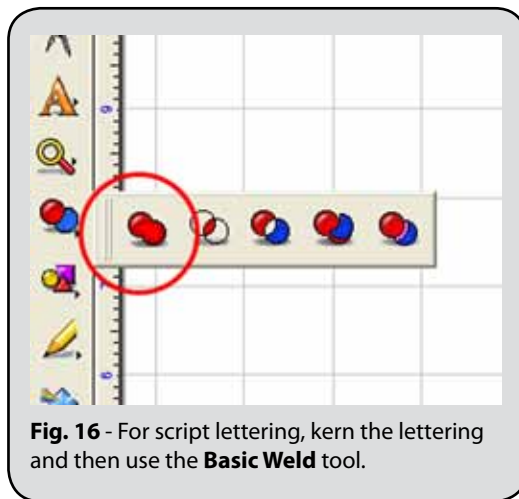
However, keep in mind that the result of the weld will no longer be a text shape, so make sure that the text is correct before doing the weld.

SELECTING SHAPES

Left-click a shape to select it. To add a shape to the current selection, press the **[Shift]** key.

To select multiple shapes, click-and-drag the cursor to form a marquee. All shapes that are within the marquee will be selected. Alternatively, press the **[Ctrl]** key when dragging the marquee, and all shapes that are overlapped by the marquee will be selected.

By default, a shape can be selected by clicking within its filled region. Alternatively, press the **[ALT]** key to only allow a shape to be selected by clicking along its contour. This is useful when you are attempting to select from among several clustered shapes. For example, when node editing a shape that overlaps other shapes, press the **[ALT]** key to prevent accidentally choosing a different shape.

VisionPro can be set to select shapes only when they are clicked along their contours. From the **Options** menu, choose **VisionPro Setup >> Selection Tool Settings**. If the "**Use Filled Region to Select**" option is unchecked, then shapes can only be selected by clicking along their contours.

The **Job Palette** may be used to select shapes according to their color.

SELECT ALL SHAPES OF A SPECIFIC COLOR OR TINT

1. In the Job Palette, click the ellipsis button and choose **Color View** from the context menu.
2. Press **[Shift]** and then left-click a color in the Job Palette.
3. All shapes of that color will be selected.

SELECT ALL SHAPES OF A SPECIFIC SPOT COLOR

1. In the Job Palette, click the ellipsis button and choose **Foil View** from the context menu.
2. Press **[Shift]** and then left-click a color in the Job Palette.
3. All shapes of that spot color will be selected, including tints of that color.

PROPERTIES OF SHAPES

When a shape is selected, nine editing nubs appear about the shape. These nubs are used to move, resize, scale, flip, and rotate the shape. The SmartBar displays the position, size, rotation, color information, and type of the shape.

Of the nine editing nubs, the SmartBar indicates the **Current Nub** with a red highlight, and the SmartBar **x** and **y** values represent the position of the Current Nub. When the SmartBar is used to resize a shape, the shape will be resized with respect to the Current Nub.

From the **View** menu, the **Show InstantReplay** item will activate the InstantReplay window, which is used to list the changes (properties and operations) that have been applied to a shape. Double-clicking will edit the property or operation without changing the order in

which it was applied. Pressing the **[Delete]** key will reverse changes to a selected property, and it will remove a selected operation.

Using the cursor keys, a shape is moved ("Nudged") one pixel at a time. Holding **[Shift]** will move the shape by five pixels.

When rotating a shape, press **[Ctrl]** to constrain rotation to the **Snap Angle**, which is set on the **General Preferences** dialog.

When dragging a shape, press **[Ctrl]** to constrain the move horizontally or vertically. In addition, pressing **[ALT]** will create a duplicate of the moved shape.

From the **Layout** menu, the **Size/Move** commands are also used to modify the shape properties, as follows:

LAYOUT MENU SIZE/MOVE COMMANDS

- □ **Size:** Set width and height of shape, or set scaling amount.
- □ **Move:** Place shape at an absolute position, or move the shape by a relative amount.
- □ **Slant:** Slope or skew the shape either horizontally or vertically.
- □ **Rotate:** Rotation can be with respect to a specific point on the workspace.
- □ **Mirror:** Flip the shape either horizontally or vertically.
- □ **Flip:** Similar to mirror, except that the line of reflection can be adjusted.
- □ **Clear Size/Move:** Remove all Size, Move, Slant, Rotate, Mirror, or Flip operations that have been applied to the shape.

ADDING FILLS AND STROKES

The Shop Palette contains the colors that can be applied to shapes as fill or stroke colors. In addition, the Job Palette will list all colors that are currently being used on the workspace.

For a selected shape, left-clicking a Shop Palette color will change the fill color, and right-clicking will change the stroke color. The Shop Palette also has a **Line/Fill** button, which is used to alternate this behavior.

When there is no selection, the SmartBar indicates the default fill and stroke colors that are applied to new shapes. Within the Shop Palette, a white hairline is drawn about the default fill color.

A newly created shape has no stroke, so its stroke color is not initially visible. From the **Stroke and Fill Tools** flyout, the **Line Style** tool is used to add a stroke.

At the far-left of the Shop Palette are the Invisible Color and Clear Color. All other colors have a letter designation (P, SF, or SC) to indicate their type.

GRADIENTS AND PATTERN FILLS

From the **Stroke and Fill Tools** flyout (Fig. 17), the **Gradient Fill** tool is used to create a process color gradient. When printed, this fill will be rendered using CMYK colorants.

From the **Stroke and Fill Tools** flyout, the **Pattern Fill** tool is used to tile a bitmap pattern on the shape.
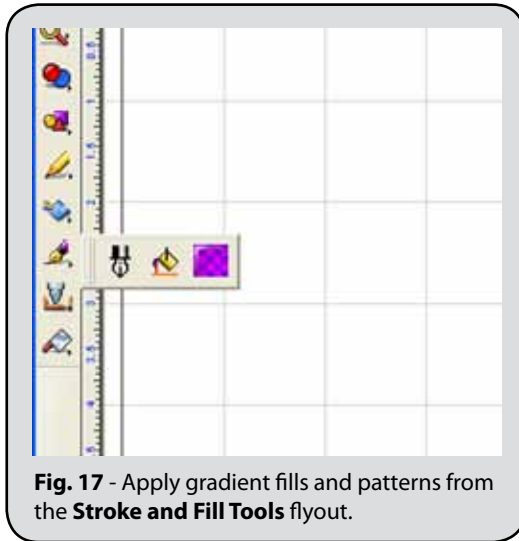
Fig. 17 - Apply gradient fills and patterns from the **Stroke and Fill Tools** flyout.

BLENDS USING METAMORPHOSIS

From the **Transform** menu, one of the functions of the **Metamorphosis** tool is to create a smooth gradient blend between two line art shapes. Depending on the metamorphosis setting, either new colors can be created, or existing Shop Palette colors will be used.

☐ **Target layer:** Use the currently selected Shop Palette color

☐ **Match layers:** Locate and use only colors that are currently in the Shop Palette

☐ **New layers:** Create and add new colors to Shop Palette

Metamorphosis creates the effect of a gradient blend by creating a large number of intermediate shapes. For example:

Create a metamorphosis color blend

1. Create some blue text with 1" height.
2. Create a red duplicate of the text with 5" height.
3. Select both text shapes and choose **Metamorphosis** from the **Transform** menu.
4. Set the **Mode** to **New Layers**, such that new color plates will be created.
5. Set a high **Count** value, such as 64.
6. Click **OK**, and the resulting series of line art shapes will create the effect of a gradient.

To create a blend that fades to "no color," then assign the **Invisible Color** to one of the shape fills.

VisionPro User Guide

CHAPTER 2

SHAPE MANIPULATION

In This Section…
- ☐ Arranging collections of shapes
- ☐ Applying special effects to shapes
- ☐ Clipping intersecting shapes
- ☐ Dissecting shapes with the Ginsu Knife
- ☐ Converting text shapes into line art

There are many tools available that allow you to modify or combine shapes.

From the **Arrange** menu, the **Order To Front** and **Order To Back** commands are used to control the display order in how shapes appear above each other. Similarly, shapes can be moved **Forward** and **Backward** in the display order.

From the **Layout** menu, the **Group** command is used to bind shapes into collections, which allows the shapes to be moved as a single unit. The **Ungroup** command is used to release the collection.

Double-clicking a group of shapes will open the **Group Viewer**, which lists the shapes that are part of that group. Selecting a shape within the **Group Viewer** will display all the attributes and operations that have been applied to that shape.

Ways to use the Group Viewer
1. Double-click an attribute for one of the shapes within the group. Changes to that attribute will only apply to that shape without changing the group.
2. Drag a color from the Shop Palette, and drop it onto the "Layer" attribute within the **Group Viewer**. The fill color of the shape will be changed.
3. Select a shape that is not part of the group, and use **InstantReplay** (see InstantReplay) to look at the operations that have been applied to that shape. Drag an operation from the **InstantReplay** window, and drop it into the list of operations displayed within the **Group Viewer**. The operation will be automatically re-applied to the shape that is selected within the **Group Viewer**.

From the **Tools** toolbar, the **Weld Tools** are used to fuse shapes together into a combined shape. Alternatively, the weld tools can clip overlapping shapes. In either case, the weld tools actually create new shapes.

From the **Arrange** menu, the **Clipping** command is used to clip overlapping shapes to the top-most shape. This is similar to a weld, except that the original shapes are not destroyed, and the **Clipping Clear** command can be used to reverse the effect.

From the **Tools** toolbar, the **Ginsu Knife** Tools are used to subdivide shapes. The subdivided shapes can either become closed contours, or they can be left as open paths.

From the **Arrange** menu, the **Text to Graphics** command is used to convert text shapes into line art. This is usually done in order to combine the text shapes with other line art.

OUTLINES AND INLINES

From the **Transform** menu, the **Outline** command is used to add the effect of contour lines either around a shape (Outline), or within the shape contour (Inline). The **Create Mask** option will weld the resulting outlines and/or inlines into a single shape.

From the **Transform** menu, the **Contour Object** command is similar to the **Outline** command. A positive **Offset** will create an outline, whereas a negative **Offset** will create an inline. Overlapping portions of the contour object will be automatically welded into a single shape.

Miter Limit

When applying an outline, the **Miter Limit** is a distance that is expressed as a percentage of the outline or inline thickness. For a sharp corner of the original shape, the resulting outline corner may be quite steep. If the **Clipped** button is enabled, then the outline corner will be clipped as per the **Miter Limit**. Only corners that are less than or equal to 90 degrees will be clipped.
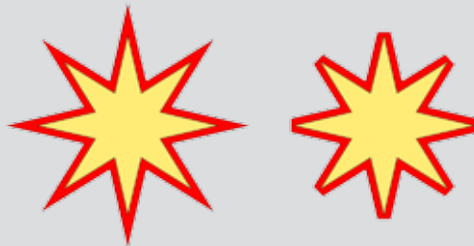
Fig. 18 - Two star shapes with outlines. The second star has an outline that has been clipped at 70%.

TRANSFORMATION

From the **Transform** menu, the **Transformation** command is used to apply special effects and distortions to shapes and/or images. Each transform comes with two versions: Vertical and Horizontal (Fig. 19).

> **Note:** The following three transformations are not available when editing images: **Perspective Curve Vertical**, and neither of the **Fit to Circle** transforms.
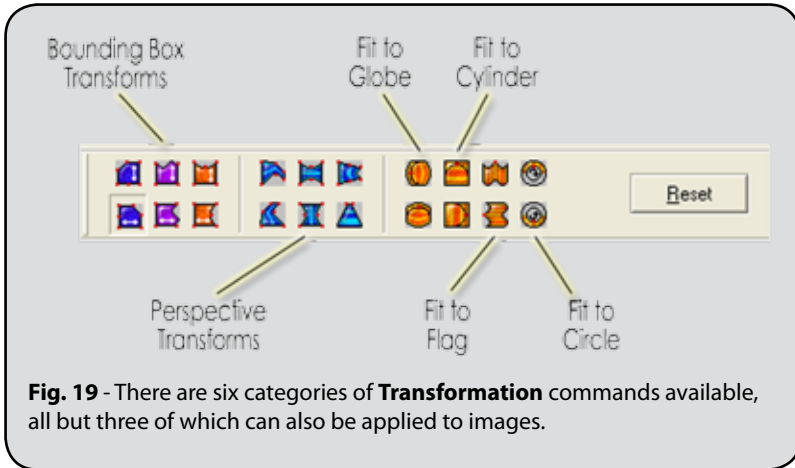
Fig. 19 - There are six categories of **Transformation** commands available, all but three of which can also be applied to images.

METAMORPHOSIS

From the **Transform** menu, the **Metamorphosis** command is used to blend two shapes together, and multiple intervening shapes with distinct gradients can be created.

SHADOW

From the **Transform** menu, the **Shadow** command is used to add background shapes that create the appearance of shadows (Fig. 20).

□ **Block Shadow:** The Block Shadow is used to give shapes the perception of depth.

□ **Perspective Shadow:** The Perspective Shadow is used to give shapes the perception of distance.

□ **Drop Shadow:** The Drop Shadow is similar to the Block Shadow, though the perceived space between the original shapes and their shadows is not filled.

□ **Cast Shadow:** The Cast Shadow is used to create the perception of a light source, such that the shapes project a shadow as if onto a nearby surface.

Fig. 20 - The available **Shadow** styles are (a) Block Shadow, (b) Perspective Shadow, (c) Drop Shadow, and (d) Cast Shadow.
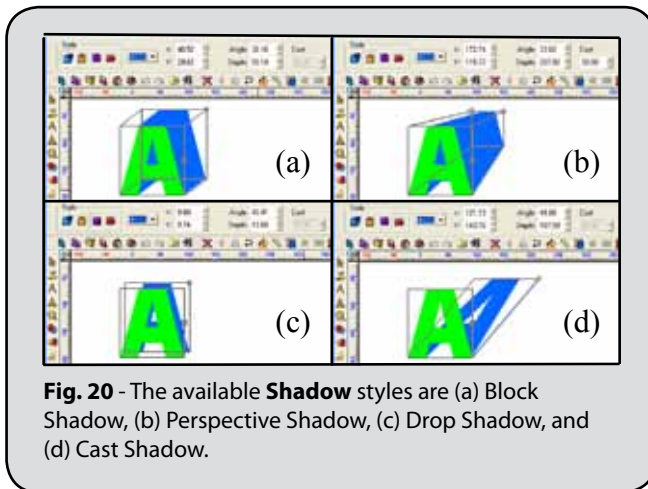
At the far-right of the **Shadow** SmartBar, the **Outline** checkbox (Fig. 21) is used to increase the thickness of the shadow effect. When creating a shadow outline, the following outline options may be used:

□ **Point:** Corners of the shadow outline are sharp

□ **Miter:** Corners of shadow outline are clipped (See Fig. 18 for the *Miter Limit* description under *Outlines and Inlines* for an example)

□ **Round:** Corners of the shadow outline are rounded and smooth

□ **Relief Shadow:** Create a gap (equal to the Thickness setting) between the shape and the shadow outline
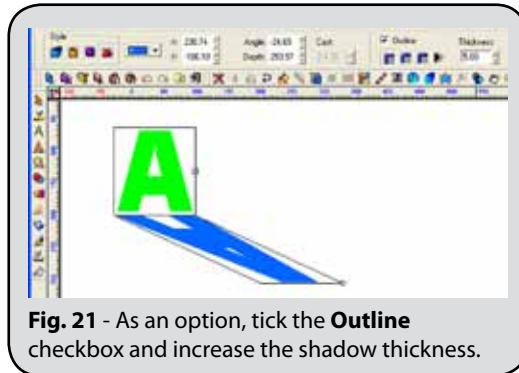
Fig. 21 - As an option, tick the **Outline** checkbox and increase the shadow thickness.

DECORATIVE BORDER

The **Decorative Border** tool is used to create a border shape that encloses either the plate size or selected shapes. The **Decorative Border** tool (Fig. 22) is available from both the **Shape Tools** flyout, and the **Layout** menu.

The **Clip Art Viewer** is also used to choose from a collection of preset decorative borders. Dozens of borders are available from the clip art sign blanks directory.
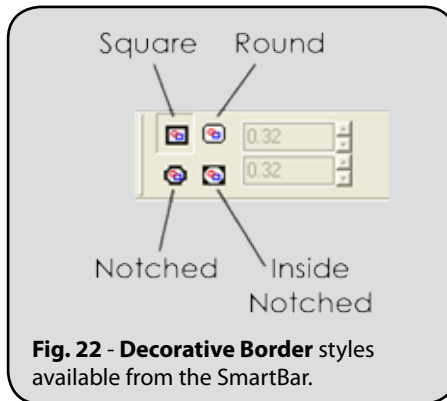
Fig. 22 - **Decorative Border** styles available from the SmartBar.

ROUND CORNERS

From the **Transform** menu, the **Round Corner** tool is used to create rounded corners for either inside or outside contours of vector shapes.

Most of the parametric shape tools include extra controls for rounding corners. However, the **Round Corner** tool is useful for scanned or imported vector shapes that would otherwise require node editing to create the rounded corners.

STENCILS

From the **Shape Tools** flyout, the **Stencil** tool (Fig. 23) is used to create the appearance of work that has been designed using a stencil pattern. Other shapes will be visible beneath the stencil shape.

A common stencil technique is to duplicate the shape, apply a different fill color, and then apply a stencil to the duplicate.

CREATING A STRIPED STENCIL PATTERN

1. Create a shape and apply a red fill color.
2. From the **Options** menu, choose **VisionPro Setup >> General Preferences**.
3. In the **General Preferences** dialog, the **Duplicates** section has **X Offset** and **Y Offset** settings. Set both these fields to zero.
4. Click **OK** to close the **General Preference** dialog.
5. Select the shape and choose **Edit** menu >> **Duplicate** (or use the **[Ctrl + D]** shortcut).
6. The duplicate has now been created precisely above the original. However, the duplicate is now the current selection.
7. With the duplicate still selected, apply a blue fill color.
8. From the **Shape Tools** flyout, apply a Stencil effect to the duplicate.
9. After the Stencil has been applied, the original shape will show through from below the duplicate.

Fig. 23 - Stencil styles available from the SmartBar.
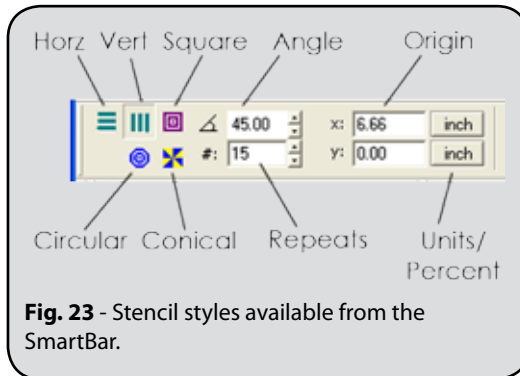
CHAPTER 3
LAYOUT TOOLS

In This Section…
- ☐ Creating guides for aligning design elements
- ☐ Aligning shapes to the grid, plate size, or other shapes
- ☐ Resetting the grid lines and ruler origin
- ☐ Creating arrays and sequences of shapes
- ☐ Nesting shapes to minimize wasted media
- ☐ Automated badge and name plate creation
- ☐ Serializing text data for badges

GUIDELINES

When dragging shapes, guidelines are used for precise alignment. A shape will "snap" to the location when it is dragged over a guideline.

- ☐ When there is <u>no selection</u>, right-clicking on the workspace will open the **Edit Guides** dialog.
- ☐ Under the **Options** menu, choosing **Guides >> Edit Guides** will open the **Edit Guides** dialog.
- ☐ Right-clicking a ruler will create a guide.
- ☐ For a selected shape, press **[Shift]** and right-click the shape nubs to create guides (not when editing a parametric shape).
- ☐ To add guides when node editing, press **[Shift]** and right-click the node.
- ☐ When dragging a guide, press **[Shift]** to constrain the guide to the nearest ruler increments.
- ☐ To lock guides in place, open the **Edit Guide** dialog and check the **Lock Guides** checkbox.
- ☐ To temporarily hide the guides, choose **Options menu >> Guides >> Use Guides**. The shortcut to toggle guides On/Off is **[ALT + W]**.
- ☐ To remove a guide, press **[Shift]** and right-click the guide (when there are no objects selected).

THE GRID AND ALIGN PALETTE

Press the **[Control]** key and right-click the workspace to display the **Align Palette**, which is used to align shapes with respect to the grid. Typically, these tools are applied to shape nubs, though they may also be used when node editing.

- □ **Set Origin:** Set the grid origin to the selected location.
- □ **Resize Grid:** Resize the grid increments based on the distance between the selected location and the grid origin.
- □ **Snap to Grid Intersection:** Move the shape, such that the nub is at the nearest grid intersection.
- □ **Snap Vertically:** Move the shape, such that the nub is at the nearest horizontal grid line.
- □ **Snap Horizontally:** Move the shape, such that the nub is at the nearest vertical grid line.

From the **Options** menu, the **Reset Origin** command will set the grid size according to the **General Preferences** setting. This is useful when the **Set Origin** or **Resize Grid** commands have been used.

ALIGNMENT HOT KEYS

The following a commonly used hot keys for aligning shapes. More hot keys are listed in *Appendix A*.

ALIGN SELECTED SHAPES QUICKLY

[ALT + 1]	Align shapes along **left** edge of bounds
[ALT + 2]	Center shapes **vertically**
[ALT + 3]	Align shapes along **right** edge of bounds
[ALT + 4]	Align shapes along **top** edge of bounds
[ALT + 5]	Center shapes **horizontally**
[ALT + 6]	Align shapes along **bottom** edge of bounds
[ALT + 7]	Center shapes both **horizontally and vertically**

ALIGN SHAPES TO THE PLATE SIZE

[ALT + Insert]	Align with top edge of plate size
[ALT + Home]	Center vertically along width of plate size
[ALT + Page Up]	Align with bottom of plate size
[ALT + Delete]	Align with left edge of plate size
[ALT + End]	Center horizontally along height of plate size
[ALT + Page Down]	Align with right edge of plate size

ALIGN SHAPES TO LAST SELECTED OBJECT

[L]	**Left** – Align with the left edge of the last object.
[R]	**Right** – Align with the right edge of the last object.
[T]	**Top** – Align with the top edge of the last object.
[B]	**Bottom** – Align with the bottom edge of the last object.
[E]	**Horizontally** – Center horizontally along height of last object.
[C]	**Vertically** – Center vertically along width of last object.

ALIGNMENT TOOL

From the **Layout** menu, choose **Arrange and Distribute** >> **Alignment**. The **Alignment** controls will appear in the SmartBar (Fig. 24).

> **Note:** The **Align** command will reapply whatever settings were last used with the **Alignment** tool.

☐ **Align to plate size:** Shapes are aligned relative to the plate size

☐ **Align to grid:** Shapes are aligned relative the grid lines

☐ **Align to last object:** For several selected shapes, align the shapes according to the last shape selected in the group

☐ **Align to selected:** For several selected shapes, align the shapes according to the bounding box that is around the selection
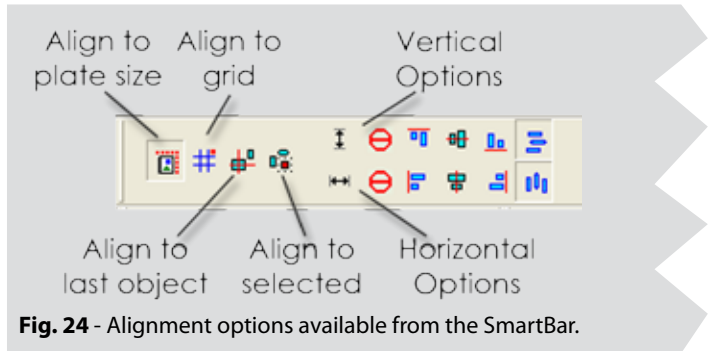
Fig. 24 - Alignment options available from the SmartBar.

When aligning text shapes, the following options are also available from the SmartBar (Fig. 25):

☐ **Treat Text Line as an Object:** Enabled when using equal vertical spacing. For a text paragraph that has multiple lines, this option will cause each line to be aligned separately.

☐ **Ignore Descenders:** Enabled when using equal horizontal spacing. Causes the text descenders to be ignored, such as for letters 'j', 'p', and 'q'. Alignment is performed with respect to the text baseline.

ARRAY

From the **Layout** menu, the **Array** command is used to arrange multiple copies into rows, columns, or arcs.

For shapes arranged on an arc, specify the arc radius and the range of angles over which the copies are spread.

When creating an array, the copies can be automatically rotated. The **Spin Each** option will rotate each subsequent copy by the **Spin Amount**. The **Total Spin** option will progressively rotate each copy, such that the final copy is rotated by the **Spin Amount**.

Fig. 25 - Additional alignment options.
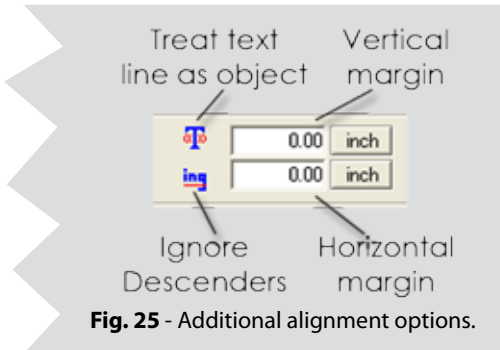
START SEQUENCE

From the **Layout** menu, the Start Sequence commands are available from the **Sequence** flyout: **Start Sequence**, **Start Sequence by Vector**, **Start Sequence by List**, and **Start Sequence by Traits**.

The **Start Sequence** command has two uses. The first usage is to arrange the database order of the shapes, which determines the order in which the shapes are output to a cutter. The second usage is to arrange shapes graphically on-screen.

CREATING A SEQUENCE

1. Select the first shape.
2. From the **Layout** menu, choose **Sequence**, and **Start Sequence**.
3. Click each subsequent shape, one-by-one. A connecting line is drawn as each shape is clicked.

4. Click on an empty portion of the workspace to finish editing.

The **Start Sequence by Vector** command is similar to the **Start Sequence** command, except that multiple shapes are added to the sequence by drawing a line.

CREATING A SEQUENCE BY VECTOR

1. Select the first shape.
2. From the **Layout** menu, choose **Start Sequence by Vector**.
3. Click and drag the cursor to form a line. All shapes that are intersected by this line will become part of the sequence.
4. Click on an empty portion of the workspace to finish editing.

Both the **Start Sequence** and **Start Sequence by Vector** commands can be used to arrange shapes. Repeat steps (1-3), and then right-click and drag the shapes across the workspace.

The **Start Sequence by List** command will open the **Sequence by List** dialog, which provides a visual list of all the shapes that are on the workspace. Shapes at the front of this list will appear above other shapes, and shapes at the back will appear below. The mouse can be used to drag shapes within this list. Alternatively, select a shape and use the **To Front**, **To Back**, **Forward One**, and **Back One** buttons. To use the **Reverse Order** button, at least two shapes must be selected.

☐ Holding the **[Shift]** key will align the shapes according to their lower-left bounding box corner.
☐ Holding the **[Control]** key will constrain the shapes either vertically or horizontally.

The **Start Sequence by Traits** command will open the **Sort** dialog, which will arrange the shapes according to their horizontal, vertical, or relative (**Nearest**) positions. Alternatively, the **Database** order arranges the shapes according to the order in which they were created.

NESTING

From the **Arrange** menu, the **Nesting** command (Fig. 26) is used to rearrange shapes into the minimum area necessary for printing or cutting the shapes. In this manner, the amount of wasted media required to output the shapes is minimized. Nesting may also be used to rearrange shapes across a non-rectangular area, such as leftover media.

To nest the individual letters of a sentence, the **Text to Graphics** command must be used first. Otherwise, the entire sentence will be nested without rearranging the individual letters.
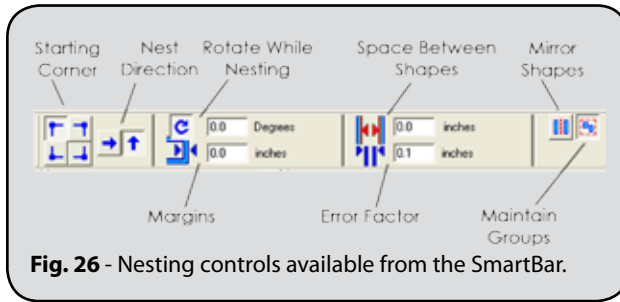
Fig. 26 - Nesting controls available from the SmartBar.

- □ **Specify Corners:** Choose the corner from which rearranged shapes will be placed. Nesting will begin in that corner and extend across the plate size.

- □ **Directions:** The direction in which shapes will be nested across the material.

- □ **Rotation:** Allow rotation of shapes by the specified maximum number of degrees. If 20 degrees, then shapes will be rotated in increments of 20 degrees to find the optimum placement.

- □ **Nesting Border:** The minimum distance to maintain from the material edge.

- □ **Clearance Between Objects:** The minimum distance between shapes.

- □ **Error Factor of Clearance:** For expert VisionPro users, a value that is used to adjust nesting based on the average shape sizes.

- □ **Allow Mirrored Parts:** Allow objects to be flipped horizontally or vertically during the nesting process.

- □ **Keep Groups Intact:** If this option is off, then grouped shapes will be separated during the nesting process.

ERROR FACTOR OF CLEARANCE

During the nesting process, approximations are made that are based partly on the magnitude of the shapes being nested. Setting a small Error Factor will produce more consistent spacing between the shapes, but at a cost of more processing time. The following chart provides suggested Error Factor values, which are qualified by the broad categories of Fine, Medium, and Coarse. The table is based on the average dimension (inches or millimeters) of the shapes being nested.

Shape Dimension	Fine	Medium	Coarse
0 < Size < 100	0.1	0.2	0.5
100 < Size < 1000	0.2	0.5	1.0
1000 < Size < 3000	0.5	1.0	2.0
Size > 3000	1.0	2.0	5.0

Badges

From the **Layout** menu, the **Badges** command is used to serialize text data. For example, badges are used to create name plates for doors, identification cards for employees, and adhesive labels for schematics.

From the **Badge Setup** dialog, the **Plate** fields indicate the **Width**, **Height**, and **Margins** that will be used when distributing the badges across the plate size. The **Spacing** fields, **Vertical** and **Horizontal**, indicate the amount of space to maintain between badges.

The **Page Preview** shows how the badges will be distributed across the plate size. Badges can be arranged either vertically (top-to-bottom), or horizontally (left-to-right).

The **Use Score Lines** option is used to insert score lines between each badge, so as to improve the ease of separating the badges after production. Use the **Color** picker to set the score line color.

Enabling the **Use Plate** option will limit each badge to a single plate size. If the **Use Plate** option is enabled, then the margins will be cleared to zero.

Where the generated badges require more area than the plate size, then the **Paging Tool** is used to browse the additional plate sizes. The **Paging Tool** is at the bottom-right corner of the workspace.

Setting Plate Size and Margins

- □ When routing or engraving, it is recommended that the Height and Width be set to the exact dimensions of the plate.
- □ When rendering a vinyl sign, set the Height and Width to match the page size of the plotter.
- □ When cutting or plotting, set the margins equal to the cuttable area of material, not necessarily the actual size.

The **Number of copies** indicates the total number of badges to be created. The **Total Number of Pages** indicates the number of plate sizes that are required to display the badges, and **Max copies per page** indicates the number of badges that can be displayed per plate size.

If the badge text has been applied with text compression, then the **Compress Equally Over Copies** option is available. Enabling this option will cause all badges to be evaluated to determine the maximum amount of text compression required (if any) to fit replacement text within the badge margins. For consistency, all badges will then be applied with an equal amount of text compression.

The **Replaceable Items / Text** list displays all text shapes that are available for substitution. The text of each item will correspond to the text that had been entered on the workspace.

Select the text objects that will undergo substitution. If a text shape is not selected within this list, then no substitution for that text will take place.

The **Replacement Data File** contains the text that will be substituted for each badge. The order of fields in the **Replacement Data File** should correspond to the order of text shapes on the VisionPro workspace. This will allow the **Badge Setup** dialog to substitute text in the correct order.

REPLACEMENT DATA FILE

Any text editor may be used to create the **Replacement Data File**. Within the text file, each line represents a set of data for one badge. If the badge has multiple fields, then each field must be separated by a delimiting character, such as a comma, a space, or a tab character. For example, tab-delimited data might appear as follows:

Text Field 1 [TAB] Text Field 2 [TAB] Text Field 3

Next to the **Browse** button, the drop-down list may be used to choose the delimiting character that is used in the text file.

If there are more badges being created than there are sets of data, then the extra badges will be filled with empty data.

BADGES – TEXT SUBSTITUTION

From the **Badge Setup** dialog, click **OK** to continue. If one-or-more text fields were selected within the **Replaceable Items / Text** list, then the **Text Substitution** dialog will open. Each column represents one of the items from the **Replaceable Items / Text** list. If a **Replacement Data File** had been specified, then the column entries will be filled using data from that file. To type text, select a cell and type within the **Edit Text** field.

Within the **Text Substitution** dialog, a column (or range of cells within a column) can be serialized. For example, click a column header to select all the cells within that column. The **Serialize** dialog will open, which is used to indicate the **Start** value for the series, the **Increment** value between each cell, and whether **Number** or **Character** values will be used.

The **Start** value may be either numeric, alphabetic, or alphanumeric. For alphabetic series, the ASCII character set is used. When badges have incremented through the entire ASCII character set, then subsequent badges will continue from the beginning of the set.

SERIALIZING DATA – SET BASE

When serializing badge data, the Start field is used as the base value, to which the Increment is added for each subsequent badge. By highlighting only part of the Start field data, the selection will be incremented, and unselected portions will remain constant. For example, suppose a series of booth labels must be created for a trade show.

As in the screen shot (Fig. 27), the value "Booth A" is typed. Using the mouse, only the 'A' was highlighted, and then the Set Base button was clicked. This indicates that the word "Booth" will remain constant, while the highlighted portion will be incremented for each badge.

Fig. 27 - Highlight the letter or number that will be incremented, and then click the **Set Base** button.

CHAPTER 4

IMPORTING IMAGES

In This Section…

- ☐ Importing and exporting files
- ☐ Publishing to PDF
- ☐ Browsing Clip-Art
- ☐ Scanning and tracing images
- ☐ Aligning scanned images to a baseline
- ☐ Configuring a Digitizer Tablet

IMPORTING FILES

VisionPro supports a wide range of commonly used file formats, such that you can work in the design environment that is most comfortable for you. The resulting design can then be brought into VisionPro for further output preparation.

The type of file format determines the type of data that can be contained within that file. For example, a bitmap (BMP) file contains image data, whereas a plotter file would contain vector data. Some file formats can contain both image and vector data.

From the **File** menu, choose **Import**. The **Import** dialog will open.

- ☐ When importing with the **Merge** option checked, the imported file will be added to the existing workspace objects.
- ☐ If the **Merge** option is unchecked, then the existing workspace objects will be deleted.
- ☐ For certain types of files, the **Customize** button will become active in order to specify certain parameters for the given file type. For example, if the **Files of type** drop-list is set to **Bitmap Files (*.bmp)**, then the foreground and background of monochrome bitmaps can be set.
- ☐ The **Filter** button is used to customize the file types that are listed within the **Files of type** drop-list.

After a file has been chosen for importing, one-or-more further import options dialogs will query how elements of the given file should be imported. The import options will vary according to the type of file being imported.

The VisionPro Help File contains more information about how to import the following file formats:

CADLINK FORMATS

- ☐ CADlink (CDL) Files
- ☐ CADlink Backup (BAK) Files

COMMON FORMATS FOR IMAGES

- ☐ Bitmap (BMP) Files
- ☐ JPEG Files
- ☐ TIFF Files
- ☐ Adobe PhotoShop (PSD) Files

COMMON FORMATS FOR LINE ART AND/OR IMAGES

- ☐ Adobe PDF Files
- ☐ Adobe Illustrator (AI) Files
- ☐ Adobe Encapsulated PostScript (EPS) Files
- ☐ AutoCAD (DXF) Files
- ☐ CorelDraw (CDR) Files

ALTERNATIVE AND LEGACY FORMATS

VisionPro supports a broad variety of alternative and legacy file formats, which will convert the file objects into native VisionPro objects. In this manner, designs from older third-party or discontinued software packages (or older versions of Windows) can be reused.

> **Note:** VisionPro <u>does not</u> include an import filter for the AutoCAD (DWG) file format. Instead, export from AutoCAD using the DXF format, and then use the "AutoCAD DXF" format when importing into VisionPro.
> VisionPro <u>does</u> include DWG import filters for GraphicCAD, GenericCAD and MonuCAD. When importing such DWG files into VisionPro, take care to indicate the correct import filter (e.g., GraphicCAD *.DWG).

EXPORTING FILES

> **Note:** For comments about common file types, see Importing Files in the Help File.

To send a design to another VisionPro user, it should be sufficient to save (**File** menu >> **Save**) the design in CDL format. Alternatively, there are four methods of exporting from VisionPro:

- ☐ **File** menu >> **Save Embedded File** – For designs that have linked images (e.g., using the Pattern Fills tool), save all such linked images as embedded images. The resulting size of the CDL file will be increased, thought it can now be sent to another designer without worrying about broken links.

- ☐ **File** menu >> **Export** – Use this method to save in file formats that store both images and cut paths (i.e., EPS files, AI files, etc.), or that support only cut paths (i.e., DXF files).

- ☐ **File** menu >> **Export Image** – Use this method to save in file formats that support only images (e.g., BMP files, JPEG files, TIFF files, etc.). The **Export Image** dialog will prompt for the **Color Depth** and **Resolution** at which the image will be exported.

- ☐ **File** menu >> **Publish to PDF** – Use this method to save the workspace as a PDF file that can be sent as a proof to the customer.

MINIMIZING OBJECT NODES WHEN EXPORTING

In the lower-left corner of the Export dialog is the **Customize** button, which can be clicked to open the **Parameter Specification** dialog. The available controls on this dialog vary according to the file type, though generally this dialog is used to specify the export error tolerance.

As a rule, the default error tolerance (0.001 or 1/1,000 of an inch) will work well with most files to reduce the number of exported object nodes. However, if the default values are insufficient, then a caution is urged against setting a high error tolerance.

CLIP-ART

From the **Layout** menu, choose the **Clip Art Viewer** to browse the clip-art that was installed from the CADlink Fonts & Sign Clip-Art CD. Either bitmap (.BMP) or CADlink Drawing files (.CDL) are valid formats that may be imported as clip art.

SCANNING ARTWORK

From the **File** menu, the **Acquire Image** command is used to scan images from an attached scanner. Before using this command, the scanner and scan software must already have been installed. For more information about using the scanner software, consult the scanner software documentation.

As a suggestion, set your scanning software to scale the artwork by a large amount, such as an increase of 1000% (one thousand percent). This will provide a more detailed image that is easier to work with in VisionPro.

If the scanned artwork is of low quality, then it may be desirable to use a low dpi when scanning (say 75 dpi). Otherwise, a high dpi will merely magnify any mistakes that are in the artwork.

Where there is more than one scanner, the **Select Source** command is used to choose between the available scanners.

The **Acquire** command will activate the scanner software in preparation for scanning the artwork that is on the scanner bed.

The **Acquire Vector** command is similar to the **Acquire** command, except that it will load the artwork into VisionPro as vector artwork.

The **Scan and Trace Wizard** provides a series of wizard steps that guide you through the process of bringing an image into VisionPro and then tracing that image into vector artwork.

> **Note:** See also **Vectorize Wizard** in the index.

When tracing scanned artwork, use a <u>low Tolerance</u> setting to avoid creating a large number of nodes.

After tracing is complete, the resulting shapes are grouped. To node edit these shapes, perform an **Ungroup** command, and then apply a **Make Path** operation. The resulting shape can then be node edited.

SETTING THE ALLOWABLE ERROR

Under the **Arrange** menu, the **Convert to Curves** command is used to convert line art into bézier curves. Once converted into béziers, the line art should scale more smoothly. When converting, set the **Allowable Error** to one-hundredth (1/100) of the smallest dimension of the shape.

1. Suppose the line art measures 8 by 14 inches.
2. Units do not matter, so just take the smaller value (8), and divide by 100.
3. Therefore, the error should be 0.08 .

ALIGN TO BASELINE

From the **Layout** menu, the **Align To Baseline** command is available from the **Arrange and Distribute** flyout.

For images that are scanned into VisionPro, it may be the case that the objects are slightly misaligned with the plate size. The **Align to Baseline** feature allows these objects to be aligned to either the horizontal or vertical plane. In addition, images can be aligned to a 45 degree angle, or a custom angle may be set.

Before performing the alignment, a line must be defined along the edge the image. To define this line, two points must be set. Clicking within the workspace will set the first point (the point of rotation), and clicking again will set the second point (the snap point). When a snap angle is applied, the line will be aligned to match the indicated angle, and the image will remain aligned with the line.

DIGITIZING TABLETS

From the **Edit** menu, the **Digitizing Setup…** command is used to configure a digitizing tablet.

Though no other intermediary software drivers are required for the tablet to be used with VisionPro, please ensure that the tablet is correctly connected to the computer, according to the manufacturer instructions.

The **Enable Digitizer** option is used to enable and disable the digitizer. In order to reduce the load on the system, it is recommended that the digitizer be disabled when not in use. This will prevent VisionPro from polling the tablet, and therefore free up system resources.

The **Track Pen** option is used to enable and disable the tracking of the digitizing pen. In order to reduce the load on the system, it is recommended that the pen be disabled when not in use.

The **Reset Baseline** option is used when starting a new drawing, or if the original angle and position of the tablet baseline need to be restored. The baseline of the tablet will be reset to match that of the material.

The **Set Baseline** option is used to align the baseline in VisionPro with that of the artwork. This avoids the requirement that the artwork be precisely aligned with the bottom of the tablet.

VisionPro User Guide

CHAPTER 5
EDITING BITMAP IMAGES

In This Section…
- ☐ Setting memory resources for Undo
- ☐ Types of images (Image Mode)
- ☐ Creating bitmap images from line art
- ☐ Applying three-dimensional chiseled or beveled patterns
- ☐ Resizing images using the Super Size tool
- ☐ Easy image clipping with Fluid Mask
- ☐ Applying color adjustments, filters and plug-ins
- ☐ Editing images with AccuScan
- ☐ Vectorizing images into line Art
- ☐ Photo manipulation using GIMP
- ☐ Using PhotoMachine to line-trace an image

SETTING UNDO RESOURCES

Before we get started with editing bitmap images, we should highlight the fact that large images can require quite a bit of your workstation memory and hard drive space. This is particularly significant with respect to performing **Undo** operations to backtrack over your bitmap editing. If the number of **Undo** steps (and their required memory) exceeds the allocated resources, then older **Undo** steps will be discarded.

If you want to have more resources available for your **Undo** operations, then from the VisionPro **Options** menu, choose **VisionPro Setup >> Undo Setup**.

SCRATCH DISK MEMORY

The total amount of **Undo Setup** memory is the sum of your workstation memory and its available hard drive space. Knowing this limit, you have the freedom to increase the maximum amount, while keeping in mind that you want to leave enough resources for other applications. As such, this is a personal judgement call, but you can generally increase the maximum a certain amount, and if you are finding that there aren't enough undo when working with your bitmaps, then increase the maximum amount again.

Types of Images (Image Mode)

There are five image types available for image editing: CMYK, RGB, Grayscale, Indexed Color, and Monochrome. To change the type of bitmap in VisionPro, use the **Image** menu >> **Mode** flyout.

- ☐ The CMYK type is typical of subtractive color mixing (i.e., printed images). This mode is used where specific CMYK values are envisioned for a design, and it is desirable to avoid possible rounding differences that might occur when printing RGB images (i.e., converting RGB to CMYK when printing).

- ☐ Under Windows, the **RGB** type has the highest color depth, and as such is often referred to as a full-color bitmap, a 24-bit bitmap, or an image that has "millions of colors.

- ☐ Converting a bitmap to **Grayscale** will discard all the color information within the image. Converting to grayscale is a common activity when tracing an image into cut paths, or when preparing an image for laser engraving.

- ☐ To reduce file size, bitmaps are sometimes saved as **Indexed Color** bitmaps, which can appear more granular because the total number of colors are limited to either 256 or 16 colors. As such, indexed color bitmap are not commonly used with high-resolution images , unless a particular effect is desired.

- ☐ For **Monochrome** bitmaps, note that Windows defines a monochrome bitmap as a two-color image, where white is the default background color, and black is the default foreground color. However, these defaults can be modified via **Options** menu >> **VisionPro Setup** >> **Import Bitmap Setup**.

Rendering Bitmaps

From the **Transform** menu, the **Render to Bitmap** command is used to convert a shape into a rectangular bitmap.

When the bitmap is created, empty portions of the bitmap will be set to white. However, AccuScan can be used to make the white transparent.

Transparent Bitmap Background

1. Suppose that a bitmap has a white background that needs to be set as transparent.
2. Double-click the bitmap to enter **AccuScan** mode.
3. Above the **Palette** button, set the **Target Color** to white.
4. Press **[Ctrl]** and then left-click the **Target Color.**

From the **Transform** menu, the **Render Contour Bitmap** command uses process colors to create three-dimension chiseled or beveled patterns. The **Constant Slope** option will cause the chisel/bevel effect to reach its maximum height/depth at the same rate. For areas of

the bitmap that have a short distance between the edge and center, the bitmap will tend to plateau. The **Constant Height** option will cause the chisel/bevel effect to dip/peak along the centerline of the shape.

RESIZING IMAGES

On the VisionPro workspace, images are treated like objects that can be resized according to the job requirements. However, resizing will not change the image resolution. To increase the image resolution, either use the Image Size or Super Size Image commands.

IMAGE SIZE

From the **Image** menu, the **Image Size** command displays size and resolution parameters for the selected bitmap. The **Pixel Dimensions** refers to the on-screen image size listed in pixels. The **Resolution** is listed in pixels per inch (i.e. like dpi or dots per inch). The **Image Dimensions** are the actual size at which the image will be printed or cut, expressed in the current ruler units.

SUPER SIZE IMAGE

From the **Image** menu, the **Super Size Image** is similar to **Image Size**, except that more processing time is required to retain the detail quality of the original image.

1.   On the VisionPro workspace, scale the image to the desired print dimensions.
2.   From the **Image** menu, choose **Super Size Image**.
3.   Set the desired resolution quality of the image.
4.   Click **Apply**, and the **Zoom Engine** dialog will open.
     (If no change in resolution has been specified, then clicking Apply will be ignored.)
5.   Adjust the **Zoom Engine** controls to retain the desired quality, and then click **OK**.

FLUID MASK – EASY IMAGE CLIPPING

Note: Fluid Mask is an add-on feature that can be purchased for use with VisionPro.

Fluid Mask is an intuitive tool for knocking out the background of an image, such as a photo of a person standing before scenery. The process is very much like a paint-by-numbers coloring book, where you paint with a green brush (the Keep brush) to indicate the foreground, and paint with a red brush (the Delete brush) to indicate background.

Suppose that you have a customer photo, such as a JPEG image of their child that was taken using a digital camera (see Fig. 28). However, the background of the image is cluttered and needs to be clipped using Fluid Mask.

Fig. 28 - Using Fluid Mask: (a) the original image, (b) after Fluid Mask has identified common regions, and (c) the finished image with clipped background.
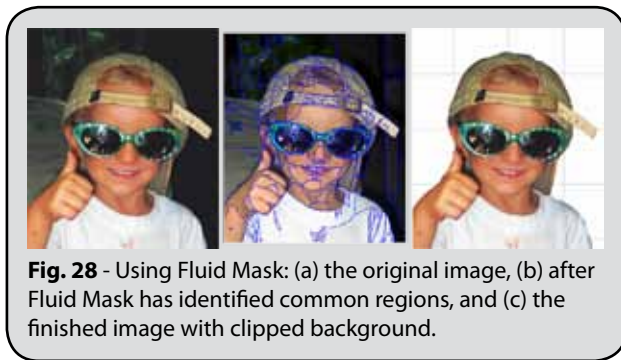
1. Import the image onto the VisionPro workspace, select it, and then choose **Image** menu >> **Fluid Mask**.

2. The Fluid Mask editing mode will launch, and the image will be analyzed in order to automatically identify similar regions of color and texture.

    Several seconds may be required, and the resulting regions will appear much like a paint-by-numbers coloring book.

3. Along the top of the Fluid Mask window are three tabs: **Source**, **Workspace**, and **Cut-out**. The **Workspace** tab should be active.

4. On the left-hand side is the **Tools** toolbar.

5. From the **Tools** toolbar, choose the **Delete Local Brush** tool (Fig. 29).

6. With this brush, move the cursor over part of the background image and then left-click.

    Notice that regions that were overlapped by the brush have now been filled with a red mask.

7. Continue to click other portions of the background, such that you are filling in the background with a red mask (i.e., this portion is being marked for deletion).

   In addition to clicking, you can also click-and-drag to paint over an area.

8. If necessary, remove the tick from the **Show Object Edges** checkbox. This will hide the regions, such that you can distinguish any portions of the background that were missed.

Fig. 29 - From the Fluid Mask **Tools** toolbar, use the **Delete Local Brush** tool for painting the red background mask.
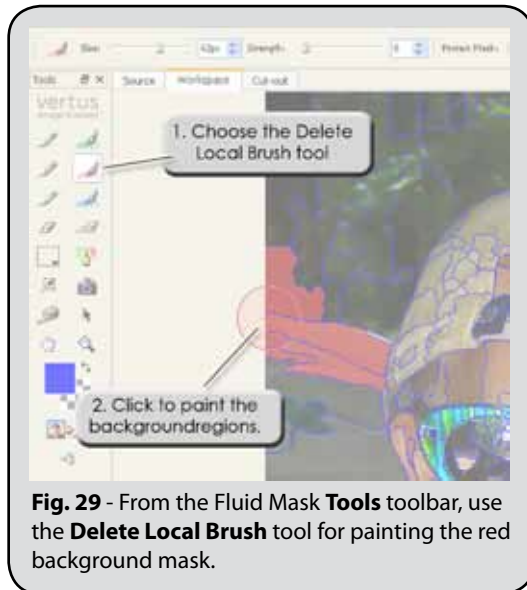
9. When you have finished painting the background red, choose **Image** menu >> **Auto-Fill Image**.

   The foreground of the image will be automatically painted green (i.e., the foreground will be kept).

   Also, a blue blending line will automatically indicate the transition region between red background and green foreground.

10. From the **Tools** toolbar, click the **Create Cut-Out** button.

11. From the **File** menu, choose **Save And Apply**.

12. The **Fluid Mask** window will close, and the view will return to VisionPro.

13. The **Prime** dialog will query whether a primer should be automatically applied to the image. For the sake of this example, choose **No** and click **Close**.

14. The resulting image with clipped image will be placed on the VisionPro workspace.

FLUID MASK COMMENTS

Green for foreground, Red for background

- □ In our example, we used a red brush to paint the background mask, and then we used **Image** menu >> **Auto-Fill Image** to automatically complete the foreground mask.

- □ Depending on the image, we may have found it easier to use a green brush to paint the foreground mask, and then use **Auto-Fill Image** to complete the background mask.

Local Brush and Exact Brush

- □ For both green and red, there is a **Local Brush** and an **Exact Brush**.

- □ Use the **Local Brush** to paint regions.

- □ Use the **Exact Brush** to paint only pixels (i.e., this is a fine editing tool).

Increase the brush size

- □ Use the square bracket keys '[' and ']' to change the brush size.

Increase the brush strength

- □ A brush with strength zero will affect only the regions that you touch with the brush.

- □ A strength greater than zero will cause adjacent regions to be painted (e.g., like a damp brush).

Use the Clean Tool

- □ After most of a background or foreground mask has been filled, choose the **Tools** toolbar >> **Clean Tool**, and then click the given mask. Any speckles within the mask will be automatically painted.

Hide the Region Edges

- □ Along the bottom of the Fluid Mask window is the Show Object Edges checkbox. Remove the tick to reveal missed areas.

Undo the Paint Steps

- □ If you have painted the wrong portion of the image, then use the **Edit** menu >> **Undo** command. The shortcut for Undo is **[Ctrl + z]**.

- □ Alternatively, from the **Tools** toolbar, use the **Erase Brush** (there are both Local and Exact versions).

Zoom

- □ Press the 'z' key to activate the zoom magnifying glass, then marquee-select the zoom region.

- □ To see the full size image, use the **[Ctrl + 0]** shortcut (control + zero).

- □ Use the '+' and '-' keys to zoom in and out.

IMAGE MENU - COLOR ADJUSTMENTS

From the **Image** menu, there are flyouts for both **Easy Color Adjustments**, and **Color Adjustments**. The **Easy Color Adjustments** are automated settings that can be used to quickly improve image quality. For greater control over the image, use the **Color Adjustments** flyout.

EASY COLOR ADJUSTMENT TOOLS:

Note: These tools can be applied multiple times to achieve the desired effect.

☐ **Cleanup Black** - Improve the contrast (i.e., appearance of details) within dark regions of the image.

☐ **Cleanup White** - Improve the contrast (i.e., appearance of details) within light regions of the image.

☐ **Make Lighter** - Reduce the depth of shadows within the image (e.g., increase the brightness).

☐ **Make Darker** - Tone down the highlight regions of the image (e.g., improve details in the light portions).

☐ **Increase Saturation** - Strengthen the distinct hues within the image.

☐ **Blur Image** - Soften details within the image.

☐ **Sharpen Image** - Increase the contrast of details within the image.

COLOR ADJUSTMENT TOOLS:

☐ **Levels** – Adjust the distribution of color intensities throughout the bitmap, either to correct a scanned image, or to create an artistic effect.

☐ **Contrast/Brightness…** – The **Contrast** setting is used to modify the perceived difference between light and dark areas of the bitmap. The **Brightness** setting is used to modify the overall intensity of the bitmap.

☐ **Hue/Saturation…** – Adjust the Hue, Saturation, and Lightness values of the bitmap.

☐ **Curves…** – Adjust the tonal range (shadows, midtones, and highlights) of the bitmap.

☐ **Invert** – Inverts the colors in the bitmap, making it like a photographic negative. This feature can also be used to invert the color of a grayscale image, making the black white and the white black.

☐ **Posterize…** – Limit the number of color levels per plane (red, green, and blue). For example, two levels means two of red, two of green, and two of blue.

☐ **Histo Contrast…** – Increases or decreases the contrast of the bitmap image, using a histogram to determine the median brightness. Once the median brightness has been determined, pixel values above the median are brightened, and pixel values below the median are darkened.

☐ **Stretch Intensity** – Increase the color contrast in the bitmap without changing the

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number of discrete intensity values (ordinary contrast adjustments can lose high- and low-end values).

- ☐ **Histo Equalize** – Linearizes the number of pixels in the bitmap, based on the specified color space (RGB, Grayscale, etc.). This can be used to bring out detail in dark areas of an image.

- ☐ **Balance Colors…** – Redistributes the RGB values of individual bitmap pixels. For each pixel, its red, green, and blue components are isolated, and the color sliders are then used to increase or decrease the percentage RGB values within each pixel. In this manner, a color cast can be removed from the bitmap, or a color tinge can be created for an artistic effect.

- ☐ **Swap Colors…** – Swap the color channels of the original bitmap. This feature is useful for obtaining artistic effects that would otherwise be difficult to achieve using the other Color Adjustment tools.

IMAGE MENU FILTERS

From the **Image** menu, the **Filters** flyout provides a selection of effects that can be applied to bitmap images.

SHARPEN FILTERS:

- ☐ **Sharpen** – Increase or decrease the sharpness of the bitmap.

- ☐ **Unsharp Mask** – Despite its name, this is actually a sharpening function because it increases the contrast between light and dark areas of the bitmap. Wherever there is a brightness transition between light and dark, the light area is made lighter, and the dark area is made darker, such that the transition becomes more distinct.

BLUR FILTERS:

- ☐ **Average** – Changes the color of each bitmap pixel to the average color of pixels within the surrounding pixels. This results in a blur effect.

- ☐ **Gaussian Blur** – Smooth or blur pixels with respect to their surrounding pixels. The **Radius** determines the surrounding area that is considered when blurring a pixel.

- ☐ **Motion Blur** – Blur the bitmap to create the illusion of movement within the image. Positive angles indicate a clockwise blur, and negative angles indicate a counter-clockwise blur.

- ☐ **Median Filter** – Changes the color of each bitmap pixel to the median color of pixels within the surrounding pixels.

Noise filters:

- **Add Noise** – Add random pixels to the bitmap. Adding noise can be an effective means of making an image appear older or dirtier, especially where the purpose is to distract the eye from imperfections in the original image.

- **Despeckle** – Removes speckles from the bitmap, such as those present in scanned images.

Stylize / Artistic filters:

- **Emboss** – Applies an emboss effect to the bitmap, letting you specify the depth and direction of the effect.

- **Solarize** – Creates an effect that mimics the accidental exposure of photographic film to light. This is done by inverting all color intensities that exceed the **Threshold** value.

- **Oilify** – Create an oil-painting effect. For each pixel, the **Amount** indicates the number of surrounding pixels that are considered when creating the effect.

- **Mosaic** – Create a mosaic effect by dividing the bitmap into tiles of the specified size, and then averaging the pixel colors within each tile.

- **Spatial Filter** – An assortment of artistic filters.

- **Halftone** – Converts a bitmap with any resolution to a halftoned bitmap. A halftoned bitmap is a 1-bit bitmap that has been dithered for black and white printing or display.

- **Intensity Detect** – Set all pixel color intensities to 255, or clear them to zero. If a pixel's intensity is between Low and High, then set the intensity to 255. Otherwise, clear the intensity to zero.

Remove Red Eye

- Removes the "red eye" effect that results from flash photography. For each pixel, only the red color component is evaluated.

Image Menu Plug-In Filters

Plug-ins are software modules that are used to create special effects for bitmaps. These modules may be obtained through either Adobe or third-party plug-in developers.

After plug-ins have been installed on your computer, go to VisionPro and use **Image** menu **>> Options >> Plug-In Paths** to indicate the hard drive location of the plug-ins. The plug-ins will then be available under the VisionPro **Image** menu.

> **Note:** Some plug-ins require that a foreground and background color be set. In this case, use the **Set Foreground Color** and **Set Background Color** commands.

The Plug-ins Helper Dialog

Whereas plug-ins are typically designed only for bitmaps, VisionPro can also apply plug-ins to line art, or to a combination of line art and bitmap objects (Fig. 30).

By using line art as the basis for your plug-in effect, the resulting effect can be clipped to the line art. In this way, the following advantages are obtained:

1. The "empty" portions of the plug-in bitmap are usually set to a white color, which are undesirable when arranging the bitmap with surrounding objects. Clipping to the original line art will hide the empty portions of the bitmap.

2. The bitmap that is produced by the plug-in will often have a jagged edge, which will look poor when scaled up to a large poster size. Clipping will "trim" the jagged edge, such that scaling is acceptable.

> **Note:** A good alternative to case (2) is to scale your original line art to the desired size before applying the plug-in effect. Line art shapes will scale without diminishing their details.
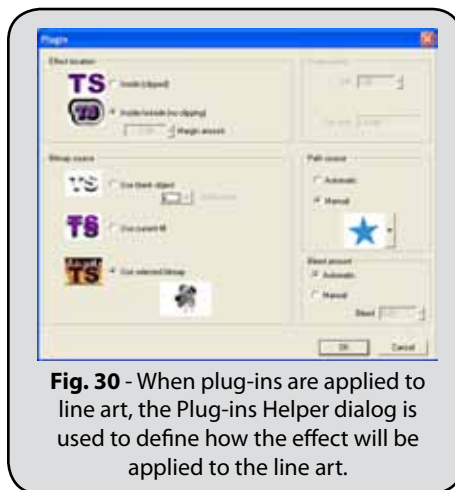

Fig. 30 - When plug-ins are applied to line art, the Plug-ins Helper dialog is used to define how the effect will be applied to the line art.

PLUG-INS: RICHARD ROSENMAN™ COLLECTION

Note: More about Richard Rosenman's work can be read about here: **www. richardrosenman.com/profile/biography**

VisionPro includes four plug-ins from Richard Rosenman. The plug-ins are available from the Image menu >> Richard Rosenman flyout. The available plug-ins are:

- **Diffuse Glow** – Produces an almost angelic glow.
- **Lens FX** – Produces an assortment of distortion effects, as would be possible using a camera lens.
- **Pinch** – Similar to using Lens FX to create a pinch effect, except there is greater control over the vertical and horizontal distortion.
- **Scanlines** – Creates horizontal or vertical lines that can suggest transitions or images viewed on a low-resolution video display.

PLUG-INS: REDFIELD™ COLLECTION

Note: More Redfield plug-ins are available through the Redfield web site: **www. redfieldplugins.com**

VisionPro includes five plug-ins from Redfield. The plug-ins are available from the **Image** menu >> **Redfield** flyout. The available plug-ins are:

- **Craquelure 3D** – Creates a variety of texture effects.
- **Jama 3D** – Creates corrugated and cellular patterns.
- **Lattice Composer** – Creates grids and weave patterns.
- **Seamless Workshop** – Creates seamless tiles.
- **Water Ripples** – Creates a variety of water ripples effects.

Plug-ins: Harry's Filters™

> **Note:** More of this type of plug-ins are available through the Plugin Site: **www.thepluginsite.com**

VisionPro includes sixty-nine (69) plug-ins that are available through a single dialog interface. From the **Image** menu, choose **The Plugin Site** >> **Harry's Filters**. The available plug-ins are:

Color

- □ **Add Color** – Adjust the RGB color channels within the image.
- □ **Cartoon Art** – Assign an off-tone pallor that suggests an artist's rendition.
- □ **Colorize** – Vary the image hues as if the image were based upon a monotone print.
- □ **Color Mood** – Introduce sharp color contrasts.
- □ **Color Wizard** – Like Color Mood, except with pastel color contrasts
- □ **Expose** – Create over- and under-exposure effects that are reminiscent of developed film.
- □ **Twilight Colors** – Sombre mood that suggests dim lighting (e.g., dawn or dusk).
- □ **Old Film** – Simulates the graininess of film that has begun to deteriorate due to age.
- □ **Inversity** – Stark hues that suggest the presence of overhead lighting.

Artistic

- □ **Atmospherizer** – Rotate the spectrum of colors as if the image were being viewed through a transparent color sheet of plastic film.
- □ **Blurry Painting** – Present the image as if it were a watercolor or composed of paint daubs.
- □ **B/W Limiter** – Attenuate the color values within the image to emphasize its grayscale components.
- □ **B/W Limiter Pro** – Combine a grayscale with hints of color from the original image.
- □ **Color Cocktail** – Emphasize kaleidoscopic transitions and color shifts.
- □ **Crochet Art** – Superimpose the image with a pattern that suggests the texture of knitted cloth.
- □ **Equalizer** – Suppress color values to produce a more subdued image.
- □ **Equalizer Pro** – Suppress color values to emphasize certain hues from the original image.
- □ **YUV Intensity** – Adjust the image in terms of YUV color model. Tends to produce pastel colors with stark contrasts.
- □ **Color Compress** – Produce a posterized appearance with intense hue shifts.

Gradients

- **Beam** – Subject the image to a strong light source.
- **Chaos** – Introduce sporadic shading throughout the image.
- **Double Sphere** – Apply a color distortion that exudes from the image center.
- **Frame** – Border the image with the appearance of vertical color strips that convey a sense of change or progress.
- **Mixed Beam** – Overlay the image with filtered colors, as if there were multiple color light sources.
- **Mixed** – Shift color regions within the image as if it were the product of a complex screen print.
- **Mystic Mountain** – Apply colors with a dream-like quality.
- **Quad Beam** – Burnish the image as if it were subjected to sources of strong white light.
- **Star** – Burnish the image as if it were subjected to an intense source of white light.
- **Spirals** – Superimpose concentric circles that suggest disorientation or activity.
- **Triple** – Intense hues of vertical bands or concentric circles.

Patterns

- **Radial Sinality** – Explosive rays or bands of varying amplitude that convey energy and inspiration.
- **Sinfinity** – Suggestive rays or bands of varying hues and amplitude.
- **Rasper** – Overlay curves and patterns like images from a contemporary fashion magazine.
- **70s Pop** – Overwhelm the image with a storm of multiple color light sources.
- **Random Art** – Intense rays or bands that suggest mood and transition.
- **Symbol Shaper** – Horizontal bands that suggest vision and realization.

Warp

- **Wonderland** – Ripple the image like water distortion or waves of heat.
- **Tiled Glass** – Divide the image into blocks of glass.
- **Swirl** – Ripple the image like a sheet that is being blown by a rotating fan.
- **Picture Chopper** – Ripple the image like a sail that is blowing in the wind.
- **Glass Slices** – Subdivide the image into fragments or slivers of glass.
- **Kamikaze** – Rotate and zoom the image.

Noise

- □ **Circular Noise** – Create static like a television that is experiencing poor reception.
- □ **Grain Maker** – Introduce a posterization that provides the image with a textured appearance.
- □ **Nail Art** – Superimpose a lattice of curved patterns.
- □ **Noisy Blur** – Distort the image as if it were being viewed underwater or from behind a panel of thick glass.
- □ **Noise Reducer** – A simple noise reduction filter for imported images.
- □ **Digital Cutter** – Divide the image into vertical barcode-like line segments, imposing the idea of digital static.

Encrypt/Decrypt

- □ **Black and White** – Combine up to eight (8) noise channels to produce a convoluted amalgam of the image.
- □ **Color** – Vary each pair of sliders (Key 1 and 2, Key 3 and 4, etc.) to resample the color regions of the image.
- □ **Moiré Decryption** – Introduce posterization and static that suggest corrupted image data.
- □ **Moiré Encryption** – Introduce posterization and static that suggest corrupted image data.
- □ **Noise** – Combine up to eight (8) noise channels.
- □ **Radial** – Subdivide the image into concentric sections that suggest a high-technology cyberpunk theme.
- □ **Sinus** – Apply short horizontal bands of noise.
- □ **Weak** – General soft background noise, as would be caused by a loose connector on a security monitor.

Other

- □ **Convolver** – Varying emboss effects that highlight details in the image.
- □ **File Size Reducer** – Discard image data, though at the risk of losing image detail.
- □ **Overpainting** – Overlay additional color layers like rough paint strokes.
- □ **Quadrant Flip** – Divide the image into four quarters, and then rotate the sections.
- □ **Streamer** – Create vertical or horizontal motion blur lines.
- □ **Zoom** – Magnify a circular portion of the image.
- □ **Convolver Pro** – Advanced emboss effects that highlight details in the image.

Nature

- □ **Dawning** – Imbue the image with a light source that suggests a rising sun.
- □ **Flame** – Create flame lines along bottom of image.
- □ **Lightning** – Place jagged diagonal lines to simulate a flash of lightning.
- □ **Polar Lights** – Simulate the presence of Christmas lights.
- □ **Super Nova** – Classic transition effects from science fiction movies.
- □ **Tornado** – Overwhelm the image with the appearance of high winds and debris.

Plug-ins: Alien Skin™ Sampler

Note: More Eye Candy plug-ins are available through the CADlink store: www.cadlink.com/store

VisionPro includes five plug-ins from Alien Skin. The plug-ins are available from the **Image** menu >> **Eye Candy 4000** flyout. The available plug-ins are:

- □ **Bevel Boss** – Creates carved, embossed or bevel surface texture.
- □ **Chrome** – Create a reflective embossed effect that simulates chrome and other shiny surfaces.
- □ **Corona** – Projects a halo effect that projects from behind the selection.
- □ **Gradient Glow** – Create soft glows or hard outlines around the selection.
- □ **Shadowlab** – Create drop, perspective, and cast shadows.

Plug-ins: CADlink Collection

In addition to the third-party plug-ins, CADlink provides a new set of in-house plug-ins, which are available through the **Image** menu >> **CADlink** flyout. The available plug-ins are:

- □ **Lighting Effects** – Combine up to six (6) distinct light sources to create the effect of artificially illuminating the image.
- □ **Posterize** – Resample the image according to discrete color regions, as would be used when creating color separations.
- □ **Sphere Effects** – Introduce one-or-more distortions that simulate raised sphere surfaces.
- □ **Tilt Effects** – Change the image perspective to create the sensation of depth.

Bitmap Editing Using AccuScan

From the **Scan Tools** flyout, the **AccuScan** tool is used to edit bitmaps. Double-clicking a bitmap will also activate the AccuScan editing mode. The AccuScan tools (Fig. 31) may then be used to edit the bitmap, apply filters and plug-ins, and convert the bitmap into a line-traced drawing format.

Fig. 31 - AccuScan controls within the SmartBar.
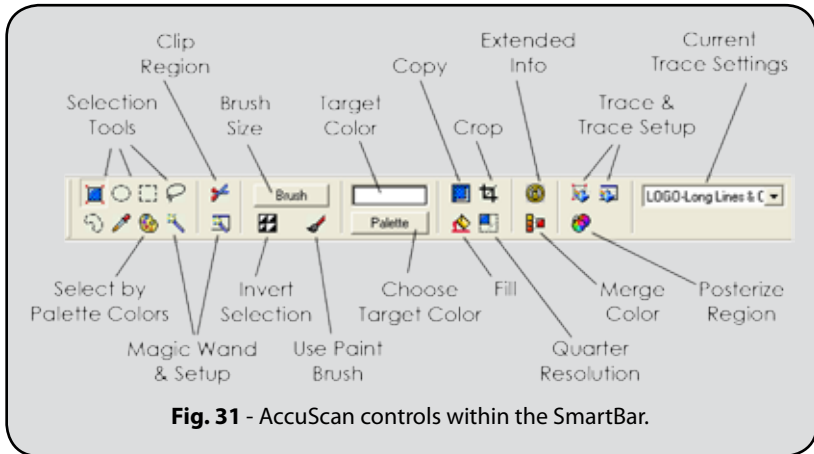
Selection Tools

When creating a selection, the **[Shift]** key may be used to extend the previous selection. In addition, the **[Control]** key subtracts from the previous selection.

- □ **Whole Bitmap:** Select the entire bitmap
- □ **Ellipse Select:** Select an oval area
- □ **Rectangle Select:** Select a rectangular area
- □ **Draw Lasso:** Select a freehand area
- □ **Draw Select:** Define an area that has an irregular shape
- □ **Eyedropper:** Pinpoint a color in bitmap and add it to the Shop Palette
- □ **Palette:** Select regions based on specific colors. Colors may be either added or subtracted from the current selection.
- □ **Magic Wand:** Select region based on similar colors. The Magic Wand setup may be used to customize what is considered to be "similar."

Applying Filters and Plug-Ins

When in AccuScan editing mode, the **Image** menu Color Adjustments, Filters, and Plug-Ins can all be applied to bitmaps. If only part of the bitmap is selected, then the effect or filter will only be applied to the selection.

Bitmap Palette Colors

Click the **Palette** button to display the current colors in the bitmap palette. The **Image Palette** dialog may be used to select palette colors and move them to the front or back of the palette.

If there is not enough space in the palette for new colors, then use the **Merge Colors** tool to reduce the number of palette colors.

Transparent Bitmap Color

Above the **Palette** button is the current **Target** color. The target color is used with the **Brush** and **Fill** tools.

The target color can be set to be transparent by pressing the **[Ctrl]** key and then left-clicking the **Target** color (Fig. 32).
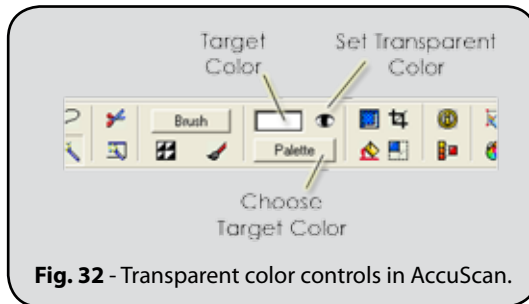

Fig. 32 - Transparent color controls in AccuScan.

Bitmap Manipulation Tools

The bitmap editing tools are summarized as follows:

☐ **Brush** – Edit the bitmap using the Target color.

☐ **Move Region** – Copy the selection and move it to a new location. Press [**Ctrl**] to fill the old region with the Target color.

☐ **Crop Tool** – Trim the bitmap to the selected area.

☐ **Fill Region** – Fill the selected area with the Target color.

☐ **Quarter Bitmap** – Reduce the resolution of the bitmap by 50% in terms of its width and height.

☐ **Extended Information** – Display information concerning the dimensions and resolution of the bitmap.

☐ **Merge Colors** – Used to remove all unused colors from the bitmap palette, and to replace selected colors in the Image Palette dialog with the Target color.

☐ **Posterize Region** – Generating a color palette for a bitmap where none exists, or expand/reduce the size of the bitmap palette.

How to merge palette colors

1. Use the **Posterize Region** tool to reduce the number of colors in the bitmap to 256 or less.

2. Beneath the **Target** color, click the **Palette** button.

3. The **Image Palette** dialog will open.

4. In the **Image Palette** dialog, click two-or-more colors, such that they have white borders.

5. Click the **Merge Colors** button, and the selected colors will be set to the **Target** color.

VECTORIZING IMAGES INTO LINE ART

VisionPro provides two methods of vectorizing an image into line art. The classic vectorization method provided leading-edge tools that were suitable for previous VisionPro users. The new method uses the **Prepare to Vectorize Wizard**, which introduces new tools for improving the image quality, knocking out the image background, and posterizing the image colors prior to tracing.

THE CLASSIC VECTORIZATION METHOD

The classic method of vectorizing a bitmap involved the **Posterize Region** and **Merge Color** tools to simplify the number of colors in the image. The following is an overview of the classic vectorization method:

Posterize the bitmap

1. In AccuScan mode, click the **Posterize Region** tool.

2. A dialog will query whether the vectorize wizard should be used. Click **No** to use the classic method.

3. The **Posterization** dialog will query for the number of colors to reduce the number of colors in the bitmap, such as 8 or 9 colors.

Merge similar colors

4. Beneath the **Target** color, click the **Palette** button to open the **Image Palette** dialog.

5. In the **Image Palette** dialog, click the similar colors, such that they have white borders.

6. Double-click the color these similar colors should be merged into. The **Target** color will be set.

7. Click the **Merge Colors** button, and the selected colors will be set to the **Target** color.

Vectorize the bitmap

8. At the far-right of the AccuScan SmartBar, choose the vectorization settings from the drop-list.

9. Click the **Vectorization** button.

The bitmap will now be vectorized, and the resulting vector shapes will be grouped.

The Prepare to Vectorize Wizard

This vectorization method uses the **Prepare to Vectorize Wizard**, which involves self-contained steps for improving image quality, knocking out the image background, and posterizing the image colors prior to tracing. The following is an overview of the **Prepare to Vectorize Wizard** steps:

Initial Wizard Settings

1. From the **Image** menu, choose **Prepare to Vectorize Wizard**.

2. The initial wizard page will query for **Super Size** and **Image Background** settings. Use the default amount of memory, click **Yes** to use Fluid Mask, and click **OK** to continue.

Zoom Engine (Super Size)

3. The **Zoom Engine** dialog will preview the image at the higher resolution quality.

4. Click **OK** to accept the default **Zoom Engine** settings.

Fluid Mask

Note: If the Fluid Mask tool is not available, then please skip to step (13).

5. The **Fluid Mask** window will analyze the color regions within the image, and thin irregular lines will be used to roughly identify each region.

6. Using the **Delete Local Brush** tool, click background regions of the image, such that they background appears to be filled with red.

7. If a portion of the foreground is accidentally filled with red, then use Undo **[Ctrl + z]** to correct.

8. If a portion of the background is difficult to fill correctly, then use the **Delete Exact Brush** to manually paint the background by dragging strokes.

9. When the background has been filled with red, choose **Image** menu >> **Auto-Fill Image**. The background will remain red, the foreground will appear to be filled green, and a blue "blending line" will appear along the boundary between red and green regions.

10. Choose **Image** menu >> **Create Cut Out**. The image should now appear with the formerly red portions "knocked out."

11. Use **[Ctrl + s]** to save the image back to VisionPro.

Import Options

12. The following import options will be provided when loading image data back into VisionPro:

   □ The **Prime** dialog will be available for applying either a primer and/or highlight to the image.

   □ The **Transparent Threshold** dialog will open. Click **OK** to accept the default value, which is used for controlling visibility of image pixels.

   □ The **Select Profile** dialog will provide an opportunity to select a new color profile.

Posterization

13. The **Posterization** dialog will now allow you to choose the colors that the image will be reduced to.

14. The top half of the dialog shows the original image before posterization. The bottom half previews the posterization, where **Color 1** is pure black by default.

15. Click **Color 2** and then click a color in the original image.

16. Likewise, click **Color 3** and choose another color in the original image.

17. Continue choosing colors, until the preview has enough colors to appear satisfactory.

18. Increase the tolerance for **Color 1** (black), so that shades of gray are accounted for.

Vectorization

19. Click **OK** to close the **Posterize** dialog, and the image is now ready to be vectorized.

20. Double-click the image to access AccuScan editing mode.

21. At the far-right of the AccuScan SmartBar, choose the vectorization settings from the drop-list.

22. Click the **Vectorization** button. The bitmap will now be vectorized, and the resulting vector shapes will be grouped.

PHOTOMACHINE

The **PhotoMachine** tools are used to convert a bitmap into a line-traced drawing that can be cut, routed, or engraved.

PhotoMachine styles:

- □ **None** – Produce a grayscale bitmap

- □ **Image Cut** – For use with cutters only. Weeding lines for vinyl are produced, where thin bands represent light portions of the bitmap, and thick bands represent dark portions.

- □ **Wiggle** – For use with low-resolution engravers. Creates a pattern that appears to wiggle across the image.

- □ **Output Tool Paths** – For use with low resolution engravers. Creates a standard engraving pattern.

- □ **Squares** – For use with cutters only. A pattern of variable-sized squares is used to depict the image. Smaller squares represent light portions of the bitmap, and larger squares represent dark portions.

- □ **Stars** – This style is similar to Squares, except that star shapes are used.

- □ **Rain** – For use with laser-engravers. Creates multiple "falling rain" lines for each pixel.

- □ **Iron filings** – This style is similar to Rain, except that all lines are created at random angles.

- □ **3D Image** – Creates a 3D tool path based on the image. For devices that support depth control, the tool path may be used to render a three-dimensional relief image on the loaded material.

Chapter 6

Rotary Engraving

In This Section…
- ☐ Configuring the machine
- ☐ Adding Tools Paths
- ☐ Previewing the cut job
- ☐ Registration marks and cutter alignment
- ☐ Tiling jobs to fit media and machine limits
- ☐ Filtering cut shapes by color
- ☐ Recording the lifetime of the cutting tool
- ☐ Estimating time required to complete the job
- ☐ Creating weed borders around script lettering

Updating Machine Drivers

File menu >> **Install** >> **Cutting Devices**

Windows **Start** menu >> **All Programs** >> **VisionPro** >> **Cutting Device Installation**

Before a given machine can be used, its software driver must be installed, which allows your computer to communicate with the machine. Once installation has been performed, the machine will be available via **Engrave** menu >> **Engraving Defaults** >> **Selected Driver** drop-list.

Updating Plotter Drivers

New and updated plotter drivers are posted to the CADlink web site as they become available.

1. Go to the CADlink web site at www.cadlink.com
2. Select **Downloads** and **Plotter Drivers**, and then login when prompted.
3. Select the plotter manufacturer, the model, and the CADlink product version that you are using.

Note: The product version can be found via **Help** menu >> **About VisionPro**.

CONFIGURING THE MACHINE

Engrave menu >> **Engraving Defaults**

Installation of your VisionPro involved choosing the machines that would be available. For each device that was selected, the corresponding device driver was installed. A device driver is the software component that allows the workstation to communicate (i.e., send data) to the plotter or cutter.

Important Output Dialog Settings

1. Choose **Engrave** menu **>> Engraving Defaults** to open the **Output** dialog.

2. From the **Output** dialog, choose the **Tool** that will be used for plotting or cutting. For some cutters, the Tool setting refers to the set of machine conditions that are being used, in which case the Operator's Manual should be consulted for that cutter.

3. Click the **Tool Options** button to view feeds and speeds for the machine. For more information about the feed and speed parameters, consult the machine's Operation Manual.

Setting Feeds and Speeds per the Material Type

The **Tool Options** dialog parameters can be set according to material type.

1. Choose **Engrave** menu **>> Engraving Defaults** >> **Tool Options**.

2. The **Tool Options** dialog for the machine will open, which displays the available feeds and speeds that can be set for the machine.

3. At the top-right of the dialog, the **Material** drop-list is used to choose the default material that has been loaded into the machine.

4. Once the material has been selected, set the feed and speed parameters accordingly.

Important Engraver Setup Settings

1. Choose **Engrave** menu **>> Engraving Defaults** >> **Setup** to open the **Engraver Setup** dialog

2. On the **Engraver Setup** tab, verify that the **Machine Limits** are correct

3. On the **Port** tab, choose the method of sending cut data to the machine:

   ☐ **Direct to port** – This will send the cut data to a machine that is attached to this workstation.

   ☐ **Use Output Spooler** – This is a legacy feature of VisionPro that is kept available for seasoned VisionPro users.

CREATING TOOL PATHS

Engrave menu >> **Create Tool Path**

Tools toolbar >> **Tool Path Tools**

By default, newly created workspace shapes are treated like simple contour cut paths of zero depth. To define more sophisticated machining paths, use the Tool Path Tools flyout (Fig. 33).
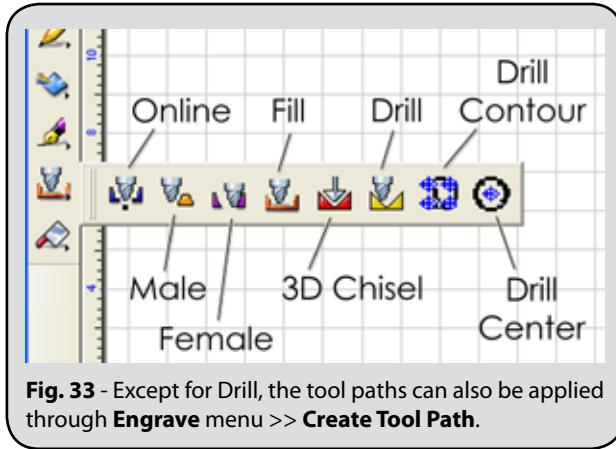

Fig. 33 - Except for Drill, the tool paths can also be applied through **Engrave** menu >> **Create Tool Path**.

Online

Defines a basic cutting path for which the tool will follow the edge of a designated shape (Fig. 34). The resulting cut will have an offset of zero. The **Online** tool path is often used to trace shapes in artwork without filling the shapes with an engrave pattern.
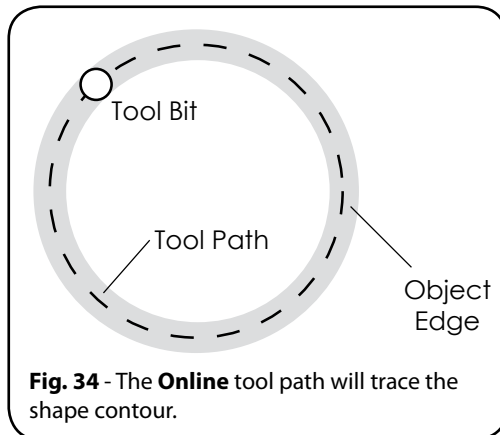
**Fig. 34** - The **Online** tool path will trace the shape contour.

Male

Defines a basic cutting path on a selected shape, such that the resulting cut shape will fit within a corresponding female shape (Fig. 35). The tool path will fall to the outside of the shape contour, such that the offset equals one-half of the bit width. The **Male** tool path is typically used to cut shapes out of a material.

Fig. 35 - The **Male** tool path will cut a shape that fits within a corresponding female shape.
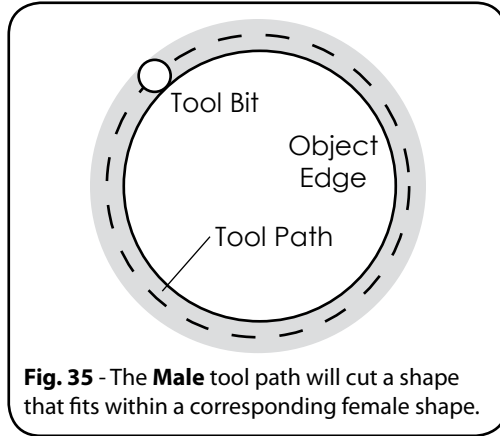
Female

Defines a series of cutting paths on a designated shape, such that the resulting cut shape may contain a corresponding male shape (Fig. 36). For example, consider a polygon shape that is cut using a **Male** tool path, thereby producing a male cut. Suppose then that the same polygon shape is cut using a **Female** tool path, thereby producing a female cut. The male cut will then fit within the inner contour of the female cut.

Fig. 36 - The **Female** tool path will cut a shape that contains a corresponding male shape.
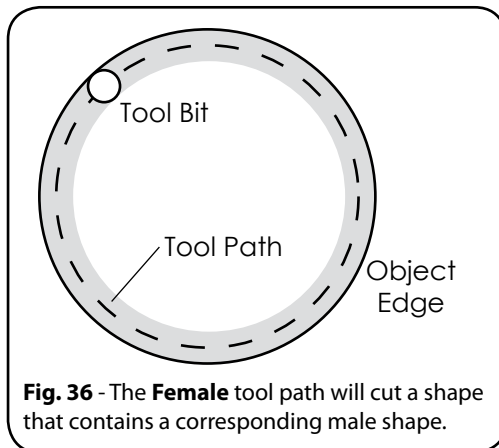
Fill

Defines a series of cutting paths designed to remove material from inside a selected shape.

Note that when simply placing one object within another, a fill operation will engrave the outer object without consideration of the inner object. The correct technique is to combine two such objects into a single path, and then the **Fill** tool path operation may be applied. The following steps show how this is done:

Assume that a text logo must be placed within a star shape, all of which must then be filled without losing the text.

1. Create text for the logo. With the text selected, choose **Arrange** menu >> **Text to Graphics**. This will convert the text into a graphic for cutting.

2. Create a star shape that is large enough to contain the logo, and then center the text within the star.

3. With both the text and star selected, choose **Arrange** menu >> **Make Path**. Both objects will now have been combined into a single object.

4. Apply a **Fill** operation to the combined object. The result will be a filled star shape that correctly retains the text that was placed within it.

3D Chisel

Defines a cutting process that varies the depth of a contour tool (usually a conical tool, or a V-bit) along the defined path. The width of the cut path varies with the depth of the tool path. This type of cutting is used to create a "hand carved" effect.

Drill

The Drill tool is used to place drill points upon the workspace. Simply left-click on the workspace to place a drill point. For a selected drill point, its **Depth** is editable from the SmartBar.

Drill Contour

The **Drill Contour** tool will lay a series of drill points along the contour of an object or group of objects.

☐ **Number** indicates the number of drill points that will be spaced evenly along the contour of the selected object.

☐ **Distance** between points is used to space drill points evenly along the contour of the object.

☐ **Offset** is used with the Distance option to indicate an initial gap before drill points are placed. After the gap, drill points will be spaced according to the Distance value.

☐ **Nodes** represent the coordinates that are used for rendering the object on the computer screen. Use this option to place drill points according to each node. This feature is especially useful when used with polygons.

☐ **Nodes and Distance** will begin by placing drill points according to each node of the object. Additional drill points are then placed according to the distance.

Drill Center

The **Drill Center** tool will place a drill point in the center of the selected object. If more than one object is selected, then a drill point will be placed at the center of each object.

PREVIEWING AND SENDING THE JOB

Engrave menu >> **Output**

Tools toolbar >> **Output Tool**

Engrave Preview mode will display the workspace shapes as they will be cut upon the material. The SmartBar displays the current cut settings, as per **Engrave** menu >> **Engraving Defaults**. The **Cut Toolbox** toolbar provides additional functions that can be applied to the job before cutting (Fig. 37).

Except where noted, any settings made using the SmartBar controls or the **Cut Toolbox** toolbar will not change the default values. Instead, such changes will only apply to the current job.
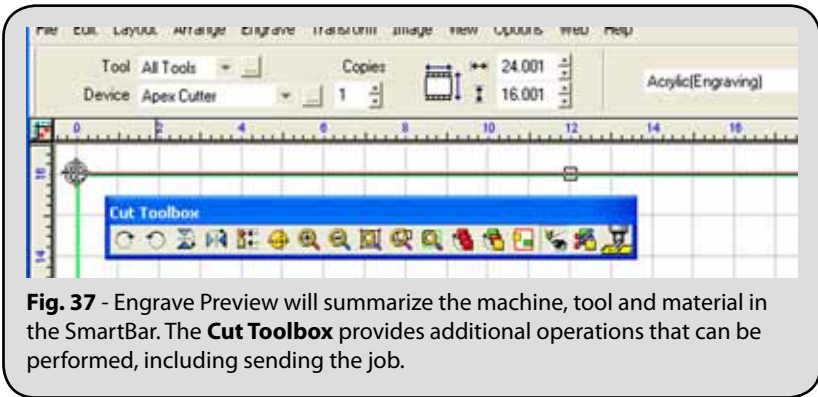
Fig. 37 - Engrave Preview will summarize the machine, tool and material in the SmartBar. The **Cut Toolbox** provides additional operations that can be performed, including sending the job.

At the far-right of the **Cut Toolbox**, click the **Engrave** button to send the job. Alternatively, if elements of the design have been organized according to color, then the **Sort and Cut All Colors** button can be used to control the order in which the design elements are output (See also Filter By Color).

REGISTRATION MARKS

Registration marks are typically used in the following manner:

- □ Where multiple layers of vinyl are being used to compose a sign fascia, create registration marks to help with alignment of each layer.

- □ When loading printed media into the cutter, some cutter models have a sensor that can recognize the registration marks and align the job automatically. For cutters that do not include a sensor, the operator will be prompted to <u>manually</u> align the cutter tool with each registration mark.

- □ For a sheet a material, a registration mark can be used as a point of reference that will be used to position subsequent jobs (see also Plotter Jog).

Locations of Registration Mark Tools

A. From the **Shape Tools** flyout, the **Registration Mark** tool is used to manually place registration marks about the artwork.

B. From the **Shape Tools** flyout, the **Multi-Registration Mark** tool is used to manually offset registration marks about the artwork.

C. In **Engrave Preview** mode, the **Cut Toolbox** has a **Registration Mark** button. <u>Right-click</u> the **Registration Mark** button to choose the position, size, and offset of the registration marks. <u>Left-click</u> the **Registration Mark** button to place the specific type of registration marks.

PLOTTER JOG

Plotter jog is the ability to position the cutter head by using the **Jog** dialog controls in VisionPro. This feature is typically used to reduce wasted material by cutting new shapes within unused sections of media.

Note: For cutters that are connected via a serial port connection, VisionPro is able to query the head position automatically. However, for parallel port connections, you must visually confirm the head position.

---

1. Choose **Engrave** menu >> **Engraving Defaults.**
2. From the **Output** dialog, tick the **Jog** checkbox.
3. At this point, either use the **Shape Tools** flyout to add registration marks, or add registration marks in Engrave Preview mode.
4. Choose **Engrave** menu >> **Output.**
5. At the far-right of the **Cut Toolbox**, click the **Engrave** button.
6. The **Jog** dialog will open, and the tool can be positioned for each registration mark.

TILE SETTINGS

If the design exceeds the limits of either the machine or material, then the job must be divided into tiles that can be output as separate jobs. If tiles can be repositioned to all fit within the available material, then they can be as a single job.

When creating a design, the dimensions of the loaded material should be considered, and one should be mindful of the maximum physical limits of the machine. For example, consider a roll of tractor-fed media. Not only is the width of the media a constraint, but the teeth of the tractor-feed also restricts the width. As a general rule, consult the Operator's Manual to confirm the physical limits of the machine.

CREATING TILES IN ENGRAVE PREVIEW MODE

1. Choose **Engrave** menu >> **Output**.
2. In the **Cut Toolbox,** click the **Tile** button**.**
3. A dashed rectangular bounds will appear around the design.
4. Move the cursor over an edge of the bounds, such that the cursor becomes a bidirectional arrow.
5. Click-and-drag to create a tile line. Both vertical and horizontal tile lines can be created in this fashion.
6. After the tile lines have been created, it is possible to select only some of the tiles for printing.
7. For example, tiles can be clicked, such that only tiles with an 'X' will be cut.
8. However, if none of the tiles have an 'X', then ALL of the tiles will be cut.
9. Click **Apply** to finish editing the tiles.
10. Drag the tiles to reposition them upon the material.

FILTER BY COLOR

The **Filter By Color** option is used to send only one color layer as output to the machine. This feature is typically used when cutting shapes from different colors of vinyl, or where tool operations have been assigned colors according to the tool type. If thick line styles are in the design, then the line colors will also be filtered.

Filter By Color can be enabled in the following ways:

A. Choose **Engrave** menu >> **Engraving Defaults**, and then tick the **Engrave by Color** checkbox. This will cause the **Filter by Color** dialog to automatically open in the **Engrave Preview** state.

B. Choose **Engrave** menu >> **Engraving Defaults**, and then in the **Cut Toolbox** click the **Filter by Color**. The **Filter by Color** dialog will open.

Filter by Color Dialog

Use the Filter by Color dialog (Fig. 38) to choose the color layer that will be output. Once the design elements belonging to that color have been output, the dialog will re-open, where either the same or another color layer can then be chosen.
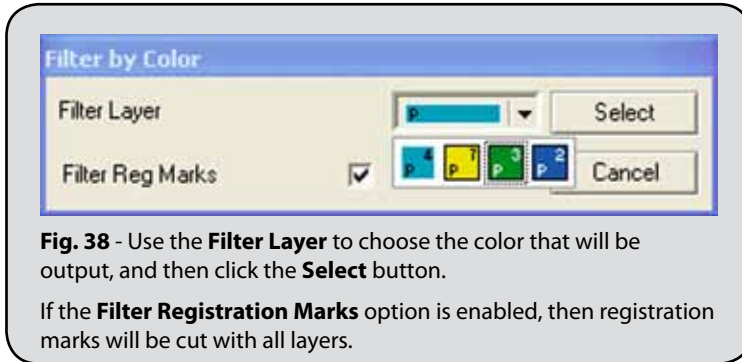

Fig. 38 - Use the **Filter Layer** to choose the color that will be output, and then click the **Select** button.

If the **Filter Registration Marks** option is enabled, then registration marks will be cut with all layers.

OUTPUT TOOL USAGE

Engrave menu >> Output Tool Usage

Output Tool Usage is an estimation tool that collects statistical information about the performance of the tools being used in cutting or plotting. A variety of data is gathered about each tool, such as the overall distance traveled, the number of jobs completed, and the date of the last tool change. Using this data, comparisons between successive tools may be used to make an informed decision about when tools are likely to decline significantly in performance. Tools may then be replaced in advance of this decline, thereby preventing materials from being wasted by an old tool.

ESTIMATE TIME FOR CURRENT JOB

When using this option, be prepared to record the approximate time that is needed to complete the next cutting job. After the job is completed, you will be asked to enter the time that was expended in completing the job.

Note: From the **Help** menu, the **TimeSign** feature can be used to record the expended time.

Once the expended time has been set, use **Engrave** menu **>> Show Traveled Distance** to estimate how much time will be required to cut other jobs. By using this estimate, you can better manage your own time, since you will be able to work on other tasks and return when the current job is complete.

WEED AND POWER WEED

Weeding is used with cut vinyl applications, where the cut shape must be peeled away from its backing. When peeling a vinyl shape, the risk is that it doesn't pull easily from the backing, which can result in unexpected stretching of the vinyl. This is particularly problematic with small text shapes.

To avoid stretched vinyl, a weed border may be created, which is essentially an extra rectangular cut around the shape. Once cutting is done, the rectangular cut can be peeled away, followed by the inner shape.

Weed borders can be created in the following ways:

☐ Choose **Shape Tools** flyout >> **Weed Border**. This will create a rectangular weed line at the indicated offset around the design.

☐ Choose **Shape Tools** flyout >> **Power Weed**. Power Weed is like the Weed Border tool, except that additional weed lines can be dragged from the edges of the border. Such additional weed lines are typically used to bisect text shapes.

☐ In **Engrave Preview** mode, left-click the **Weed** button to create a weed border. The offset amount can be set by right-clicking the **Weed** button.

Note: Weed lines will not cut into a given shape.

CHAPTER 7
LASER ENGRAVING

In This Section…

☐ Configuring the workspace for laser engraving designs

☐ Preparing line art and images for laser engraving

☐ Enhancing the quality of engraved images

☐ Setting preferences within the laser engrave driver

This chapter describes how to configure and output different types of laser engraving output. For line art shapes (i.e., vector shapes), the contour of such shapes can be output as cut lines, and the fill color as a raster fill. In addition, the Photo Laser tool can be used to prepare an image for laser engraving.

INSTALLING THE PRINTER DRIVER

Like a desktop printer, a laser engraver uses the **File** menu >> **Print** command to send output. As such, the printer driver that was included with the laser engraver should be installed. Typically, the printer driver is on a CD that was shipped with the laser engraver, otherwise the manufacturer web site should be checked for the latest driver.

PREPARING A LASER ENGRAVING JOB

Whereas cutting to a rotary engraver uses the **Engrave** menu >> **Output** command for sending a job, laser engravers use the **File** menu >> **Print** command because the printer driver is used to interpret the image data for laser engraving. In this manner, laser engravers can interpret object fills and strokes as cut data.

1. Begin by creating a new workspace. The **Plate Size** dialog will query for the size of your engraving bed.

2. Typically, the **Width** and **Height** should be set according to the cutting area of your machine.

   These settings can be modified later using **Layout** menu >> **Plate Size**.

SET A DEFAULT COLOR PALETTE

1. From the **Options** menu, choose **Palette >> Load >> Set Default**.

    This command is also available through the Shop Palette context menu.

2. The **Default Palette** browse dialog will open.

3. From the VisionPro install directory, browse to the **Palettes >> Engrave** directory.

4. In the Engrave directory are an assortment of color palettes per different manufacture of laser engraver. Each palette contains colors used by the given manufacturer to indicate speed and power.

5. Choose the color palette that corresponds to your laser engraver, and then click the **Save** button.

6. From the **File** menu, start a new workspace by choosing **New**.

7. Along the bottom of the workspace, note that the Shop Palette has loaded the manufacturer palette that you had previously set as the default.

SETTING FILL AND STROKE COLORS

With laser engravers, object fill colors produce an engrave fill, and hairline colors produce a cutting line.

1. Under the **View** menu, confirm that there is a checkmark beside the **Show Fill** option.

2. Under the **View** menu, confirm that there is a checkmark beside the **Show Tool Paths** option.

3. Create a circle shape and assign a black fill.

    (i.e., select the circle and left-click black in the Shop Palette)

4. Draw a square around the circle and assign an Invisible fill (Fig. 39).

    (i.e., select the square and left-click **Invisible** in the Shop Palette)

5. Select the square shape.

6. From the **Stroke and Fill Tools** flyout, choose **Tool Diameter**.

7. In the SmartBar, choose a **Hairline** style, and set a red stroke color (Fig. 40).
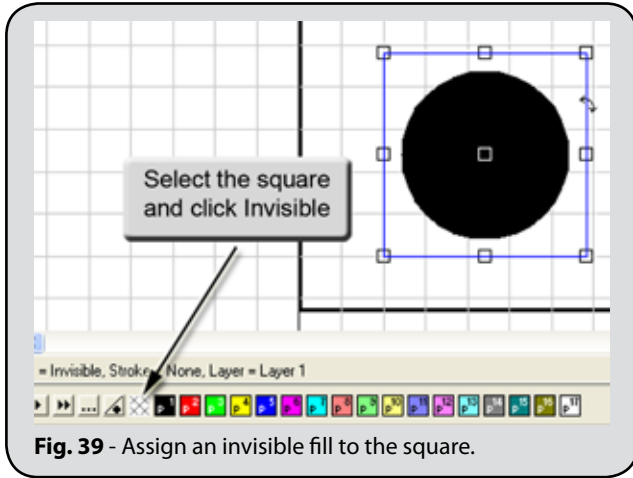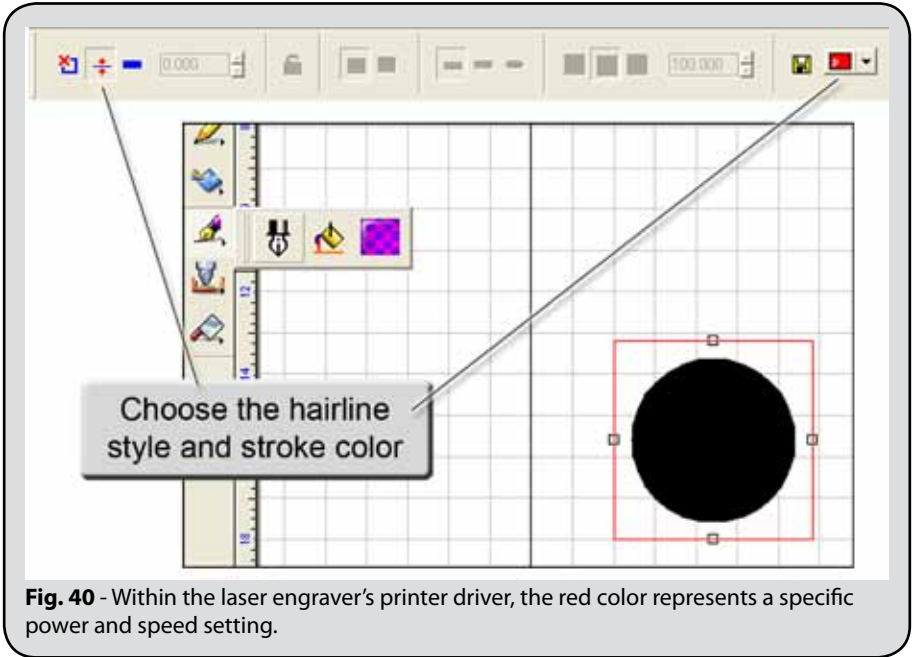
Fig. 39 - Assign an invisible fill to the square.

Fig. 40 - Within the laser engraver's printer driver, the red color represents a specific power and speed setting.

PRINTING TO THE LASER ENGRAVER

As mentioned previously, laser engraving output is driven through a printer driver, so output from VisionPro is done using the **File** menu >> **Print** command.

1. Choose **File** menu >> **Print** to open the **Print** dialog (Fig. 41).

2. On the **Printer** tab, select your laser engraver.

   Note: If your laser engraver is not listed, then refer to the installation instructions provided with your laser engraver.

3. Tick the **Preview** checkbox.
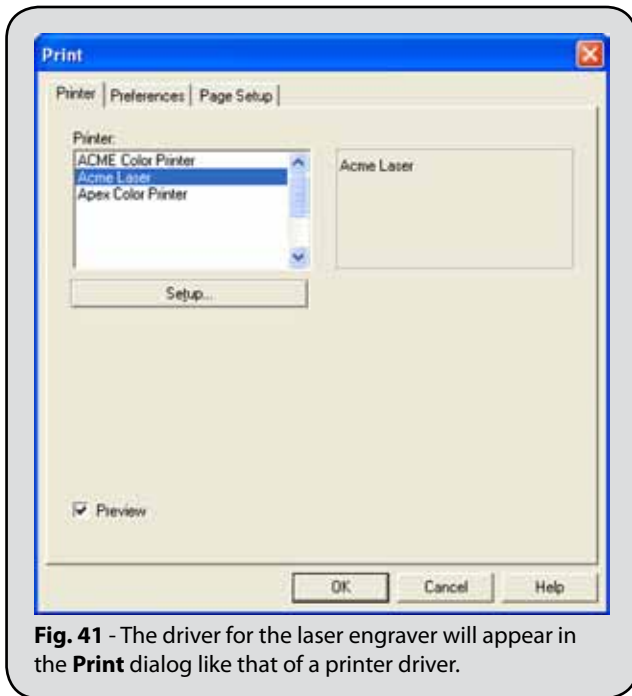
Fig. 41 - The driver for the laser engraver will appear in the **Print** dialog like that of a printer driver.

4. Click the **Preferences** tab (Fig. 42).

5. Tick the **Print As Shown On Screen** checkbox.

6. Click the **Plate Area** option.

7. If required, tick the **Print by Colors** option, which is used to maintain a particular sequence in which the objects are cut.

8. On the **Printer** tab, click the **Setup** button.

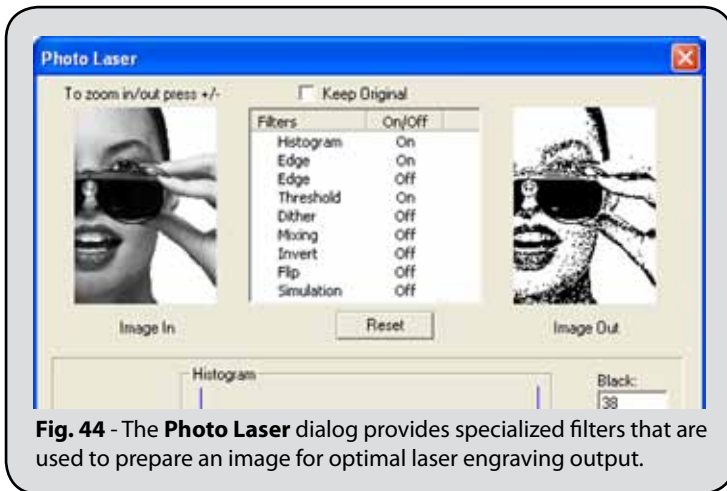9. The **Properties** dialog for your laser engraver will open.

Fig. 42 - The **Photo Laser** dialog provides specialized filters that are used to prepare an image for optimal laser engraving output.

10. The controls on the **Properties** dialog will vary according to your model of laser engraver (Fig. 43). For specific instructions concerning these controls, please refer to the documentation provided with your laser engraver.

11. The following aspects of the **Properties** dialog should be checked:

   ☐ For the colors defined within the driver, adjust the power and speed settings as required.

   ☐ For each color, set the pen mode to output both raster and vector data.

   ☐ Confirm that the engraving area is correct.

   ☐ Set the cutting mode to Black and White.
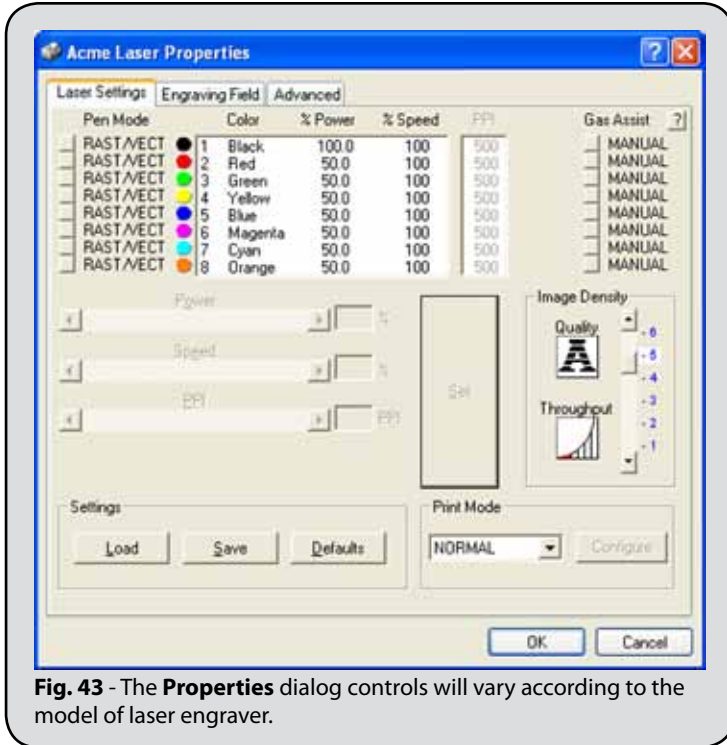
Fig. 43 - The **Properties** dialog controls will vary according to the model of laser engraver.

12. Click **OK** to accept the **Print** dialog settings and enter the **Print Preview** page.

SENDING THE LASER ENGRAVING JOB

1. The file is ready to be output.
2. Confirm that the machine is online and loaded with the appropriate material.
3. In **Print Preview**, click **Print** to begin engraving.

PREPARING AN IMAGE FOR LASER ENGRAVING

The Photo Laser tool is used to prepare an image for output through a laser engraver. Various image filters are available for improving the quality of the image, and you can choose from preset settings that have been configured for different types of material. Since a laser engraver is essentially a monochrome device (laser on, or laser off), any color information retained in the image is not useful, so the resulting photo laser image will be in monochrome format.

1.   Import an image onto the workspace.

2.   From the **Transform** menu, choose **Photo Laser >> Interactive**.

Fig. 44 - The **Photo Laser** dialog provides specialized filters that are used to prepare an image for optimal laser engraving output.

3.   The **Photo Laser** dialog (Fig. 44) will preview the effect of applying the various filters.

4.   In the **Filter** list, right-click will toggle a filter between ON/OFF.

SUGGESTIONS FOR ADJUSTING FILTERS FROM SCRATCH

> **Note:** In the lower-left corner of the **Photo Laser** dialog, click the **Load Presets** button to choose from an assortment of parameter files that have been configured for various materials.

If you wish to adjust the Photo Laser settings without using preset values, then it is recommended that you start with only one filter, and then incrementally increase the number of filters until you achieve the desired results. For example:

☐   Right-click to turn OFF all the filters, except for the **Histogram** filter.

☐   Adjust the **Histogram** filter to trim excess shadow (**Black**) and excess highlight (**White**).

☐   If necessary, adjust the midtone (**Gamma**) to obtain more balance in the resulting shades.

□ At this point, the image can be further refined by incrementally turning on more filters, one by one, and making adjustments as appropriate.

□ For example, turn ON an **Edge** filter, set it to **Unsharp Mask**, and then adjust the **Amount**, **Radius** and **Threshold** to find values that produce good results.

□ Then turn ON the **Threshold** filter and adjust the **Threshold** slider to help sharpen the image.

CHAPTER 8

DRAFTS AND PROOFS

In This Section…
- ☐ Printing to a Windows printer
- ☐ Adding rough notes to your VisionPro design
- ☐ Collecting notes about the customer and design
- ☐ Creating a layout template for your customer proofs
- ☐ Sending previews to customer via e-mail

WINDOWS PRINTER DRIVER

The **File** >> **Print** command is used to print to a desktop printer. For a printer to be available, its printer driver (provided by the manufacturer) must be installed in the Windows **Control Panel**.

Using the **Print** dialog relies upon Microsoft's color management and the printer driver to control the print layout, quality, and color integrity of the printed image. Though this method is common to all Windows applications, it is not recommended for printing large signage.

PREFERENCES WHEN PRINTING A DRAFT

Choose **File** menu >> **Print** to open the **Print** dialog. The **Print** dialog settings are used to preview the draft and choose draft options.

- ☐ On the **Printer** tab, enable the **Preview** option. When the **OK** button is clicked, the print job will be previewed, which will allow you to position and scale the draft.
- ☐ On the Preferences tab, tick the **Dimensions and Notes** option. This will allow any dimensions or notes to be printed.
- ☐ If it is helpful, then enable the **Guidelines** or **Grid Lines** options.
- ☐ To avoid printing weed borders in the draft, enable the **Do Not Print Weed Border** option.

DIMENSIONS AND NOTES

On the VisionPro workspace, dimensions and notes are created from the **Measure Tools** flyout. When dimensions are scaled, the measurement will be updated automatically. Similarly, if dimensions are grouped with shapes, then scaling the group will update the measurement automatically.

☐ **Dimension** – Measure the distance between two points.

☐ **Object Dimension** – Measure the height or width of the selected object.

☐ **Arrow Draw** – Annotate the workspace. For each arrow drawn, a note may be created. Double-click the arrow to edit its thickness.

☐ **Notes** – Add descriptive notes to the workspace.

JOB/COST NOTES

The **Job/Cost Notes** are used to include additional information about the customer, and construction details for the design. When a draft is printed, the Job/Cost Notes should be printed as well to serve as a reference.

For future jobs, customer contact information can be reused. In the **Job Notes Summary** dialog, the company name can be selected from the drop-list.

CREATING A DRAFT TEMPLATE

When a VisionPro workspace is saved, its file type is a CADlink Drawing File (CDL). A "template file" is like a regular CDL file, except that it also includes variable fields. When the template file is opened, the variable fields are either completed automatically (such as date fields), or VisionPro will prompt you for the text (such as customer name).

TOOLS WHEN WORKING WITH TEMPLATE FILES:

- □ **File >> Open** – Load a template file. Variable fields like **Time** and **Date** will be automatically updated. For other fields like **File** and **Text**, you will be prompted to complete the field.

- □ **File >> Edit Template…** – Load a template file without completing the text fields.

- □ **Layout >> Templates >> Set Template** – Use the **Text Compose** tool to create a text shape. The text can then be selected and converted into a variable field of type: **File**, **Date**, **Time**, or **Text**.

- □ **File >> Save** – Save the template file with variable fields.

- □ **File >> Save as…** – After loading a template file and completing the variable fields, save the file under a new name.

After using **File >> Open** to load a template file, make sure that the file is *saved under a new name*. Otherwise, you will overwrite the original template file.

EXAMPLE OF CREATING VARIABLE TEXT

1. Use the **Text Compose** tool to create a text shape "Customer Name".
2. Select the text shape, and then choose **Layout >> Templates >> Set Template >> Text.**
3. Use **File >> Save as…** to save the template file.
4. Close the file and start a new VisionPro workspace.
5. Use **File >> Open** to open the template file.
6. Note that you are prompted to enter text for "Customer Name".
7. After the template has been loaded, use **File >> Save as…** to save the file under a new name.

LOAD AN EXAMPLE TEMPLATE FILE

1. Use the **File >> Open** command to load "portrait.cdl" from the CADlink \ VisionPro \ Template directory.
2. You will be prompted to enter text for: File Name, Designer, Contact, and Customer.
3. You will then be prompted to import a previously saved image file.
4. Press **[F8]** to see the complete design, which can be used as a proof for sending to customers.
5. Note that the date has been updated automatically.

Send Image by E-mail

Use the **Send Image by E-mail** command to send a preview of the current VisionPro design via e-mail.

☐ Instead of including the entire design, it is possible for only selected objects to be previewed.

☐ Your company logo can be included with the preview, and clicking the logo can help the customer to locate your web site.

☐ Optionally, job notes can be included with the preview (see **File** menu >> **Job/Cost Notes**).

☐ When the **Send** button is clicked, the preview will be opened in your default e-mail client.

Example - Sending a PDF Proof

Use the following steps when configuring the **Send Image by E-mail** command to send a PDF proof to a customer:

1. Make note of the customer e-mail address, so that it is handy later.

2. Go **Web** menu >> **Send Image by E-Mail**.

3. The **E-mail Preview** dialog will open.

4. Click **Settings** to open the **E-mail Preview Settings** dialog.

5. Click **Advanced** to open the **Advanced E-mail Preview Settings** dialog.

6. From the **Image format** drop-list, choose **PDF**.

7. Click **OK**, and then click **OK** again.

8. From the **E-mail Preview** dialog, click **Send**.

9. The **PDF Settings** dialog will open.

10. Set the **Quality** = Low.

    Choosing medium or high quality can create a file size that is excessive for e-mail. Generally, seek a file size that does not exceed 5MB, though preferably less than 1MB.

11. Click **OK** to proceed.

12. Per your e-mail client, an e-mail editing window will be populated with the job details, and the PDF will be added as an attachment.

13. Enter the e-mail address of the customer, and type a descriptive subject line.

14. The message is now ready for sending.

> **Note:** In older versions of Microsoft Outlook (2000 and 2003), there is a bug that can prevent the **Send** button from working. In such a case, use the **[ALT + s]** shortcut to send the message.

EXAMPLE - SENDING A **PNG** OR **JPEG** PROOF

Use the following steps when configuring the **Send Image by E-mail** command to send a PNG or JPEG proof to a customer:

1. Make note of the customer e-mail address, so that it is handy later.

2. Go **Web** menu >> **Send Image by E-Mail**.

3. The **E-mail Preview** dialog will open.

4. Click **Settings** to open the **E-mail Preview Settings** dialog.

5. Set the **Preview image** size slider according to the approximate image size that the customer should be provided with.

    Generally, a pixel width from 400 pixels to 800 pixels will provide enough detail without exceeding a convenient viewing area of a computer monitor.

6. Click **Advanced** to open the **Advanced E-mail Preview Settings** dialog.

7. From the **Image format** drop-list, choose either **PNG** or **JPG** (i.e., JPEG).

8. Click **OK**, and then click **OK** again.

9. From the **E-mail Preview** dialog, click **Send**.

10. Per your e-mail client, an e-mail editing window will be populated with the job details, and the PNG or JPG file will be added as an attachment.

11. Enter the e-mail address of the customer, and type a descriptive subject line.

12. The message is now ready for sending.

Note: In older versions of Microsoft Outlook (2000 and 2003), there is a bug that can prevent the **Send** button from working. In such a case, use the **[ALT + s]** shortcut to send the message.

APPENDIX A

HOT KEYS AND SHORTCUTS

In This Section…

- ☐ Keyboard menu shortcuts
- ☐ Function keys
- ☐ Hot keys for aligning shapes
- ☐ Using guidelines for layout
- ☐ Node palette and node editing hot keys
- ☐ The grid and align palette
- ☐ Color palette tips, and color substitutions
- ☐ Selecting and manipulating shapes

KEYBOARD MENU SHORTCUTS

Please note that the VisionPro menus have keyboard shortcuts (not listed here) that will reduce your editing time. These shortcuts are listed next to each menu item, and these shortcuts can be customized (added, changed, deleted) by choosing **Customize Shortcuts** under the **Options** menu.

FUNCTION KEYS

The function keys in VisionPro operate as follows:

[F1]	Help
[F2]	Disable all Shop Palette color layers except the current target layer
[F3]	Select all objects
[F4]	Refresh the workspace
[F5]	Zoom marquee
[F6]	Zoom out
[Shift+F6]	Zoom in
[F7]	Zoom to selected object
[F8]	Zoom to Plate Size
[F9]	Toggle between current and previous zoom levels
[F10]	Select the menu bar

ALIGN SELECTED SHAPES

To align selected shapes quickly, use the following hot keys:

[ALT + 1]	Align shapes along left edge of bounds
[ALT + 2]	Center shapes vertically
[ALT + 3]	Align shapes along right edge of bounds
[ALT + 4]	Align shapes along top edge of bounds
[ALT + 5]	Center shapes horizontally
[ALT + 6]	Align shapes along bottom edge of bounds
[ALT + 7]	Center shapes both horizontally and vertically

ALIGN SHAPES TO THE PLATE SIZE

To align shapes to the plate size, use the following hot keys. Most of these correspond to **Layout** menu >> **Arrange and Distribute** >> **Align to Plate**.

[ALT + Delete]	**Left** – Align with left edge of plate
[ALT + Page Down]	**Right** – Align with right edge of plate
[ALT + Insert]	**Top** – Align with top edge of plate
[ALT + Page Up]	**Bottom** – Align with bottom of plate
<no default>	**Center** – Align with center of the plate.
[ALT + End]	**Center Horizontally** – Center horizontally along height of plate
[ALT + Home]	**Center Vertically** – Center vertically along width of plate
[Ctrl + Q]	**Equal Spacing** – Space text objects equally over height and width of plate.
<no default>	**Equal Vertical Spacing** – Space text objects vertically across plate.
<no default>	**Equal Horizontal Spacing** – Space text objects horizontally across plate.

ALIGN SHAPES TO LAST SELECTED OBJECT

When using **[Shift]** to select a collection of objects, the following hot keys will align shapes to most recently selected object"

[L]	**Left** – Align with the left edge of the last object.
[R]	**Right** – Align with the right edge of the last object.
[T]	**Top** – Align with the top edge of the last object.
[B]	**Bottom** – Align with the bottom edge of the last object.
[E]	**Horizontally** – Center horizontally along height of last object.
[C]	**Vertically** – Center vertically along width of last object.

GUIDELINES

When dragging shapes, guidelines are used for precise alignment. A shape will "snap" to the location when it is dragged over a guideline.

□ When there is <u>no selection</u>, right-clicking on the workspace will open the **Edit Guides** dialog.

□ Under the **Options** menu, choosing **Guides >> Edit Guides** will open the **Edit Guides** dialog.

□ Right-clicking a ruler will create a guide.

□ For a selected shape, press **[Shift]** and right-click the shape nubs to create guides (not when editing a parametric shape).

□ To add guides when node editing, press **[Shift]** and right-click the node.

□ When dragging a guide, press **[Shift]** to constrain the guide to the nearest ruler increments.

□ To lock guides in place, open the **Edit Guide** dialog and check the **Lock Guides** checkbox.

□ To temporarily hide the guides, choose **Options menu >> Guides >> Use Guides**. The shortcut to toggle guides On/Off is **[ALT + W]**.

□ To remove a guide, press **[Shift]** and right-click the guide (when there are no objects selected).

NODE EDITING

When node editing a polygon or polyarc object, clicking the fill region of another object will switch node editing to the other shape. When node editing an object that overlaps another object, hold the **[ALT]** key to prevent the accidental selection of the underlying object.

THE NODE PALETTE

When editing a polygon or polyarc object, pressing the right-mouse button will access the **Node Palette**, which provides commonly used tools for changing node type, joining and breaking nodes, and setting the start point and direction for routers and engravers.

Please note that since polyarc objects are composed only of curve nodes, the **Node Palette** will not allow you to change the node type for polyarcs (Fig. 45).
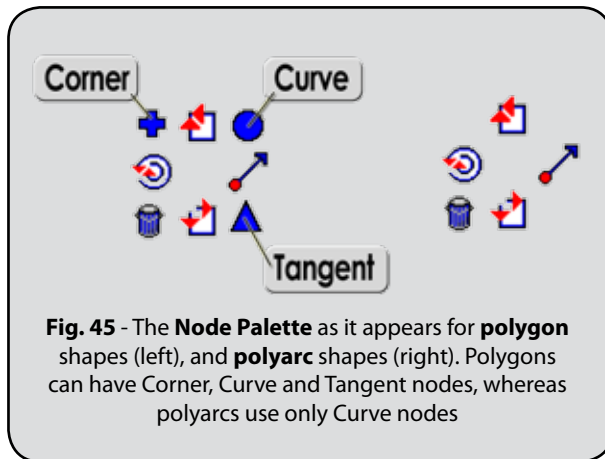
Fig. 45 - The **Node Palette** as it appears for **polygon** shapes (left), and **polyarc** shapes (right). Polygons can have Corner, Curve and Tangent nodes, whereas polyarcs use only Curve nodes

THE ALIGN PALETTE

The **Align Palette** (Fig. 46) provides a quick means of snapping a selected node to the nearest grid line or intersection. In addition:

☐   **Set Origin** will set the grid origin according to the selected node.

☐   **Resize Grid** will resize the grid increments based on the distance between the selected node and the origin.

☐   If necessary, the origin can be reset via **Options** menu >> **Reset Origin**.

☐   The **Grid Size** can also be set from the **General Preferences** dialog.
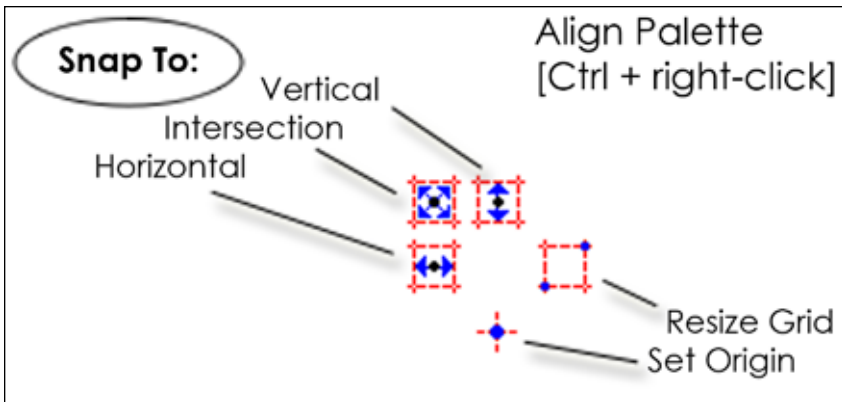
Fig. 46 - Select a node, and then use **[Ctrl + right-click]** to access the **Align Palette**.

POLYGON EDITING HOT KEYS

In addition to the **Node Palette**, the following keyboard hot keys are available when editing polygon objects:

- □ **(A) Add node** – Create node at current cursor location.
- □ **(C) Change node** – Cycle type of selected node. Type will cycle through Corner, Curve, and Tangent.
- □ **(R) Remove** – Delete the selected node.
- □ **(L) Locate origin** – Set grid origin to selected node.
- □ **(G) Grid dimensions** – Set the grid size as the distance between the selected node and the grid origin.
- □ **(S) Snap to intersection** – Move selected node to the nearest grid intersection.
- □ **(H) Snap to horizontal grid line** – Move node to the nearest horizontal grid line.
- □ **(V) Snap to vertical grid line** – Move node to the nearest vertical grid line.
- □ **(J) Join** – Join two nodes with a connecting line.
- □ **(B) Break** – Break contour at selected node.
- □ **[F3]** – Select all nodes.
- □ **[ALT + F3]** – Inverse selects all nodes.
- □ **(U) Alternate Select –** Select every other node of currently selected nodes.
- □ **(D) Deselect** – Clear the current node selection.
- □ **(O) Create perfect circle** – Form nodes into a perfect circle.
- □ **(T) Toggle start point** – Set the start point for routing or engraving this object.
- □ **(K) Click** – Select the node under the mouse cursor.

Polyarc Editing Hot Keys

In addition to the **Node Palette**, the following keyboard hot keys are available when editing polygon objects:

☐ **(A) Add node** – Create node at current cursor location.

☐ **(R) Remove** – Delete selected node.

☐ **(L) Locate origin** – Set grid origin to selected node.

☐ **(G) Grid dimensions** – Set the grid size as the distance between the selected node and the grid origin.

☐ **(S) Snap to intersection** – Move selected node to nearest grid intersection.

☐ **(H) Snap to horizontal grid line** – Move selected node to nearest horizontal grid line.

☐ **(V) Snap to vertical grid line** – Move selected node to nearest vertical grid line.

☐ **(J) Join** – Join two nodes with a connecting line.

☐ **(B) Break** – Break contour at selected node.

☐ **[F3]** – Select all nodes.

☐ **[ALT + F3]** – Inverse selects all nodes.

☐ **(U) Alternate Select –** Select every other node of currently selected nodes.

☐ **(T) Toggle start point** – Set start point for routing or engraving this object.

COLOR PALETTE TIPS

When clicking a color in the Shop or Job Palettes, additional tools are activated by pressing the **[Shift]**, **[Control]**, or **[ALT]** keys. The following table summarizes these modifiers:

- □   **Left-click** – Set fill color of current object
- □   **Right-click** – Set line style color of current object
- □   **[Shift] + Left-click** – Select all objects of that fill color
- □   **[Control] + Left-click** – Disable the color plate. All objects with that fill color will appear as dashed outlines.
- □   **[ALT] + Left-click** – Disable all color plates, except for the plate that was clicked

You can also use these modifiers with the **Sheet Layer** and **Halftone Palettes**.

JOB PALETTE SUBSTITUTIONS

In addition to listing colors, the **Job Palette** can be used to perform global search-and-replace of colors, primers, halftones, etc.

Set all red shapes to a blue fill color
1. Suppose that you have several red shapes
2. In the Job Palette, click the ellipsis button and choose **Color View** from the context menu
3. Note that the red color appears in the Job Palette
4. From the Shop Palette, drag a blue color plate and drop it onto the red Job Palette color

Replace all shades of a spot color
1. Suppose that you have five shapes with different tints of a gold spot color, say 100%, 80%, 60%, 40%, and 20% tint
2. In the Job Palette, click the ellipsis button and choose **Foil View** from the context menu
3. Note that the Job Palette lists the different shades of gold as a single color plate
4. From the Shop Palette, drag a green spot color and drop it onto the gold Job Palette color

SELECTING AND MANIPULATING SHAPES

To select a shape, click within the fill area of the shape. If **Show Fills** is off (under the **View** menu), then select the shape by clicking along its contour.

If the **[ALT]** key is used as a modifier key, then the shape will only become selected by clicking along its contour. This is a useful means of differentiating from between several clustered shapes.

Sweep Selecting Objects

A sweep select is simply a quick means of selecting several objects by surrounding the objects with a marquee. Modifier keys may also be used as follows:

Shift-sweep Select

☐   Add the objects to the current selection.

Control-sweep Select

☐   All objects that fall within bounds of the marquee will become selected. The current editing operation (if any) will be applied to the objects.

Alt-sweep Select

☐   For small objects that are within the area of a larger object, use **[ALT]** + marquee to select the small objects without selecting the larger object.

Appendix B

Feature Locator

In This Section…
- □ Workspace Settings and Customizations
- □ Line Art and Vector Shapes
- □ Text Editing
- □ Importing and Exporting File Types
- □ Color Palettes
- □ Image Creation and Editing
- □ Design Layout and Editing
- □ Printing
- □ Engraving

This appendix shows how to locate specific features in VisionPro. To use this list, locate the VisionPro feature name that you want (listed in alphabetical order), and then use the sequence that is given with that feature. For example, features for customizing the grid would be listed as follows:

Grid Lines (change between lines and dots)
Options menu → Grid → Show Grid as Lines

Grid Size
Options menu → VisionPro Setup → General Preferences → Grid Size

Workspace Customizations

Keyboard shortcuts
Options → Customize Shortcuts

Warning dialog reset
Options → VisionPro Setup → General Preferences → Reset

Multiple VisionPro Windows

Enable multiple windows
Options → Multiple Instance

Multiple windows – Close
File → Close

Multiple windows – Close All
File → Close All

Plate Size

Plate size
Layout → Plate Size

Plate Size outline On/Off
View → Show Plate

Snap to plate size
Options → Snap to Plate

Create plate shape
Layout → Plate Object

Line Art and Vector Shapes

Basic Shape Creation
Tools toolbar → Shape Tools

Clip art shapes
Layout → Clip Art Viewer

Convert to polyarc / polygon
Arrange → Convert To → Polyarc / Polygon

Combine Shapes
Arrange → Make Path

Sketch Line Art
Tools toolbar → Graphics Edit Tools → Node / Free / Arc Edit

Stretch
Arrange → Stretch

Weed border object
Tools toolbar → Shape Tools → Weed border

Weld tools
Tools toolbar → Weld Tools

Shape Fills

Fill colors On/Off
View → Show Fill

Fill Color
[Left-click] a Shop Palette color

Gradient fill color
Tools toolbar → Stroke and Fill Tools → Gradient Fill

Blend colors between two shapes
Transform → Metamorphosis

Pattern fills using an existing bitmap pattern
Tools toolbar → Stroke and Fill Tools → Pattern Fills

Stroke Width and Tool Diameter

Highlight selected objects
Options → VisionPro Setup → Selection Tool Settings → Highlight selected objects

Show tool paths
View → Show Tool Paths

Show width of tool paths
View → Show Tool Diameter

Hairline shown for line art
View → Show Fill

Add stroke
Tools toolbar → Stroke and Fill Tools → Tool Diameter

Stroke color
[Right- click] a Shop Palette color

Color Palettes

Shop Palette
View menu → Palettes → Show Shop Palette

Edit Color
<Double-click a Shop Palette color >

Create Custom Color
Shop Palette context menu → Custom Color Creator

Manufacturer Palette
Shop Palette context menu → Open Manufacturer Palette

TEXT EDITING

Install Font
File → Install → Fonts

Create text
Tools Toolbar → Text Tools → Text Compose

Text To Graphics
Arrange → Text To Graphics

Fit Text To Arc
Transform → Fit Text To Arc

Kern a selected text shape
Tools Toolbar → Text Tools → Text On-Screen Kerning

Meld script letters into single shape
Tools toolbar → Weld Tools → Basic Weld

Remove slanted text
Edit Text → [Left-click] Font Slant Degree button

SPELL CHECK

Spell check all text shapes
Tools Toolbar → Text Tools → Spell Check

Spell check current text shape
Edit Text → Spell Check

IMAGES AND BITMAPS

Convert line art to bitmap
Transform → Render To Bitmap

Change Bitmap Color Mode
Image → Mode

Clip Bitmap to Line Art
Position shape over bitmap → Select both objects → Arrange menu → Clipping

Crop Background of Bitmap
Image → Fluid Mask (if Fluid Mask has been purchased)

Color Adjustments
Image → Color Adjustments (e.g., Levels, Brightness, etc.)

Image editing
Tools toolbar → Scan Tools → AccuScan

Image menu filters
Image → Filters (e.g., Blur, Sharpen, Noise, Stylize)

Image Size and Resolution
Image → Image Size

Posterize image
Tools toolbar → Scan Tools → AccuScan → Posterize Region

Trace image into line art
Tools toolbar → Scan Tools → AccuScan → Trace

PLUG-INS

Plug-in activation
Image menu → Options → Plugin Paths
<Plug-ins appear under Image menu after their install location has been specified.>

Plug-in foreground and background color (used by select plug-ins)
Image → Options → Set Foreground Color

Plug-in install locations
Image → Options → Plugin Paths

CLIPPING PATHS

Clipping path
Arrange → Clipping → Clipping

Clipping path clear
Arrange → Clipping Clear

IMPORTING, EXPORTING, LINK TO FILE

Export Images
File → Export (e.g., AI, EPS, etc.)

Export Line Art and/or Images
File → Export Image (e.g., BMP, JPEG, TIFF, etc.)

Export to PDF
File → Publish to PDF

Import a CDL file into current workspace
File → Import

Linked Images - Save all linked images within CDL file
File → Save Embedded File

DESKTOP SCANNERS

Scan an image
File → Acquire Image → Acquire

Scan an image as line art
File → Acquire Image → Acquire Vector

Scanner – Choose scanner
File → Acquire Image → Select Source

Layout

Alignment
Layout → Arrange and Distribute → Alignment

Badges
Layout → Badges

Group
Layout → Group

Group Viewer
[Double-click] a group of objects

InstantReplay
Options → Use InstantReplay

Move shape above all other shapes
Arrange → Order → [To Front, To Back, Forward, Backward]

Move shapes above/below each other

Layout → Sequence → Sequence By List

Nesting
Arrange → Block Nesting

Template file editing
File → Edit Template

Template text fields
Layout → Templates

Grid Settings

Grid – Objects snap to grid On/Off
Options → Grid → Snap to Grid

Grid origin position
Layout → Plate Size → Origin Selection

Grid origin reset
Options → Reset Grid

Grid visible On/Off
View → Show Grid

Grid width and height
Options → VisionPro Setup → General Preferences → Grid Size

Snap to grid
Options → Grid → Snap to Grid

GUIDELINES

Guides creation 1
[Right-click] a ruler

Guides creation 2
[Shift] + [Right-click] an object handle

Guides deletion – all guides
Options → Guides → Remove All Guides

Guides deletion – one guide
[Shift] + [Right-click] an existing guide (no objects selected)

Guides editing 1
Options → Guides → Edit Guides

Guides editing 2
[Right-click] an existing guide (no objects selected)

Guides locking
Options → Guides → Edit Guides → Lock Guides

Guides visible On/Off
Options → Guides → Use Guides

Snap to guides
<Automatic for visible guides>

Rotary Engraving

Contour cut objects
Engrave → Contour Cut

Add tool paths
Engrave → Create Tool Path

Tools toolbar → Tool Path Tools

Engrave preview mode
Engrave → Output

Output a rotary engraving job
Engrave → Output → Cut Toolbox toolbar → Engrave

Rotary Machine Configuration
Engrave → Engraving Defaults

Machine limits
Engrave → Engraving Defaults → Setup → Engraver tab → Machine Limits

Machine origin
Engrave → Engraving Defaults → Setup → Engraver tab → Options

Feeds and speeds
Engrave → Tool Options

Origin Jog
Engrave → Engraving Defaults → Origin Jog

Port setting for machine
Engrave → Engraving Defaults → Setup → Port tab

Laser Engraving

Laser Engraver Configuration
File → Print → Setup

Output a laser engraving job
File → Print

Prepare image for laser engraving
Transform → Photo Laser

INDEX