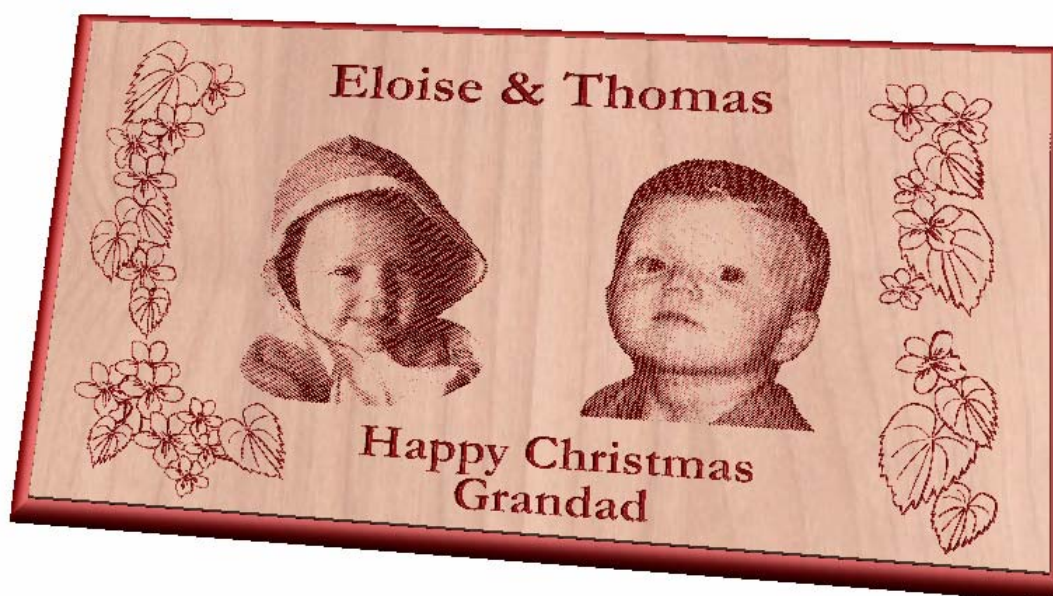# Getting Started with

VCarvePRO

Tutorial 4
Intermediate Level

Working with PhotoVCarve files

Vectric

VCarve Pro

Disclaimer

All CNC machines (routing, engraving, and milling) are potentially dangerous and because Vectric Ltd has no control over how the software described in this manual might be used. Vectric Ltd or any associated Resellers cannot accept responsibility for any loss or damage to the work piece, machine or any individual, howsoever caused by misusing the software. Extreme care should always be taken and the output from the software thoroughly checked before sending it to a CNC machine.

The information in this manual may be subject to change without any prior notice. The software described in this manual is supplied under the terms and conditions of the software license agreement and may only be used in accordance with the terms of this agreement.

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Introduction

This **Intermediate Level Tutorial** explains how designs from PhotoVCarve can be imported and added to VCarve Pro projects. The notes assume that you understand how to select, draw text and calculate toolspaths, and only covers the key points required to import toolpaths from PhotoVCarve.

We hope you enjoy using the software.
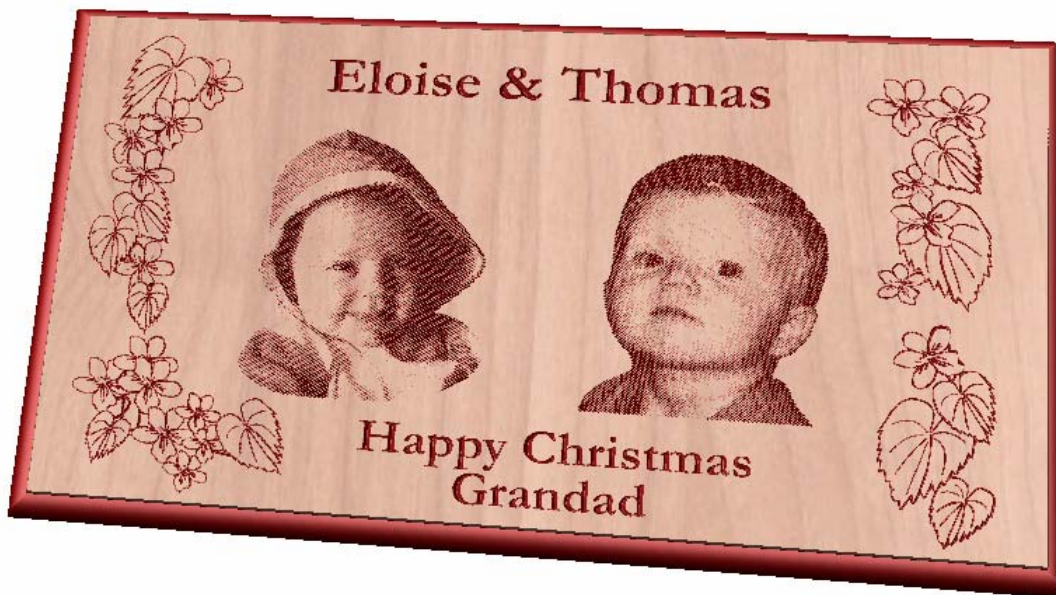
Permanent Photograph engraved into wood.

Getting Help

If you need assistance when using the software there are 5 primary places to look.

1. **Program Help File** - From the Main menu select Help

2. **Video Tutorials** - Can be downloaded from the Vectric website.

3. **User Forum** - The Vectric user forum at www.vectric.com/forum is a very useful resource for information on VCarve Pro along with materials, cutters etc. and also to share knowledge and experiences.

4. **E-mail Support**: - The Vectric Support Team at **support@vectric.com**

5. **Frequently Asked Questions (FAQ)** - The support area on the Vectric web site at www.vectric.com maintains a list of the most frequently asked questions along with the answers.

Watch the supporting tutorial videos

There is a video file for this tutorial.

View Controls

The View Control options available when working in the 2D Design and 3D Preview windows are,

2D Design Window

	Zoom Interactive	Mouse with Middle Wheel – Push / Pull
	Zoom Box	Click top left corner Click bottom right corner
	Pan	Click and hold the Left mouse button – Esc to cancel **Shortcut**: Click and drag the **Middle** mouse button
	Zoom Extents	Zooms to show all vector geometry in the 2D window
	Zoom Selected	Click to select an object or objects Zooms to the bounding box of the selections

(i) Mouse with Middle Wheel can be used to interactively zoom in / out.

3D Window

	3D Twiddle	Click and drag **Left** mouse button in the 3D window
	Zoom	**Right** mouse button – Push / Pull Mouse with Middle Wheel – Push / Pull
	Pan	Click and drag **Right** mouse button + **Ctrl** Click and drag **Right** and **Left** mouse button
	Plan View	Looks directly down the Z axis onto the design in 3D window
	Isometric View	Shows the model in a 3D isometric view in the 3D window

(i) Pressing **F2 & F3** will toggle between displaying the **2D & 3D windows**

We recommend that you watch the **5 minute Video** for this Tutorial before proceeding.

The estimated time needed to complete this tutorial is around **10 minutes**.

Introduction

This tutorial will explain how 3D toolpaths from the PhotoVCarve software can be imported into VCarve Pro and added to an existing design. The finished picture frame shown below in Figure 1 is approximately 20" (510mm) wide by 12" (300mm) high. This design is based on 2 different photographs saved using PhotoVCarve.

For more details on **PhotoVCarve** see **- www.vectric.com**

Important   The 2 photographs have been opened and sized to around 6" x 6" using PhotoVCarve and appropriate toolpaths calculated and the finished files saved.

Important - The 3D toolpaths cannot be scaled once imported into VCarve Pro. You must set the correct for the 3D designs before importing them.

    0.25" (6mm) diameter 60 degree Engraving cutter for the PhotoVCarve toolpaths

    1/4" (6mm) diameter End Mill cutter to cut around the frame

Figure 1. The finished picture frame

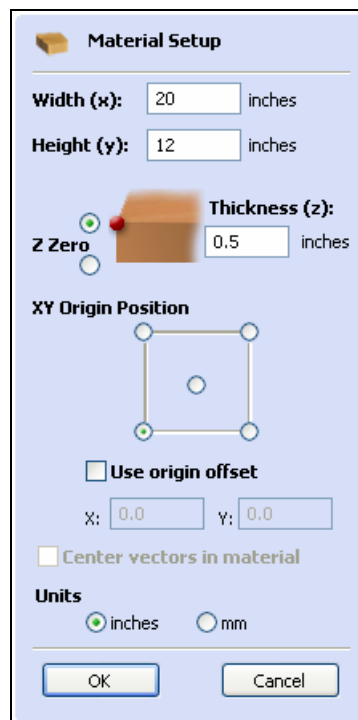The key stages in preparing toolpaths for the picture frame shown above are,

1. Create a New job at the required size and material thickness
2. Import the PhotoVCarve designs and position as required
3. Add Text and Import the flower decoration and VCarve the detail
4. Profile a decorative border or a simple cut out toolpath
5. Preview the completed job
6. Save the Toolpaths

1. Opening the Vector Clipart Design

The vector artwork can be directly opened and the material size specified.

1. From the **Startup Tasks** tab toolbar click on the **Create a New file** icon and complete the **Material Setup** form with the width, height and thickness required for this sign, as shown below.

Material dimensions are 20" wide x 12" high x 0.5" thick

The **Z Zero origin** for setting the datum for the tool is on the **Material surface**.

The **XY Origin** will be the bottom **Left corner** of the job.

Make sure the Units are set to be in **Inches**

2. Click the **OK** button and the blank job is drawn in the 2D Window.
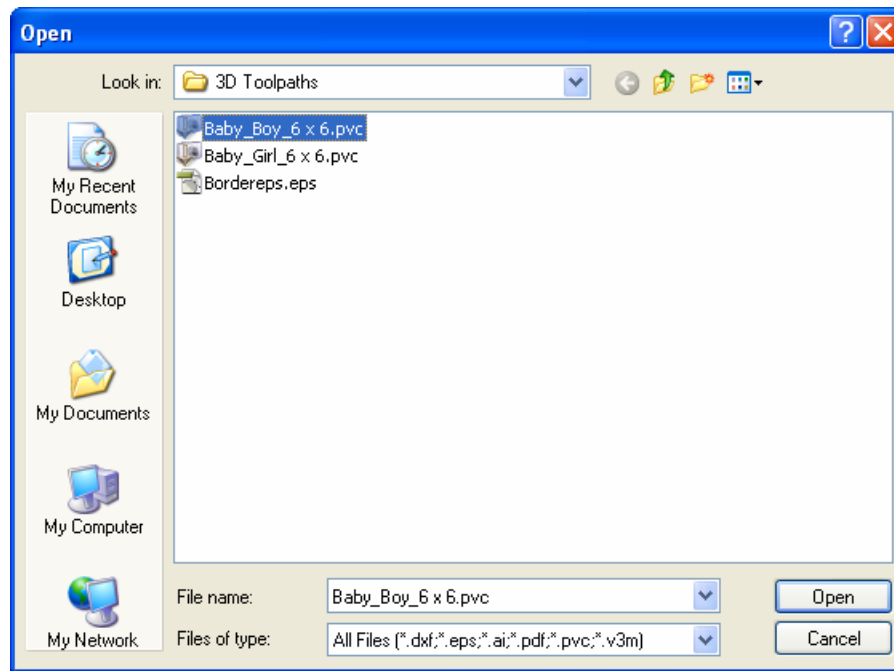
2. Import PhotoVCarve designs

The design

First select the vectors to be v-carved.

3. From the .File Operations tools select the Import from a File icon.

Select the PhotoVCarve file you wish to place on the picture frame.

7. A Grayscale image of the design appears in the 2D Window.

8. Click to **Left mouse Twice** on the grayscale image to select and the image turns a **Light Blue**.

   Click and Drag the design into the correct position or use the **Alignment Tools.**

Multiple PhotoVCarve designs can be imported into a single VCarve Pro design and in this example we are going to add a second design.
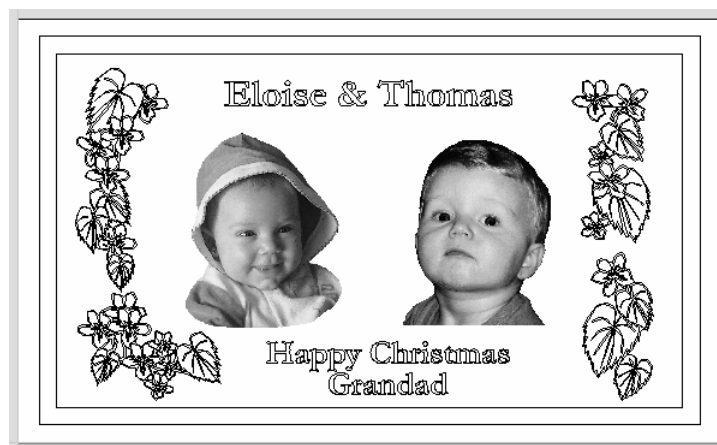
The PhotoVCarve design can be moved, rotated and mirrored as required. For example, this little boy is facing the wrong way, so the Mirror tool can be used to correct this.
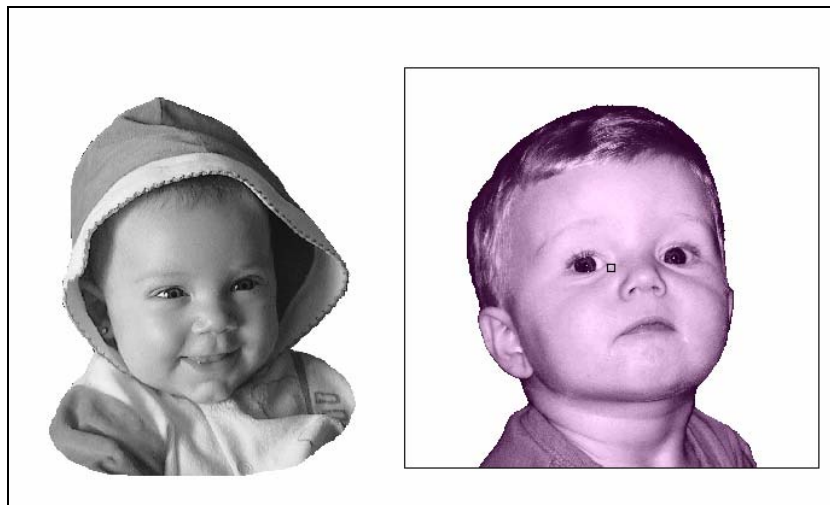
9. Click the Mirror ⟨|⟩ icon and Flip Horizontal option ⊩⊨ [Flip Horizontal]

10. Next add the Text and any additional decoration b either importing or drawing in the software.

11. Click the **Switch to Toolpaths Tab** icon. This closes the Drawing Tab and opens the Toolpaths Tab on the right side of the interface. The Toolpaths for the 2 imported PhotoVCarve designs are already in the Toolpath List.

The **- P** in the filename indicates these are PhotoVCarve Toolpaths

12. Click on the **Setup Material** icon and specify the **Rapid Clearance Gap** (the height above the job that the tool can move at maximum feedrate).
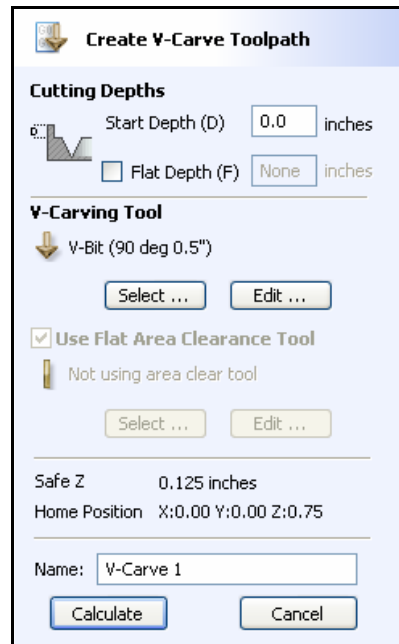
Enter **0.125"** for the Gap and **0.750"** for the Home Z height as shown below.
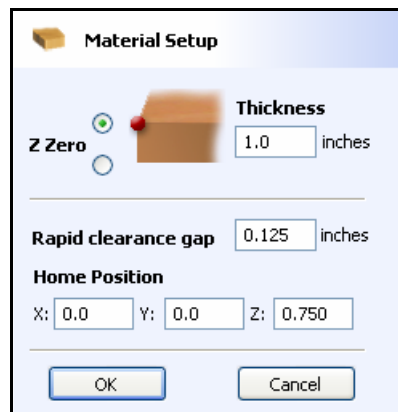
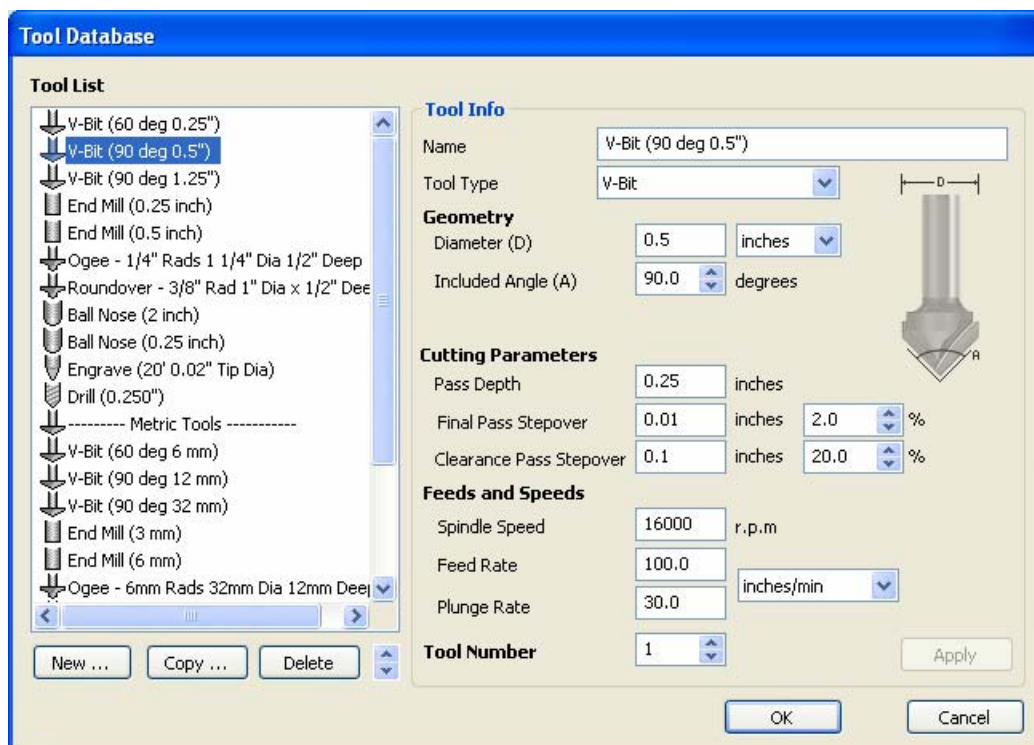**Note** the Z Zero is set to the top surface of the material.

13. Click the **OK** button.

14. Click the **Create VCarve Toolpath** icon and complete the form as shown below,

Click the **Select button** and choose the V-Bit tool from the Tool Database.

In this example we are using a **0.5" Diameter – 90 Degree included angle V-Bit tool**.

The feed rates should be set to suitable values for your machine and the material being cut.

A unique name can be entered or simply left as the default.

15. **Select** the **decoration** and **text** to carve or engrave and click the **Calculate** button and the V-Carving Toolpath will be calculated. The 3D Window and the Preview form are automatically opened.

16. Click the **ISO View** icon and the job + toolpath will be shown as below.
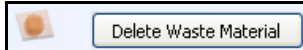

17. The name of the calculated toolpath appears in the Toolpath List.

18. Calculate any additional toolpaths such as a Molded Edge form or a simple cut out using the Profile Toolpaths options.

   In this example a **Roundover** cutter has been profiled around the border of the design followed by a **1/4" End Mill** to cut the framed picture from the material.
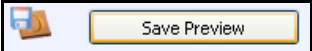
4. Previewing the Job

   A simulation of the toolpaths cutting into the material can now be shown in the 3D Window

19. Click the **Preview All Toolpaths** icon and each tool will be shown cutting into the material.

Note Click the **Delete Waste Material** icon to remove the outer material.

20. Experiment with different **Material types** and **Fill colors** to display the Preview image in the material that the job will be routed from.

21. When the panel looks the way it should, click the **Save Preview** [Save Preview] icon and save the image to a file so it can be printed or e-mailed etc.

5.   Estimate Cutting Times and Save Toolpaths

22. The Toolpaths by clicking the Save [icon] icon.

23. Click to select each toolpath in the **Toolpath List** and **Save** each file with a new name.

24. If you have a CNC machine that has an **Automatic Tool Changer** (ATC), each toolpath must e specified using a different Tool Number before the toolpaths can then be saved into a single file.

25. The machining times can be seen by clicking the **Estimate Machining Times** [icon] icon

Important   It is very important that the toolpaths for ATC machines have different tool numbers and are saved in the correct sequence. Use the Arrows on the right side of the Toolpath list to order the toolpaths.

Note: This tutorial is for learning purposes only and the toolpaths cannot be saved from the Trial version of VCarve Pro