Fcarve

F-Engrave Manual. To use a true type font file TTF you need to put the. More setup info is here: F-Engrave Setup. Reading the settings from previously saved g-code files only works if the "Suppress Comments" option was not selected in the "General settings" when the g-code file was saved. Example Using python script with preinstalled python distribution python f-engrave-XX. Keyboard Shortcuts F1 Open the Help dialog box. Page Down Zoom out from the center of the display window. Hold the left mouse button down and move the mouse up or down. Right Mouse Button Pan. Hold the right mouse button down and move the mouse. Mouse Scroll Wheel Depending on the operating system this may scroll the font list box. Configuration File config. If the file is found it is read and all of the F-Engrave options are set according to the settings saved in the config file. F-Engrave looks for the config file in the current directory and in the users home directory the default save directory. The config file can be named "connfig. Only the first config file found is read. To create a config file with your preferred options for startup just open F-Engrave and change the settings to your liking and save a configuration file by using the "Configuration File" "Save" button in the general settings window. If you are not using the precompiled windows executable you could also just edit the settings in the. To preview what engraved text this should be set equal to the diameter of the cut that will be made on the CNC machine. When the V-Carve option is selected this does not have any effect on the displayed line thickness. Circles will become ovals Char Spacing The space between characters F-Engrave uses constant character spacing. The space between all characters are the same. The character spacing is determined as a percentage of the maximum width of the characters in the currently selected font. Word Spacing The space between word or the width of the space character. This is determined as a percentage of the maximum width of the characters in the currently selected font. Line Spacing The vertical spacing between lines of text. This is a multiple of the text height previously input. A vertical spacing of 1. Justify Justification lines up the Left, Right or Center of multiple lines of text. This option has no effect on a single line of text. Origin The origin determines the relative location of the g-code x and y zero location. The current location of the origin is displayed in the display window as a red and green lines. The default location of the origin is the zero position of the first character. When using the text on circle options the default origin position will change to the center of the circle which the text is being placed on. Flip Text or Flip Image Flip the text or image about a horizontal axis. This is the same a Mirror Text except is it about the horizontal axis Mirror Text or Mirror Image Mirror the text or image about a vertical axis This is the same as Flip Text except is it about the vertical axis Circle Radius The circle radius is the radius of the circle that the text in the input box is placed on. If the circle radius is set to 0. Outside Circle Select whether the text is placed so that is falls on the inside of the circle radius or the outside of the circle radius. Top of Circle Select whether the text is placed on the top of the circle of on the bottom of the circle concave up or concave down. If the text angle is set to something other than 0. Feed Rate Specify the tool feed rate that is output in the g-code output file. Z Safe This is the z location that the tool will be directed to prior to any rapid moved. Cut Depth Simply the depth of the engraving cut. This setting has no effect when the v-carve option is selected. The current font directory can be changed in the settings dialog. Show All Font Characters This option temporarily shows all of the font characters available in the currently selected font file. Executing this command can result in long calculation times. Recalculate Recalculate the display for all of the settings to preview the result. Everything is recalculated by this command except the V-Carve calculation. Input Text This is the text that will be displayed in the preview box and eventually exported to g-code. Status Bar The status bar provides various bits of information when working with F-Engrave. One of the most useful is the bounding box size. When the recalculate button is pressed the overall size of the engraving or v-carving will be calculated and displayed in the status bar in terms of a bounding box size with a width and height. This is very useful if you have a fixed area in which to engrave. This option affects the displayed units and the units output in the g-code. X Offset and Y Offset On the main input window the "origin" setting determines the location of the g-code x and y zero location relative to the text or DXF design. The "X Offset" and "Y Offset" values are additional modifications to the zero location. The offsets are added to the g-code output values for x and y. Arc Angle All arcs, circles and splines are reduced to individual straight line segments by F-Engrave. The "Arc Angle" determines how many line segments are used to describe these curved entities. If the "Arc Angle" is set to 90 degrees a circle would be represented by a square 90 deg corners. If the angle is set to 60 degrees a circle would be represented by a hexagon. The lower the angle the more accurate the representation at the cost of computing time and potentially CNC performance Accuracy New in version 0. This is setting can be increased to reduce unnecessary Z moves when the end point of one line and the start point of the next line are very close but they are not coincident. This setting also reduced the sensitivity to DXF splines with loops at sharp corners that would cause

bad v-carve paths I will eventually add an example of this here G Code Header The text that is entered in the G-Code header entry box is added to the beginning of the g-code commands in the F-Engrave output file. The commands are interpreted by the CNC machine as entered. The files in the searched directory that have the correct extensions are displayed in the Font Files list box. Opening a DXF file using the menus will automatically change the current font directory to the directory containing the DXF file that was opened. The first is the maximum height of the characters used in the input box. In this case the maximum height of the characters in the input box is used to determine the height of the characters. The second option is "Max All" when this is selected the maximum height of all of the characters available in the font file is used to determine the height of the text. When "Max All" is used it is possible to have an output text height less than the height input in the main window because the character with the max height may not be used in the engraved text. If the text placed on a circle a bounding circle is added in lieu of a bounding box. The gap between the text and the bounding box is set in units of length in or mm. This input has changed in version 0. Apparently the actual angle on bits may not match the angle specified by the manufacturer. V-Bit Diameter The maximum diameter of a cut that will be generated. Sub-Step Length The v-carving algorithm steps along the font or DXF outline and performs tool location and depth calculations at a fixed interval. The fixed interval is the "Sub-Step Length" a large substep length will increase the speed of the v-carve calculation but could result in a more faceted looking v-carve. Reducing the "Sub-Step Length" too much can cause excessive calculation time and reduced CNC machine performance due to excessive short G1 commands. If in doubt start with a larger step size and reduce the value until the results seem reasonable. Flip Normals V-Carve Side F-Engrave assumes that the font or image DXF file creates closed paths running clockwise around the shape to be carved and defaults to carving the internal space of the character. The flip normals reverses the processing of the character or DXF shape. This results in the outside of the character or DXF shape being removed. Plot During V-Carve Calculation Enable or disable plotting of the v-carve calculation progress during the v-carve calculation. This option will increase the speed of the calculation process without affecting the g-code output. F-Engrave will always leave the Finish Pass Stock to be removed during the final pass even if your Max Depth per Pass is set to a value deeper than the max depth of cut for a given design. Simply set this to the diameter of the cleanup bit that will be used. Cleanup Cut Step Over This is the step over for the cleanup cuts. This number is entered as a percentage of the cleanup bit diameter. Cleanup Cut Directions These check boxes determine what type of tool paths are used with the cleanup bit. P: Cut the perimeter of the area to be cleaned up X: Cut in the X direction Y: Cut in the Y direction V-Bit Cleanup Step This is the step over to be used when cleaning up areas that cannot be reached with the cleanup bit. The cutting is to be performed using the same V-bit that was used for cutting the main v-carve design. This step over is entered as the step distance in the currently selected length units. After the area is determined the cut paths for cleaning up the design are calculated based on the parameters set below. The area calculation will only be performed one time after the v-carve calculation is completed. F-Engrave will remember the previous area results and use them until a new v-carve calculation is performed. For more information refer to the Potrace documentation Turn Policy Tells Potrace how to resolve ambiguities in path decomposition. Curve optimization reduces the time required to perform the v-carve calculations. Opt Tolerance Curve optimization tolerance. Known Issues - F-Engrave outputs a G1 command for every calculated step when performing v-carving. If the step size is set small the CNC machine will never reach the input feed rate if it cannot accelerate to the input speed over the step length. There are a lot of different entity types in DXF files not all of them are supported. Some TTF files have embedded images instead of vector graphic representations the TTF fonts with embedded images are not supported. Example Using python script with preinstalled python distribution. Open the Help dialog box. There is nothing in the help except a reference back to the web page and my e-mail address. Recalculate This performs the same functions as the recalculate button on the main page. When F-Engrave starts up it looks for a file named "config. Character height of a single line of text. F-Engrave treats the DXF file data as a character. Thickness or width of lines used when displaying text. Circles will become ovals. The space between characters F-Engrave uses constant character spacing. The space between word or the width of the space character. The vertical spacing between lines of text. Justification lines up the Left, Right or Center of multiple lines of text. The origin determines the relative location of the g-code x and y zero location. Flip the text or image about a horizontal axis. This is the same a Mirror Text except is it about the horizontal axis. Mirror the text or image about a vertical axis This is the same as Flip Text except is it about the vertical axis. The circle radius is the radius of the circle that the text in the input box is placed on. Select whether the text is placed so that is falls on the inside of the circle radius or the outside of the circle radius. Select whether the text is placed on

the top of the circle of on the bottom of the circle concave up or concave down. Simply the depth of the engraving cut. This option temporarily shows all of the font characters available in the currently selected font file. This button executes the V-Carving feature of the program. Recalculate the display for all of the settings to preview the result. This is the text that will be displayed in the preview box and eventually exported to g-code. The status bar provides various bits of information when working with F-Engrave. Set the units used by F-Engrave to inches or mm. On the main input window the "origin" setting determines the location of the g-code x and y zero location relative to the text or DXF design. All arcs, circles and splines are reduced to individual straight line segments by F-Engrave. The lower the angle the more accurate the representation at the cost of computing time and potentially CNC performance. The accuracy setting determines the maximum distance between two points that are considered coincident. This setting also reduced the sensitivity to DXF splines with loops at sharp corners that would cause bad v-carve paths I will eventually add an example of this here. The text that is entered in the G-Code header entry box is added to the beginning of the g-code commands in the F-Engrave output file. M3 S Spindle start at M7 Turn mist coolant on if it is available. The text that is entered in the G-Code Postscript entry box is added to the end of the g-code commands in the F-Engrave output file. The height of the text can be determined one of two ways. This option adds a box around the output text. The angle of the v-cutting bit that will be used. The maximum diameter of a cut that will be generated. The v-carving algorithm steps along the font or DXF outline and performs tool location and depth calculations at a fixed interval. F-Engrave assumes that the font or image DXF file creates closed paths running clockwise around the shape to be carved and defaults to carving the internal space of the character. Enable or disable plotting of the v-carve calculation progress during the v-carve calculation. The Finish Pass Stock is the amount depth of material that will be left for the final pass of cutting. This sets the diameter of the cleanup bit. This is the step over for the cleanup cuts. These check boxes determine what type of tool paths are used with the cleanup bit. This is the step over to be used when cleaning up areas that cannot be reached with the cleanup bit. These check boxes determine what type of tool paths are used with the V-bit. Calculate the area that requires cleanup. Description These option are direct inputs to Potrace. For more information refer to the Potrace documentation. Is it worth it? Basically, what can vcarve do that easel cannot? Desktop as well. I started with cut2d, then upgraded vectric lets you upgrade for the difference. Purchasing Vcarve is like discovering you have an extra arm that you never knew about. Easel is great for getting started, but once you understand how CAD works you will really appreciate the features that Vcarve offers. Just having true Vcarving is almost worth the cost by itself. You can with traditional end mills. Fusion just added support for vcarves, but the abilities are limited. Fusion will do those features with straight endmills, but not V bits. At least not to my knowledge. The bad part about Fusion is the learning curve and the possibility that you spend countless hours learning it and in 6 months or a year the decide to stop offering the free license. I understand that not all can afford to purchase expensive software. It could be okay for many. But, watching some online videos, like on YouTube, it was clear to me that Aspire was the way to go. So, I paid the difference and upgraded. In my many years of dealing with software, I have found that Vectric software Aspire is one of the best in terms of features and reliability. Newbies might start with the demo and then decide how, or when, or if, to upgrade. Vcarve vs. Easel X-Carve. Any opinions, experiences, product knowledge? Pretty sure you can do a lot of that with fusion Well i had mentioned fusion as an alternative before your post. Today at 10 central there is an Easel Live talking about the latest enhancements. Do you have link to Easel live. Design, import, and carve from a single program with Easel, our free CNC software. Upgrade to Easel Pro for advanced business features. Easel is the only software you need to design and carve. Every Easel project has a shareable link, allowing you to become part of the maker community with just one click. With custom design tools, file import options, and interactive apps, Easel can handle projects both simple and complex. Learn which features are currently available in Easel and Easel Pro, then decide which software is right for you. Easel Classes is a community learning experience, helping you develop new skills to apply to your projects. Open to makers of all skill levels, share your designs in exchange for Inventables rewards. A free Easel account is all you need to get started. Call us: Email: help inventables. What is it? Easel is a web-based CNC software platform that allows you to design and carve from a single, simple program. Who is it for? Easel is incredibly easy-to-use, and makers of all skill levels utilize it every day. What does it cost? Easel is completely free. Create your free account. Made in Easel. Accelerate your business with Easel Pro. Easel Pro is a subscription upgrade to our Easel software. The features optimize for a more efficient workflow, saving business owners time and helping them make more money. How much does it cost? Carve like a pro. Made in Easel Pro. Need some inspiration? Check out all the projects created by our

community of makers. See more projects. Social Every Easel project has a shareable link, allowing you to become part of the maker community with just one click. Versatile With custom design tools, file import options, and interactive apps, Easel can handle projects both simple and complex. See the list. See Their Story. Easel Classes Easel Classes is a community learning experience, helping you develop new skills to apply to your projects. See Easel Classes. See project kits. Maker challenges Open to makers of all skill levels, share your designs in exchange for Inventables rewards. See challenges. Ready for the next step in your maker journey? Turn your hobby into a business with X-Carve and Easel Pro. Experience the easiest, most robust, affordable CNC machine on the planet. Go from concept to design to product in minutes. No CNC knowledge required. Purchase the X-Carve with 3 years of Easel Pro software for a low monthly price. Quit your day job and launch your dream job with the world's easiest, most affordable desktop CNC machine. Call or email a real human with your questions, comments, and concerns. Quickly prototype a new idea or iterate on the spot to improve an existing design. When you're ready to sell, the X-Carve's durable rails, robust X-Controller, and reliable stepper motors enable you to scale production. Our free software, Easel, makes it easy to fulfill order demands. Customize your designs and rapidly carve products in batchesâ€"with precise accuracy. Forget complicated softwareâ€"Easel simplifies the design process with intuitive tools and interactive apps. Call us: Email: help inventables. See Pricing. Everything you need to bring your ideas to life. Power your business with X-Carve Quit your day job and launch your dream job with the world's easiest, most affordable desktop CNC machine. Save time Quickly prototype a new idea or iterate on the spot to improve an existing design. Repeatability Our free software, Easel, makes it easy to fulfill order demands. Made with X-Carve. Gorgeous Laptop stand. Picciuto Guitar Body. Technical Specs. Work Area mm rails X-axis: mm Y-axis: mm Z-axis: 65mm. Machine Footprint mm rails X-axis: mm Y-axis: mm Z-axis: mm. Spindle Model: DeWalt Amps: 7. Have questions about X-Carve? User Manual. Community Forum, US Support Team. Start creating with the easiest 3d carving software Forget complicated softwareâ€"Easel simplifies the design process with intuitive tools and interactive apps. V-Carving Tutorial. To successfully use this tutorial F-Engrave and Potrace need to be installed and working. Help installing these programs is available at: F-Engrave Setup. Any image that is black and white or that you can convert to black and white. The input image should be converted to black and white using any image editing software. If pixel values other than black and white appear in the input, they will be converted to black and white within F-Engrave Potrace actually does the work. Color or grayscale picture will produce a result but the internal conversion does not allow you to preview the true input. Change the mode to image [Settings - Image Mode]. Adjust the size of the image. This is accomplished by changing the Image height property. The resulting image size is displayed in the status bar. Change the Feed Rate and Z Safe values to values that are suitable for your machine and material. The defaults are pretty safe for most operations when using English units increasing the Feed Rate and decreasing the Z Safe can help improve the speed of the carving process. Since we will be v-carving, select V-Carve mode at the bottom of the window. The Origin option can be modified to change the zero position of the g-code output if desired. The current position of the origin is displayed on the preview window by red and blue lines shown in the lower left in the image below. After changing settings on the main screen click the Recalculate button to update the display. The V-Bit Diameter can be set to diameters less than the actual cutting bit diameter to limit the depth of v-carving. All of the necessary settings have been changed. Executed the V-Carve calculation by clicking the Calculate V-Carve button on the v- carve settings window. As the calculation is performed the display will update and a status window will give an estimate of the time remaining. When the calculation is complete the blue areas will be replaced by black and the tool paths will be shown as white lines. This process can take a long time for complex designs. The areas that will be touched by the v-bit are shown in black and the tool paths are shown in white. As seen in the screenshot some areas of the image have not been carved. These regions can be cleaned up using the cleanup section of the V-Carve Settings window. Cleanup Cut Diameter : Diameter of the cleanup bit to be used. Cleanup Cut Step Over : Step over distance for the cleanup cuts. Entered as a percentage of the bit diameter. Cleanup Cut Directions : The cut direction to use for the cleanup bit, "X" lines in the x-direction, "Y" lines in the y-direction, "P" cut the perimeter of the uncut area. V-bit cleanup is cutting the tight corners that the cleanup bit cannot reach. The v-bit specified for v-carving is used for this operation. Entered as a distance. Cleanup Cut Directions : The cut direction to use for the v-bit cleanup, "X" lines in the x-direction, "Y" lines in the y-direction, "P" cut the perimeter of the uncut area. The cleanup calculation can now be executed using the Calculate Cleanup button on the v- carve settings window. The first time this button is pressed after a v-carve operation the cleanup areas are calculated. The areas are saved and reused until the Calculate V-Carve button is press again. After the cleanup

calculations are complete the display will be updated. The cleanup g-code and the v-bit cleanup g-code can now be saved using the buttons on the v- carve settings window. Each of the two cleanup operations should be saved to separate files. Don't forget to save the v-carving g-code file from the main window file menu. The saved g-code files can now be run on a CNC machine. To make the second carving shown at the beginning of this document two settings need to be adjusted. First the normals of the image need to be flipped in the v-carve settings window. This changes the side of the image that gets carved so that the white gets carve instead of the black in the image. Second a bounding box is added to the image to limit the amount of material that is removed around the image in the general settings window. A screenshot after all of the calculations are performed for this case is shown below next page. See if you can do similar with your image. Looking closely at the images on the first page reveals that some detail is missing from the carving. The image on the right is clearly missing detail from the eagles feet. The g-code output included these details but the v-bit used to carve the images did not come to a true point. The diameter of the tip is 0. Help installing these programs is available at: F-Engrave Setup Step 1. Select an image to v-carve. Step 2. Convert the image to a format that F-Engrave can import. Step 3. Import the image into F-Engrave 3a. VCarve Pro gives you the power to produce complex 2D patterns with profile, pocket, drill and inlay toolpaths, plus gives you the ability to create designs with v-carving textures as well as import and machine unlimited Vectric 3D clipart or single model files. Includes 2D and 3D Clipart that can be used in your own projects or edited to create new variations. Already have an account? Click Here to Sign in and Download. Download as Guest: Adds the ability to create double-sided projects in the same session. It avoids the need to have 2 sessions, one for each side. Enables the use of a rotary axis also called a 4th axis or indexer. The software has a comprehensive set of drawing tools to let you easily create vectors from scratch or add to imported data. The toolpath options cover all typical 2D routing operations, 2. All toolpaths can be previewed to show just how the part will look when it is actually cut. Scroll back up to the menu. This adds the ability to create double-sided projects in the same session. In the Job Setup dialog, you can pick whether you want to create a single-sided, double-sided or a rotary job. You can change that, retrospectively. Define how you want to flip the material for double-sided projects from the Job Setup dialog. This influences the positioning of the vectors and models so that geometry on each side is created in the appropriate positions relative to the opposite side. You can import the entire model on each side by sliding the slicing plane all the way to the bottom. This is useful when importing models which contain non-convex surfaces, such as, a plate. Where you can create rotary projects and visualize your job in a wrapped environment, with the ability to create and simulate the toolpaths in an auto - wrapped simulation. In the Job Setup dialog, you can pick whether you want to create a single-sided, double-sided job or a rotary job. Define your cylinder dimensions, the orientation of the job, how the 2D view will be laid out, and which axis we're wrapping around. In order to create a toolpath that wraps around multiple times, one can create a long vector at a certain angle. Such a vector is an equivalent to the strip of fabric when it is unwrapped from the roll. Although such a toolpath will exceed the 2D workspace of the rotary job, thanks to the wrapping process during both simulation and machining the toolpath will actually stay within material boundaries. The software has the ability to import full 3D models from third party software for unwrapping in a rotary job, where you can position and orient the model in a rotary view. Not only can you import full 3D models for unwrapping the software also allows for the importing of "Flat 3D" models relief style models that you can position and simulate before cutting. These include options for creating standard shapes circle, elipse, rectangle, polygon and star along with line, curve and arc drawing tools. There is also a powerful tool to create vector textures for panels and backgrounds. These tools can be controlled using typed input to create exact sized objects or can be used dynamically with the mouse to sketch your artwork. The tools also take advantage of the 'snapping' to let you use points on existing objects to 'snap' onto when you are drawing vectors. With the ability to import bitmaps into the software, you can further edit imported images using the 'Edit Picture' tool, this allows you to adjust the visual properties of a selected bitmap, enabling you to adjust the contrast, brightness and gamma of any selected image. Borders of different sizes and radii can also be added to bitmaps for aesthetic purposes. Bitmaps can also be made black and white. The software also has the ability to crop images to any given vector allowing you to remove parts of the image you are not interested in. Image tracing also known as vectorization allows you to take an imported image such as a scanned drawing, graphic design or photo and to convert colors in that to vector outlines. These outlines can then be used as part of your design to create toolpaths or to generate 3D shapes using the modeling tools. The software will import many file formats including jpeg, bitmap, gif, png, tif, it will also extract images from a PDF file. The 'advanced text' tools let you access true type or open type fonts on your PC to

create text outlines for your design. When creating text you are able to see live feedback of the text that you create and edit. The text can be controlled using automatic sizing and layout options. There are also editing tools for fitting text to a curve and interactive text arcing and spacing kerning where the text maintains formatting, allowing you to easily make edits after the text has been created. This text can be dragged dynamically along a curve so you can perfect the placement of your text. Data can be imported from a huge range of other design programs using a variety of industry standard file formats. Once imported, the program has a wide range of tools to make working with this data as efficient as possible. A very important set of tools are those used to identify duplicate vectors and identify and rejoin open vectors. These tools can save an great deal of time when working with poor quality data to get it ready to machine. This feature is very important if you need to share data with a customer in order that they can use it to plan a layout or installation. The dimensioning tools allows you to create a variety of different types of measurements on your drawing. These can be oriented in any direction or fixed horizontally or vertically. There are also options to add angular and arc dimensions. You can control the text height, font number of decimal places and position for each one. Dimensions can be snapped to vectors, guidelines and the corners or mid-points of each side of your work area. Whether your design vectors have been created in the software or imported you have a large choice of editing options to prepare your part for toolpath creation or modeling. Vectors can be easily scaled, moved, mirrored, distorted, grouped, welded, trimmed, filleted, extended, offset, smoothed and joined together. In addition to the editing tools the software also has tools to let you layout parts either in a rectangular array to create a grid of objects or in a circular array to create symmetrical layouts around a center point. When laying out a grid you can adjust mirroring options and shift alternate rows and columns to make more complex layout patterns. Vector shapes can also be pasted along the path of another vector by specifying the distance between each copy or just fitting a specific number on the guiding object. The Layers are a very efficient way to keep your 2D data organized, one of the main uses is to allow you to temporarily hide data you were not currently working with. Layers could also be used to group vectors you might be using to model related shapes in a 3D design to make it simpler to work on a small part at a time. The ability to associate toolpaths with specific layers and types of data means you can create Toolpath Templates which can be assigned to other parts that share the same layer structure. This is particularly powerful for applications like Cabinet Making where different designs can be automatically machined once a template has been set-up. Rulers, Snap Grid and Guidelines help to make vector drawing and 3D part layout much simpler. When combined with Snapping options that automatically detect and snap the cursor to key regions on a design these tools make it easy to create very accurate part. Repeating vector patterns can be quickly created using the 'create vector texture' tool. It's easy to modify the settings to create an infinite number of variations from regular wave patterns through to uneven natural looking grain lines. These vectors can be machined using the profile and texture toolpaths to create decorative wavy texture panels along with wood-grain and sand-blast effects. These can also be projected onto a 3D surface to add even more variation. It reduces the need to create construction geometry, and would be helpful in aligning vectors or nodes. This allows you to add more precision to your shape creation and editing process more easily by allowing typed values while creating geometry. This is supported for creation of circles, ellipses, rectangles, polygons, stars, polylines and when in editing nodes or transforming vectors. The Vector Validator is intended to help find issues with contours after file imports that are stopping tool-path creation such as overlapping contours or intersections. It also indicates zero-length spans. Many of the dynamic component editing tools can be accessed directly from the 3D view. This allows 3D objects to be moved, scaled and rotated. Editing the components in the 3D view makes it quick and easy to see the immediate effect of the changes to the composite model and so reduce the time it takes to create a 3D layout. This feature allows you to define a component level so that it mirrors all of its components in a certain way, based on the mirror type. This allows you to build pleasing symmetrical arrangements with ease. The ability to work on small simple pieces makes it easier to build up the pieces you need to create a complex job. This also gives you the power to continue to edit individual parts of the design as you build it up. This approach is particularly useful if you need to make design changes based on customer feedback. Using the component manager component tree individual 3D objects can be adjusted to change the way they interact with each other within a project. These can be further organized by the use of 'levels' to create sub-assemblies of shapes that first combine with each other before being added to the overall shape of the model. As you make changes to a component the 3D model will update to show you instantly the effects of your choices making it easy to iterate through different design options. The clipart tab provides quick and convenient access to Vectric files containing 3D components or 2D vector artwork. This allows you to easily re-use

previously created shapes in new projects. This tab includes the library browser that allows you to add folders containing 3D components into the software or you can use the local files option that allows you to quickly see the contents of several folders of 3D components in one place. The clipart tab also allows you to access the online clipart that comes free with the software, where the clipart can be downloaded directly from the running software providing you have internet access. The software comes with previews of the clipart you're entitled to, and with internet access you can download the clipart straight into the software for ease of use. The software gives you the choice of whether to display just the contents of the current folder or up to 3 sub-folders as well making it easy to access many models at once. The clipart tab is a great way to browse and select from the free clipart that is included with your purchase. You will find a selection of relief-style clipart pieces, mini projects, and collections to suit every CNC project need. These can be purchased, downloaded and carved as individual models or combined to make more complex designs. Interactively change the size and orientation of imported 3D models. Interactively rotate 3D mesh files into the required orientation for adding to a design. Instantly convert designs from raised models to recessed mold cavities. Easy to use interactive drag and drop, size, mirror and rotate tools allow 3D clipart designs to be edited to instantly produce unlimited design variations. The VCarve download includes a large variety of 2D and 3D clipart files that can be used as is, in your own projects or edited to create your own variations. The files include a mix of formats. The 2D artwork items comes in CRV format including basic shapes, game layouts, moulding profiles, stylized text and more. The 3D files are V3M format. Shapes can be easily scaled, moved, mirrored and grouped. VCarve also allows you to smooth a 3D object. The software also has a tool to Z-slice a part to create separate models if your CNC size, tooling or material limits the depth of part you can cut. The level clipping mode makes it easy to constrain the model you are creating to a chosen boundary. Use vectors to define your boundary and the contents of your level are dynamically clipped so that only what lies inside the vectors is kept. This makes it simpler to assemble different models and allows you to rearrange your components and see the results of clipping in place. Referencing the software to how your CNC will be setup is one of the most important elements of the process. A summary of the material set up is displayed at the top of the toolpath tab allowing you to quickly check the settings before you start calculating toolpaths. Any of these values can be easily adjusted to change the tool reference for its X,Y or Z zero location, move the position of a model in the material, adjust the position where your machine starts from or specify distance to ensure the tool lifts above any clamping that is being used. Using the profiling toolpath strategy, objects can be cut out quickly and efficiently. Simply select the vector shapes you wish to profile, select the tool from the tool database and the software will do the rest. The profiling automatically offsets for the tool radius and sorts nested shapes to ensure that inner shapes such as the center of a letter 'O' are cut before the outer shape so parts are not released from the material before they are cut. Full control of cut direction is offered along with either automatic or manual control of tool entry point for each shape. Profile machining includes production cutting options that ensure parts can be held in place and accurately machined with high quality edges and corner detail. Cut-outs can be done in multiple passes depending on the maximum cutting depth of the tool used and a positive or negative allowance can be specified to either 'under cut' or 'overcut' the shape if required. The number of passes on a cut can be edited very precisely to allow very thin final cuts or to individual add or remove particular cut depths. A separate last pass allowance can be specified for the last pass in a profile toolpath. If this allowance is given, then all but the last pass will be over-cut by the specified allowance with the final pass being the only pass which cuts to the actual edge of the part. This can significantly improve the finish on the cut-edge. The ability to specify that square corners are required is another powerful feature. The profile toolpath is probably the most important toolpath option available. It is used for some of the simplest and also the most complex things you may do with your CNC. The software has been structured to let you customize whether you just want simple options for quick cut-outs or whether you want to access more advanced features to control cutting on particular material. This allows both new and experienced users to decide how much information they need to be presented with when creating this frequently used function. The pocket toolpath makes machining the material away from inside a vector shape efficient and easy to achieve. Just select all the vectors defining the shapes you want to cut and the program will sort the vectors to identify islands automatically and offset the boundaries for the selected tool radius. The 2D pocketing toolpath has the ability to control pass depths very precisely, either automatically based on the tool settings or where required the user can specify any combination of depths for a particular tool. Either climb or conventional cutting directions can be specified in order to produce the best edge finish for your selection of material and cutter. The tool can also be ramped into the job to reduce cutter

stress when entering the material. Output helical arcs in a way that your machine understands. Makes for smoother cuts and smaller file sizes. Helical arcs are like regular arcs when viewed in 2D but where the start z and the end z differ. They are typically found in toolpaths where ramping occurs. Whether you are drilling a single hole or hundreds, just select the vectors representing the holes and the software will drill the center of each vector to the specified depth. The grouping feature makes it easy to associate all vectors for a particular toolpath strategy together so only one needs to be selected. The tool database includes a dedicated drill tool type so that the true tool geometry can be seen in the toolpath previews. As well as a single Z plunge you also have the option to activate peck drilling , which drills to a specified depth, retracts the tool to clear the chips, drills down to the next step, retracts the tool and so on until the required finish depth is reached. V-Carving uses a constant angled cutter that's moved at flowing variable depth to create a 3D carved effect on the job, similar to the way a craftsman would work by hand. The software automatically calculates a path defined by the combination of the angle of the tool specified and the width and shape of the vectors being machined. The extremely fast and robust Vectric VCarving engine handles complex designs with ease providing both fast calculation speed and robust handling of imperfect data. Or optionally using multiple tools for your engraving jobs, reducing both machining time and tool wear. The option to use vector start points lets you choose the positions the tool will enter the material. For some applications this can help reduce the load and as such potential marking of the finished part, created by tool vibration when plunging into a deep area. Another advanced capability is the support for VCarving areas wider than the tool by making multiple clearance passes to achieve the required depth. This is done automatically by the software when the carved area is deeper than the maximum cutting depth of the tool. The Raised Prism machining strategy is prefect for cutting high quality raised lettering and shapes on signs for restaurants, hotels and bars etc. When using this toolpath the software drives the tool along the center of the vector giving you control over the way the tool ramps into the start and end of each selected object. This has many interesting applications outside of just the standard uses you would expect for this type of operation. Perfect for:. Textured panels are often specified by interior designers and architects and textures are also a very useful option for creating backgrounds on dimensional signs. Vectric has a unique approach to generate unique 'hand carved' looking textures which still machine extremely efficiently. Once you specify a tool typically a pointed or round profile then you have various settings you can set to create the characteristics of your texture toolpath. To give these textures a more natural and less machine made look you can set different levels of randomness. The toolpath will replicate the same type of move that would be made by someone using a chisel to carve overlapping strokes into the material. Creating this as a toolpath move rather than as a 3D model will minimize the hand-finishing and also the machining time required to cut this. Textures can also be 'trimmed' to a vector boundary allowing the creation of this type of finish in a background area of a job. This is a look very popular with sign makers using Vectric software. The auto-inlay toolpath options calculate profile cut-out and pocketing toolpaths for parts that need to be assembled to make inlays and inserts. There are two toolpaths which are typically used to machine the 3D parts of a job. The areas that these toolpaths cut is governed by selecting one of the three machining limit boundary options, model boundary, material boundary or selected vector s. Model boundary will use the outer silhouette of the composite model all the 3D components visible in the 3D View at the time of calculation. This means there is no need to create a vector boundary around them for these operations. Material boundary will create a toolpath that completely fills the entire job area. Selected vector s will use any vectors you have selected in the 2D view as the boundary for the toolpath. To remove the majority of unwanted stock as quickly as possible most jobs require a 3D roughing toolpath to be calculated. There are two roughing strategies available z-level and 3D raster each of these has advantages depending on the type of shape being cut. The toolpath also has an option to specify an allowance to leave a skin of protective material on the part for the finish cut to clean up. The tool parameters let you balance the quality of the surface finish with how long the part will take to cut. Depending on the shape of the part there is a choice of raster and offset cutting strategies. Detailed regions can be machined selectively using smaller cutters to ensure the finest of detail on a 3D project is accurately machined. This allows text or other shapes that follow the 3D contours of the part to be efficiently machined onto the 3D component model. To help estimate how long toolpaths will take to cut the software will calculate a time based on the length of the toolpath and the specified feeds and speeds that have been entered for the selected tool. This can be tweaked by the operator by editing the 'scale factor' so over time a value can be optimized based on actual machine performance to ensure the estimate is as close as possible to the actual cutting time. Using the Toolpath Tiling options it is possible to machine objects and designs that are many

times larger than the available area of your CNC machine bed. This process is also invaluable if the maximum sizes of your material pieces are limited. In both cases, a much larger project can still be machined by breaking the toolpath down into manageable tiles or strips, each of which can fit within the machineable area of your CNC machine, or on the available material blocks. Once cut, the tiles can then be re-assembled to form the finished piece. Toolpath templates allow you to improve the efficiency of your production processes by saving the complete toolpath settings for common operations. These settings can then be re-used at any time on different design geometry. Frequently used strategies and tooling can thus be applied to similar jobs, quickly and easily. The software allows you to add your own custom tools shapes to the tool library and generate toolpaths and simulate the finished result! Now you can simulate the effects of complex roman ogee cutters, round over bits and any other custom tool shape you desire. Simply draw the tool profile using the vector drawing tools or import the profile from the manufacturer and you can add your custom tool to the list. In the tool database you can specify feed rates, spindle speeds, cutting depths etc. Wrapped Rotary Axis Toolpath postprocessing allows all toolpaths created in the software to be saved and run on CNC machines fitted with rotary axis or rotary indexer setups. These setup functions also allow you to specify your rotary part setup and view the wrapped results in the 3D view. This function can be used for designing and cutting projects such as fluted columns and barley twists or engraving text onto round projects. Note: This functionality wraps standard 3 axis toolpaths around a cylindrical axis, substituting one of the linear axis to drive the rotation of the block of material while it is being cut. Production Plate Engraving lets you merge text lists into templates for badges and industrial plates. It can be used to merge CSV and text based lists using variables that can automatically scale to fit a pre-made design layout. Quick Engrave can be used to create toolpaths for Diamond drag tooling. This is typically used for marking engraved products such as gifts, awards, plaques, badges, pens, trophies etc. One of the most important productivity tools available in the software is the realistic 3D toolpath preview support. The results of each individual or the combination of all the toolpaths can be previewed cutting into a 3D preview model. This means that whether your job is a simple toolpath with one tool, or created from a complex combination of tools and strategies at different levels you can be sure that when the job is cut, it is right first time. As well as showing that the toolpaths are correct, the high quality rendering and ability to use real world material textures and fill colors is a very valuable sales tool. Using the simulation you can create customer proofs and evaluate design options without actually having to cut anything! Use the PhotoVCarving toolpath strategy to convert photographs and images into toolpaths producing stylised engraved designs. The created toolpaths engrave a series of lines at different depths to produce the desired image. The software has a built in tool database to make cutter management quick and easy. Tools can be organized in any way that suits your workflow. There is automatic support for machine management and material management. Tools can be filtered for your current material and machine settings, which makes selecting the right tool for the job simple. The tool database contains a powerful tool naming system. This allows you to have consistent tool names, and for those tool names to match the properties of your cutter. The thread milling toolpath enables you to machine holes for standard size screws in metals, woods, and acrylics, and is also useful for the creation of decorative wood fasteners. The thread milling toolpath has the option to create both internal and external threads, for example if you wanted to create a cavity to screw something into or if you wanted to create an exterior thread on something like a bolt! The create merged toolpath function allows you to combine toolpaths that use the same tool into a single, new, toolpath that is generally more efficient than cutting the constituent toolpaths independently. This can be particularly useful if you want a complete individual part to be cut before the CNC moves onto the next piece as it can merge the toolpaths into individual components. The create set-up job sheet command allows you to create a summary sheet that details all the important information you will need at your CNC machine when you come to run the toolpaths. This can be used as a reference to ensure you have the setup correct, have loaded the correct tool etc. It can also be used to archive with an old job as a quick reference file to see what the job the looked like and the machining that was involved for that project. You can also edit this to change the logo to an image of your own choice, adjust the header, footer and border colours and even customize which sections of information to include. Similarly to the area copy tool, this toolpath allows you to duplicate one or more toolpaths its children as a block, based on the dimensions you enter in its properties. True Shape Nesting lets you automatically arrange and fit vector shapes into your material size or user definable area, to get optimal material usage and minimum wastage. The nesting routine places vector shapes as close to each other as possible ensuring a sufficient gap to allow the parts to be cut out correctly. It intelligently determines what parts of your geometry should be nested together. It

can also automatically nest objects on both sides of a job together to create two-sided nested geometry. Our VCarve Pro and Cut2D Pro allows you to work with any job size meaning that there are no limitations to the size you want to work with. Gadgets are small programs that add additional functionality to Vectric products. They can be used to add new features to the software or automate common sequences of tasks. Examples include adding the ability to cut dovetail style joints with a standard end mill and applying toolpath templates to every sheet in a nested job followed by automatically post-processing and saving the files for your machine tool. You can also associate specific key combinations to these to very quickly access them as part of your standard work-flow. Toolpaths generated in PhotoVCarve can be imported into the software to combine with other toolpath types. Multiple PhotoVCarve projects can be imported and positioned, where additional elements can then be added and machined. All of the toolpaths can then be previewed and saved from the software. The contents of either the 2D or 3D view can now be printed using the Print command on the File menu. Simply select the view you wish to print 2D or 3D and then click the Print command. The standard Windows printer dialog allows you to select the printer and adjust its properties. When the OK button in this dialog is clicked, the view will be printed. The Print Preview command on the File menu allows you to check the layout of your page before you print. The printed view is always scaled to exactly fit the currently selected page size including allowance for margins. Drawings are not, therefore, printed at actual size and are not printed across multiple pages. We give you access to the online clipart that comes free with your purchase. The software comes with previews of the clipart you're entitled to in the clipart tab so that you can see all of the options available to you and download the items of interest. In order to get the latest entitlements, click the refresh button. To import the clipart from the clipart tab into your job, simply drag and drop your desired model onto your part. Windows explorer can make use of these thumbnails to show you a preview of each file when you browse a folder. The software also supports Windows drag and drop functionality to quickly add pieces of 2D or 3D clipart into an existing model directly from windows explorer. With windows explorer open, simply click and drag the 3D clipart thumbnail of the file you want from the explorer window into the 2D or 3D View. The selected file will be imported automatically and displayed in the software. These are split into sections beginning with getting started projects to let you see the process to produce a complete part and start to understand the general workflow. Then there are videos to cover each area of use within the program. The videos are designed to take you step by step through different types of projects to explain the key methods you will use in the software and to demonstrate these on real-world examples. You can just watch and absorb the contents or follow along pausing where necessary to complete a task. In addition to learning how to use the program the videos include tips and tricks for better use of the software. The result of each project along with the Clip Art provides a library of parts which can be machined to create sample files to improve your CNC skills or help you to demonstrate your capabilities to potential customers. One of the most important features of any program is not within the program itself. It is the support and resources available when you are learning the program or when you have a question about how something works or even a suggestion for a new feature. The FAQ pages have searchable general and software specific questions and answers. The forum lets users ask questions and discuss techniques related to CNC and the software. In addition to direct input from Vectric, there are a large number of enthusiastic users who are always willing to help on any topic associated with CNC machining. Another very interesting section of the forum is the gallery area where users can post images of projects they have done using Vectric software. Please take a look, there are some very nice examples of work on there. We have only been able to give a brief overview of some of software capabilities here. To really understand the speed, ease of use and full scope of what the program can do then please download the trial version and try it for yourself. The video tutorials will get you up and running quickly and the trial version is supplied with a number of standard demonstration files which you can scale and cut on your own machine using your own tooling to verify the quality of the toolpaths from the software and compatibility with your machine. In addition to the standard demonstration files we supply, you can load any of your own data files and preview them using the standard toolpath simulation capabilities of the program. Finally, if you have reached this far, we'd like to thank you for your interest in Vectric software and encourage you to Integrated Help, Help for all forms can now be found using the handy integrated help functionality. Click on the question mark icon on the top of each form to get the help for that specific function. Products VCarve Pro. Making the move to 3D? Want even more control over the things you create? VCarve brings the third dimension under your control with the ability to toolpath a single 3D model. Try VCarve today for Free. Simply download the free trial below. Why Choose VCarve Pro? Complete set of 2D Design and Layout Tools Easily create vectors from scratch or import and edit bitmap images. Create 2.I

would like to be kept up to date with information about new products and services. Buy VCarve Pro. For 3D you can Rough and Finish the model and there are options to project 2D and 2. Each toolpath includes appropriate options to customize the settings and provide a high level of control for different types of operation. In addition all toolpaths can be previewed to show just how the part will look when it is actually cut, this allows instant feedback to allow toolpaths to be further optimized. Business Benefits of VCarve Pro The emphasis on ease of use not only includes the interface and work-flow of the software but has also been carried through into the training materials. VCarve Pro has over 30 hours of tutorials available based on real-world examples that cover all aspects of using the program. The videos are accompanied by the associated files that allow users to watch and work through the training materials at their own pace. VCarve Pro is great for production oriented work and allows you to maximize material yield or create multiple copies of the same part. Click the buttons below to view more about specific features. Machine Parts on Two Sides. Machine Wrapped Rotary Parts. Pro Edition Features. No size limit, true shape nesting, toolpath templates and more. Other Features. Two-Sided Machining This adds the ability to create double-sided projects in the same session. In the 3D view, you will see the entire merged model as if it was simulated. Wrapped Rotary Machining Enables the use of a rotary axis also called a 4th axis or indexer. Spiral Toolpaths In order to create a toolpath that wraps around multiple times, one can create a long vector at a certain angle. Model Import into Rotary Project The software has the ability to import full 3D models from third party software for unwrapping in a rotary job, where you can position and orient the model in a rotary view. Vector Shape Creation The software has a comprehensive set of drawing tools to let you easily create vectors from scratch or add to imported data. Image Tracing Vectorization Image tracing also known as vectorization allows you to take an imported image such as a scanned drawing, graphic design or photo and to convert colors in that to vector outlines. Advanced Text Tools The 'advanced text' tools let you access true type or open type fonts on your PC to create text outlines for your design. Basic Dimensioning The dimensioning tools allows you to create a variety of different types of measurements on your drawing. Vector Layout In addition to the editing tools the software also has tools to let you layout parts either in a rectangular array to create a grid of objects or in a circular array to create symmetrical layouts around a center point. Layer Management The Layers are a very efficient way to keep your 2D data organized, one of the main uses is to allow you to temporarily hide data you were not currently working with. Create Vector Texture Repeating vector patterns can be quickly created using the 'create vector texture' tool. Quick Keys This allows you to add more precision to your shape creation and editing process more easily by allowing typed values while creating geometry. Vector Validator The Vector Validator is intended to help find issues with contours after file imports that are stopping tool-path creation such as overlapping contours or intersections. Mirror Mode Components This feature allows you to define a component level so that it mirrors all of its components in a certain way, based on the mirror type. Clipart Browser The clipart tab provides quick and convenient access to Vectric files containing 3D components or 2D vector artwork. Level Clipping The level clipping mode makes it easy to constrain the model you are creating to a chosen boundary. Material Setup Referencing the software to how your CNC will be setup is one of the most important elements of the process. Fast and Efficient Pocketing â€" optimizes use of multiple tools The pocket toolpath makes machining the material away from inside a vector shape efficient and easy to achieve. Helical Arc Support Output helical arcs in a way that your machine understands. Drilling Whether you are drilling a single hole or hundreds, just select the vectors representing the holes and the software will drill the center of each vector to the specified depth. Precision V-Carving V-Carving uses a constant angled cutter that's moved at flowing variable depth to create a 3D carved effect on the job, similar to the way a craftsman would work by hand. Raised Prism Machining The Raised Prism machining strategy is prefect for cutting high quality raised lettering and shapes on signs for restaurants, hotels and bars etc. Raised Prism carving uses the side angle of V cutters to rapidly form angled sides around the selected shapes. Automatically calculates the material thickness required to create a full prism based on the job size and cutter angle. Calculates multiple Z passes when rough machining is required to remove material from around the prism shape. Typically used when cutting raised lettering on signs. Perfect for: Woodworking and solid surface machining. Flutes on columns and fireplaces Drainage grooves on kitchen sink and shower units Options for ramping in and out to create unique decorative results. Efficient Texture Toolpath Textured panels are often specified by interior designers and architects and textures are also a very useful option for creating backgrounds on dimensional signs. Auto-inlay Toolpaths The auto-inlay toolpath options calculate profile cut-out and pocketing toolpaths for parts that need to be assembled to make inlays and inserts. Automatic cutter radius compensation on corner regions to ensure male

shapes will fit into female pockets or cavities Allowance option to ensure a sufficient 'gap' is created to allow parts to fit together 4 different Inlay options that are designed to make machining inlays very simple and straightforward straight, stepped, pocket and hole Ideal toolpath option for sign makers, woodworkers, plastic and solid surface fabricators who need to cut parts that fit closely together. VCarve or engrave at constant depth onto a 3D surface Pocket, profile, drill and texture onto the 3D model. Estimated Machining Times To help estimate how long toolpaths will take to cut the software will calculate a time based on the length of the toolpath and the specified feeds and speeds that have been entered for the selected tool. Toolpath Tiling â€" Divides toolpaths to fit material or machine limits Using the Toolpath Tiling options it is possible to machine objects and designs that are many times larger than the available area of your CNC machine bed. Toolpath Templates Toolpath templates allow you to improve the efficiency of your production processes by saving the complete toolpath settings for common operations. Form Tools - custom shaped cutter profiles The software allows you to add your own custom tools shapes to the tool library and generate toolpaths and simulate the finished result! Wrapped Rotary Axis Toolpaths Wrapped Rotary Axis Toolpath postprocessing allows all toolpaths created in the software to be saved and run on CNC machines fitted with rotary axis or rotary indexer setups. Production Plate Engraving Production Plate Engraving lets you merge text lists into templates for badges and industrial plates. High Quality Toolpath Preview One of the most important productivity tools available in the software is the realistic 3D toolpath preview support. Photo VCarving Toolpath Strategy Use the PhotoVCarving toolpath strategy to convert photographs and images into toolpaths producing stylised engraved designs. 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True Shape Nesting True Shape Nesting lets you automatically arrange and fit vector shapes into your material size or user definable area, to get optimal material usage and minimum wastage. Gadgets Gadgets are small programs that add additional functionality to Vectric products. Import Toolpaths from other Vectric Programs Toolpaths generated in PhotoVCarve can be imported into the software to combine with other toolpath types. Printing The contents of either the 2D or 3D view can now be printed using the Print command on the File menu. Online Clipart Access We give you access to the online clipart that comes free with your purchase. The software comes with previews of the clipart you're entitled to in the clipart tab so that you can see all of the options available to you and download the items of interest. In order to get the latest entitlements, click the refresh button. And Much More Integrated Help Help for all forms can now be found using the handy integrated help functionality. This device uses micro-current therapy. What is micro-current therapy? Microcurrent treatments use pulsating electrical currents of extremely low voltage to naturally contour the face, lift sagging muscles and reduce fine lines and wrinkles. Microcurrent operates at the cellular level to rejuvenate and nourish your skin, nerves, muscles, blood and lymph system. Even more, the current stimulates endorphins, so that when you leave a session, you both look and feel your best. The effects are cumulative, and there are no harmful side effects. Instead, there are side benefits, which include muscle re-education, scar repair and deep relaxation. Now, i can do it with ease at my home. Great Purchase". Return To Shop. Taxes, shipping and discounts codes calculated at checkout. I agree with the terms and conditions. Your Skin at Its Best. No more face dulness. Great Reasons to Choose Us. Scientifically Proven and Effective Backed by scientific study and proven to be worked. 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