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CreativeStudio® User Manual

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CreativeStudio V6.0

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Foreword

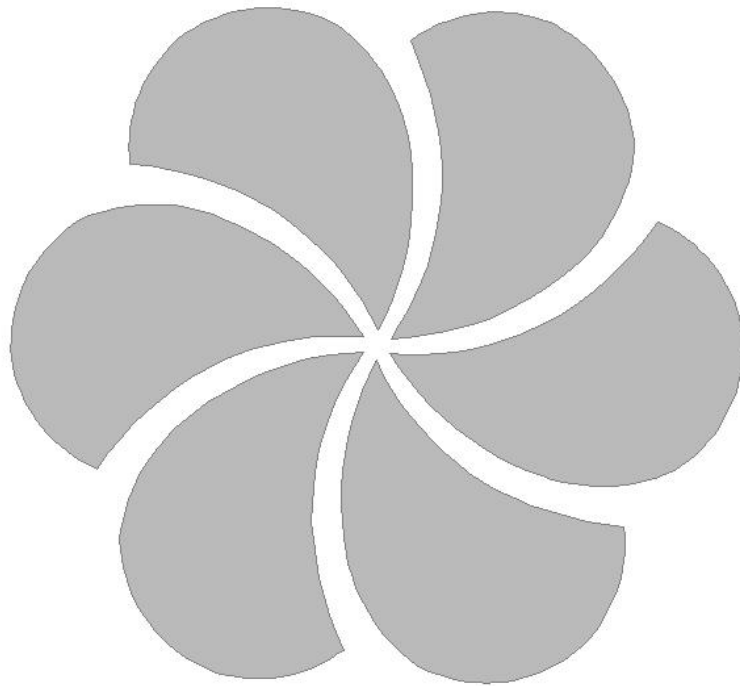
Gammill is fortunate to have had a host of experienced professionals assist us with the development of CreativeStudio®. The combined efforts of these individuals have produced an amazing piece of software which is truly "feature rich".

Gammill wishes to thank Patricia Barry of By Design Quilting, www.PatBarryQuilts.com for her exceptional work on the manual, as well as the entire Statler Stitcher team who have contributed countless hours towards the development of CreativeStudio®.

We also wish to thank the following individuals who have digitized patterns included in this manual.

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Part I




1 Introduction

Thank you for choosing CreativeStudio® from Statler Stitcher®.

A complete 'Help' system has been created to support the Statler Stitcher® CreativeStudio® software meaning the 'help' information is accessible in electronic format as well as printed. The electronic format is a database of information that has been linked into the CreativeStudio® software and is accessible at any time during quilting. The help system can be accessed by using the 'Help' command at the top of each CS screen. Just click on the word 'Help' (or press the F1 key) and another window will appear that presents the information and helps you look for the topic of interest.



There is also a "What's This?" Help option. Look for the icon  in the upper right corner. Click that once, and the cursor changes to a question mark. Then click on the icon / item you need to know about, and the Help System will take you to that spot in the user manual.

The CreativeStudio® help system was written for quilters by a professional quilter and explains each feature in a quilting context. ***This help system is not written with any one technology (computer or monitor) in mind. Quilting commands can be initiated with a mouse, stylus, touch, and even the keypad mounted to the sewing head.*** The term 'click' might refer to using the mouse, stylus, fingertip, or pressing a button on the keypad. Therefore, step-by-step instructions are guidelines, not rigid processes. The power of this system is in its flexibility.

The key features of CreativeStudio® are presented in the same way they might be executed (Baste, Blocks, Borders, Backgrounds). Utility features (Restart, Defaults, etc) are toward the end of the manual. An extensive index was created to help people search for topics of interest.

Links have been used in the Help system, and are denoted by keywords displayed in cyan, and underlined. If using the electronic format, clicking on one of the links will take you directly to that place in the electronic format that explains the keyword in more detail. If using the printed format, a document icon is printed just following the link. This icon contains a number which is the page number containing the keyword explanation.

Color has been used to differentiate certain details that apply to different patterns and processes. It is highly recommended that this manual be printed in color, to take full advantage of the instruction. Suggestions for enhancements to the software and the User Manual can be sent to enhancements@statlerstitcher.com

Again, thank you for choosing CreativeStudio® from Statler Stitcher®, a division of Gammill, Inc.

1.1 Technology Basics

This manual was written for people who are comfortable using a computer (with a mouse and keyboard) that is running Microsoft Windows. The Windows 7 and Windows 8 operating systems were used when this manual was written. As a refresher, we have listed some of the basic concepts used.

1.1.1 Equipment

The Statler Stitcher system is a fully integrated, computerized quilting system. It includes everything needed to stitch digital patterns with amazing accuracy and ease. As technology evolves, Statler incorporates the advancements, but tries very hard to maintain support for older models.

Computer CPU is the main processing unit. This looks like many other computers and has all the Statler Stitcher software already loaded on it. Don't add any other software to this computer, especially any printers or internet access software. The software has been loaded for optimal performance and any other software packages will inhibit the responsiveness.

There is a special 'key' that is required by the Statler Stitcher software, called a '**dongle**'. If the dongle is not attached to the computer CPU, the software will not operate the stitcher.

Controller (also called a '**MOD**') controls the motors. This box contains the technology to translate the computer software instructions into commands that move the sewing head. There are different versions of these controllers, and each is marked with a letter or number. **THIS IS IMPORTANT!** Although you may only refer to this when downloading software, it is important to know which controller version you are using. There is a small switch box with 2 switches (red and green) that controls the power supply to the stitcher and controller. At startup, the red switch should be turned on first, and the green second. At shutdown, reverse the order.

Monitor (or **screen** or **touchscreen**) displays the instructions. Some have speakers attached, and some don't. All of the Statler Stitcher instructions will be displayed on this screen. Responses to the instructions can be given using the mouse, the keyboard, keypad (on the sewing head) or touchscreen monitor.

Desktop is a nice name for the first computer screen that appears on the monitor after the computer is turned on. It shows a collection of icons, each of which has a specific purpose. The icons have names and double clicking an icon will initiate that purpose, task or program.

A 6-button [keypad](#)^[61] is on the Statler Stitcher sewing head. Like the mouse and keyboard, these keys are also programmed to respond to (or interact with) the instructions on the monitor. Using the keypad eliminates the need to move from the quilt to the computer every time instructions are executed.

Cables are required for all the parts to work together. This makes the system look complicated but the engineers have designed the cables so they are unique (one

cable only fits into one connection) or color coded (like the mouse & keyboard cables) or they are very well labeled (X, Y, Z connections).

Additional equipment you may want to purchase:

Surge Protectors are highly recommended for the computer and controller.

Universal Power Supply (UPS) is a type of battery backup device that maintains power even when the incoming power supply fluctuates. This is helpful for areas that sustain frequent power disruption. For use on the Statler computer an UPS of 600 VA or larger is recommended. It is not recommended that an UPS be placed on the supply to the controller. UPS systems are not capable of the large instantaneous currents required by the controller and can actually cause damage to the controller.

Thumb drive (also called Jump Stick, Travel Drive or Removable Disk Drive) is a form of removable media like a disk drive. Files are copied from the source (home) computer to the thumb drive, and then from the thumb drive to the destination (Statler) computer.

1.1.2 Terminology

Terminology - Be sure you understand the following terms and concepts because they are used throughout the manual.

"Power Up" means to turn on the Controller (red switch first, then green), Stitcher and then turn on the computer CPU. Be sure the monitor and the speakers are on also. It takes a minute, but the 'Desktop' screen will appear on the monitor.

"Power down" means to turn everything off. Don't just turn off the power! Exit 'gracefully' by saving your work (save the project), exiting CS (click on the exit "X"), shut down the computer (click on the Start button, choose Shutdown) and then turning off the power to the monitor, speakers, and controller (green switch first, then red).

"Click" usually refers to using the computer mouse to choose an object on the screen by pressing the left mouse button quickly. If the object is a command button, this executes the command. If it is a pattern or boundary, it selects it. Clicking on any of the quilting icons will initiate that technique. The term 'click' can also mean pressing a button on the keypad (on the sewing head) or it can mean touching an icon (if you have touch screen capabilities).

"Tap" - is functionally equivalent to 'click', if using a touchscreen monitor. Tapping a command button will execute the command. Tapping a pattern or boundary will select it. Tapping any of the quilting icons will initiate that technique.

"Touch & hold" also refers to a touchscreen monitor, and is similar to Right-click when using a mouse. During some quilting techniques, 'touch & hold' will display additional commands.

"Select" means to choose. If using the mouse, this is a single click. If using the keypad, this is pressing a button. If using a touch screen, it is tapping the screen.

"Highlight" and **"Select"** are used interchangeably because selecting an object generally highlights it.

"Swipe" means to drag your finger or stylus across the touchscreen monitor.

A **"dialog box"** (aka **'window'**) contains instructions, questions or descriptive information about something. CS uses dialog boxes to group information that belongs together, like the dimensions of a pattern.

A **"dropdown box"** is a dialog box that appears when a command is selected and there are choices associated with the command. The choices appear in a box which is usually just below the command so the association is clear.

A **"popup box"** is a dialog box that appears when the system needs to ask a question or give instructions. It can 'pop up' anywhere on the screen.

"Properties" (also called **details**) are descriptive pieces of information.

"Object" is a catch-all term for anything that can be described. It is a very general

(but techy) term that could mean a million things, so CS tries to avoid it by using more specific terms.

“Tool Tips” are little boxes that pop-up and give the name or a short description of something. To look for tool tips, hold the cursor over an icon for a couple seconds and see if the tip appears. Not all objects have tool tips, but most icons do.

“CAD Screen” also called the **Preview Area**, is the big, white, open area where the images of the patterns will appear.

“Quilt Group”^[69] is a term used to describe an area of the quilt top to be quilted. Quilt groups contain all the information (boundaries, reference points, sizing, positioning) needed to stitch a particular area of the quilt.

“Design Group” is a special type of Quilt Group, created when an [image is imported](#)^[101] into the project. Once the image is imported, patterns can be placed on top of the image to preview the placement.


“Project”^[66] is technically a computer file but figuratively is more like a binder with tabbed sections that contain all the patterns, quilt groups, preview areas and notes needed to complete a whole quilt.


“Encrypted Patterns”^[82] are pattern files that have been coded with a machine controller serial number or a dongle serial number, so they will run only on that machine. Encryption protects pattern designers by ensuring that people who have purchased one pattern can not make copies and distribute it to others. Encrypted patterns are protected in CS by using special [project file](#)^[67] types and using special [exported pattern file](#)^[139] types.

“Removable Media”^[11] is a device that holds computer files and can be moved from one computer to another. It makes copying files from one computer to another very easy.

“Thumb Drive” is another name for removable media.

“UR” is an abbreviation for Upper Right. Similarly, **UL** is upper left, **LL** is lower left, **LR** is lower right. These abbreviations are used often when defining boundaries - a concept to be explained soon!

 **Tip:** These are tips that explain how to use the software to resolve real life quilting issues. After all, this is about quilting !

 **Design It Yourself** - These are tips for experienced CS quilters who appreciate keyboard shortcuts and want to do their own pattern designing using the extensive CreativeStudio capabilities.

1.1.3 Navigating

Navigating can be done with a mouse, a touch screen monitor, a keyboard or the keypad (on the stitcher) but most of it is done using the mouse or touchscreen.

“Click” ^[12] means to quickly press (and let go of) the left mouse button.

“Double click” ^[12] means to click twice in rapid succession. Double clicking on a file will open it. Double clicking on a folder will open it too, displaying the contents of that folder.

“Right click” means to quickly press (and let go of) the right mouse button. Right clicking some objects will make a dialog box appear. The dialog box contains properties (which are details or characteristics) that describe the object.

“Tap” means to quickly tap the monitor touchscreen.

“Tap & Hold” will often product the same results as a 'right click' if there are additional commands accessible.

“Drill down” means to open folders starting from the top level, working down one level at a time. This can be done using double clicks or by clicking once on a special "+" icon that appears in front of the folder name. (Examples in the next section).

“Drag” means to press the left button, hold it down and move the mouse. Positioning the cursor over something on the screen (an object of some kind) and dragging it will generally move it from one place to another.

“Swipe” means to drag your finger or stylus across the surface of the touch screen monitor.

“Scroll” generally applies to text rather than an image (but not always). It means to move the text on the screen so you can see what is before or after it. CreativeStudio® uses scrolling to navigate dialog boxes. If Scroll bars appear on the right edge of the screen or dialog box, you can move up by clicking on the up arrow, and down by clicking on the down arrow. There is a bar between these two arrows which shows your relative position in the dialog box.

“Scrolling” can often be done using the mouse instead of commands. To scroll up, roll forward on the mouse roller (away from you). To scroll back, roll backwards (toward you). If using a touch screen monitor, swipe up to scroll back and swipe down to scroll forward.

“Zoom” means to change the size of an object on the screen by getting closer (zoom in) or farther away (zoom out). Zooming generally applies to images instead of text (not always).

“Zooming” can often be done using the mouse roller instead of commands. Roll it forward to zoom in, and backward to zoom out. Zooming is used in the preview areas.

“Panning” generally applies to the screen images instead of text. It means to move

the image on the screen in any direction without changing the size, scale or proportion. Press and hold the mouse roller wheel and move the mouse. The cursor shape becomes a hand. Notice the pink cuff on the hand icon? Nice work Matt! Panning will be used in CreativeStudio® in the preview areas.

“Hovering” means to hold the cursor over an icon or other object for a couple seconds, and see if a little box appears (called a tool tip) that gives the name or a short description of that object.

"Selecting files" means to choose. Usually this will also highlight the object. When working with files, a single click will select a file. Double clicks open the file.

To select more than one file at a time, use the control key (Ctrl). Click on the first file, then press and hold the Ctrl key while clicking on the rest of the files that need to be selected. If you choose the wrong file, click it again and it will be deselected. When done, release the Ctrl key and all the files will be highlighted and can be copied, moved or deleted together.

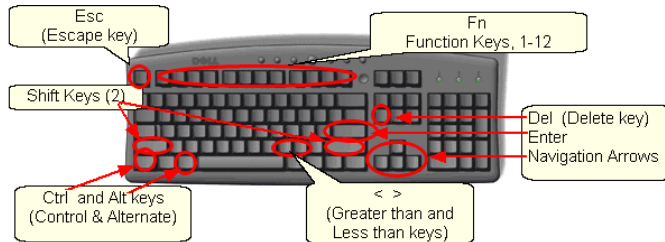
To select a group of files that are all contiguous, use the Shift key (Shift). Click on the first file, then press and hold the Shift key while clicking on the last file. When done, release the Shift key and all the files between the first and last will be highlighted and can be copied, moved or deleted together.

Navigating can also be done using the 6-button keypad on the Statler Stitcher. There is a keypad in the front and in the back of the machine, and they both function in the same manner.

Using the keypad on the machine eliminates the need to return to the keyboard/mouse repeatedly. Just press the Mode button to move sequentially through the icons. To backup, press and hold the Stop button, and press Mode.

1.1.4 Keyboard Shortcuts

Sometimes there are keyboard key-combinations that will execute a command without having to use the mouse. The combinations require pressing two keys at the same time, like pressing the shift key with a letter key to produce a capital letter. The Control key (abbreviated Ctrl or Ctl) and a letter are the most common combinations. Some examples of keyboard shortcuts are below:



Note: the check mark (✓) is short for 'click' or 'tap'.

KeySeq	Is the same as:	What it will do:
F1	✓Help	Access the User Manual Help System ^[34]
F2		Virtual Stitchout ^[133] ,
F5		Reset keypad ^[37]
F7		Node Mode ^[116]
Ctrl+N	✓File, ✓New Project	Create a new project.
Ctrl+O	✓File, ✓Open Project	Open an existing project
Ctrl+S	✓File, ✓Save Project	Save the current project
Ctrl+Z	✓Edit, ✓Undo	Reverse the most recent command
Ctrl+Y	✓Edit, ✓Redo	Re-execute the command
Ctrl+I	✓File, ✓Import	Import Image
Ctrl+E	✓File, ✓Export	Export Image
Esc		Escape from a command sequence or mode
Ctrl+✓		Selects multiple items
Ctrl+A		Selects all items
< >		Selects each pattern in order, regardless of how many are stacked on each other.
k,l		Selects each boundary in order, regardless of how many are stacked on each other.
i,o		Selects each trim in order, regardless of how many there are.
Del		Delete the highlighted text or object.
Pg Up Pg Dn		Navigate through the quilt groups.
↑ ↓ ← →	Alt+ -or- Ctrl+	Nudge selected patterns. Alt + the arrows will nudge the pattern with the handles showing. Ctrl + the arrows hides the handles.

Feature Specific Shortcuts:

Feature:	KeySeq	What it will do:
Measure	Right✓	Transfer a measurement. Measure first. Hover over destination field, then Right✓ the destination field, then click the number to transfer.
Draw/Set Sew Order	F8	Set Sew Order mode. On Preview area, click arrow to change direction, click number boxes in preferred sequence. F8 again (or Right✓) to save changes. Esc to exit without changes.
Draw/Pattern Anchor	F7 F9 F10 F11 F12	Node Mode - show the nodes of the selected pattern. Choose pattern anchor 'Edge'. Choose pattern anchor 'Center'. Choose pattern anchor 'Endpoint'. Choose pattern anchor 'Stretch'. Double click a selected pattern to rotate through the choices.
Draw/Boundary	Alt+B	Begin (or end) Draw Boundary mode on Preview area. Click ✓ the boundary points, Right✓ to end. Esc or Alt+B or second Right✓ to exit Draw Boundary mode.
Draw/Trim	Alt+T	Begin (or end) Draw Trim mode on Preview area. Click ✓ the trim boundary, Right✓ to end. Esc or Alt+T or second Right✓ to exit Draw Trim mode.
Draw/Arc	Alt+A	Begin (or end) Draw Sewable Arc on Preview area. Click ✓ 3 points (beginning, top of arc, ending). Esc or Alt+A or second Right✓ to exit Draw Arc mode.
Draw/Curve	Alt+C	Begin (or end) Draw Sewable Curve on Preview area. Click curve midpoints. Right✓ to end. Esc or Alt+C or second Right✓ to exit Draw Curve mode.
Draw/P2P Line	Alt+L	Begin (or end) Draw P2P Line on Preview area. Click ✓ line transition points. Right✓ to end. Esc or Alt+L or second Right✓ to exit Draw P2P Line mode.
Draw/P2P Pattern	Alt+P	Begin (or end) Draw P2P Pattern on Preview area. Click ✓ pattern ending points, Right✓ to end. Esc or Alt+P or second Right✓ to exit Draw P2P Pattern mode.
Draw/Freehand	Alt+F	Begin (or end) Draw Sewable Freehand on Preview area. Use the mouse or touchscreen to create a sewable design.
Draw/Measure	Alt+M	Click any 2 points on Preview area; measurements are displayed. Esc to exit.
Draw	G	Turn on (or off) the Gridpoint Snap when using Draw mode on Preview area.
Draw	E	Turn on (or off) the Endpoint Snap when using Draw mode on Preview area.

1.2 Computer Skills

The Statler Stitcher CreativeStudio® manuals assume that the quilter has been exposed to computer systems and is familiar with basic computer skills and terms. However, since many computer systems are similar (but different) a brief overview of those computer skills is included here.

One of the most powerful virtues of a computer is its flexibility. Unfortunately, that can also be a detriment because there are several ways to do the same thing, and that can cause confusion. The methods used in this text are NOT the only way to perform certain tasks. There are faster methods so if anyone is using a different technique but gets the same results, that is just fine!

1.2.1 'Explore' Folders

Folders and files are stored on a computer much the same as they would be stored in an office. By arranging them in a hierarchical structure, folders and files can be stored and retrieved easily. The term 'Path' is used to describe how to find them.

Example: **C:\Patterns\Patterns Statler Stitcher\Angel.qli**

- | | |
|---------------------------------------|--------------------------------------|
| (1.) This PC | is like the office. |
| (2.) Local Disk (C:) Drive | is one of the file cabinets |
| (3.) Patterns | is one of the drawers in the cabinet |
| (4.) Patterns Statler Stitcher | is a folder in the drawer |
| (5.) Angel | is a file in the folder |
| (6.) .qli | <i>is the file type.</i> |

1. Your Computer holds all the files needed to run the Statler Stitcher.
2. Disk drive C: is the file cabinet. It is a physical space that holds folders and files. Disk Drives use letters to differentiate them.
 - C: is usually the computer's fixed hard disk drive
 - D: is usually the computer's CD drive
 - E, F, G, H, etc. are used as needed. They might refer to a network disk drive, a thumb drive, a digital camera card drive or other removable disk drive.

3. The file drawer contains file folders that are similar in nature. (**Patterns**)
4. The file folder(s) group items that go together. (**Patterns Statler Stitcher**)

5. The filename is (hopefully) a descriptive name.

For example: **Angel** is (hopefully) a pattern looking like an angel.

There are no rules regarding assigning names to files but keeping them simple and clear is a good idea. Filenames are usually listed in alphabetical order so if there are two files that go together, it is wise to name them so they will be sorted together.

EX: daisy_block.qli, daisy_border.qli, daisy_panto.qli, daisy_triangle.qli

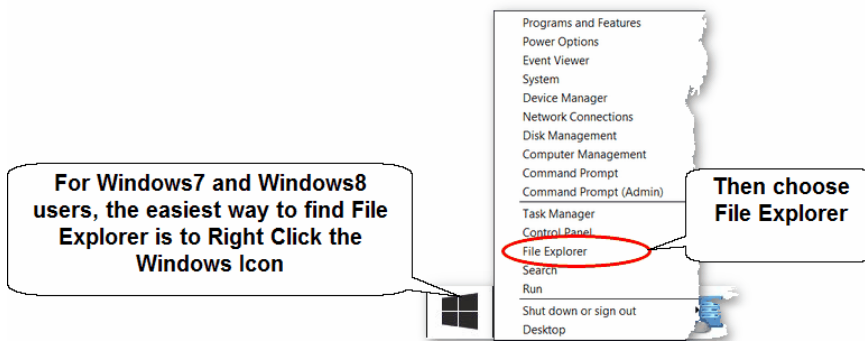
6. File Extensions indicate which programs can read them. Most word processing software can read a file extension of .txt (short for text) or .rtf (short for rich text format) or .doc (short for document). Word processors can't read a file with an extension of .qli (short for quilt language), .jpg (short for a picture file), .skf (short for

sketch file), .dxf (short for CAD drawing file) or .pat (short for pattern file).

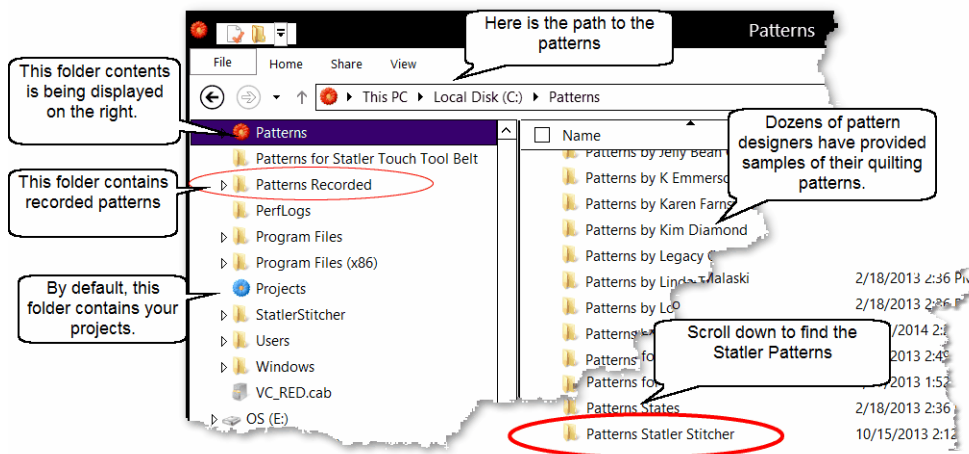
Statler Stitchers recognize file extensions for pattern files (.qli, .csq, .csqx, .dxf, .pat, .patx) and projects (.proj, .projx) and very little else.

Looking at Folders

File Explorer makes it easy to view and manage files and folders. Right Click on the Windows icon, and choose File Explorer.



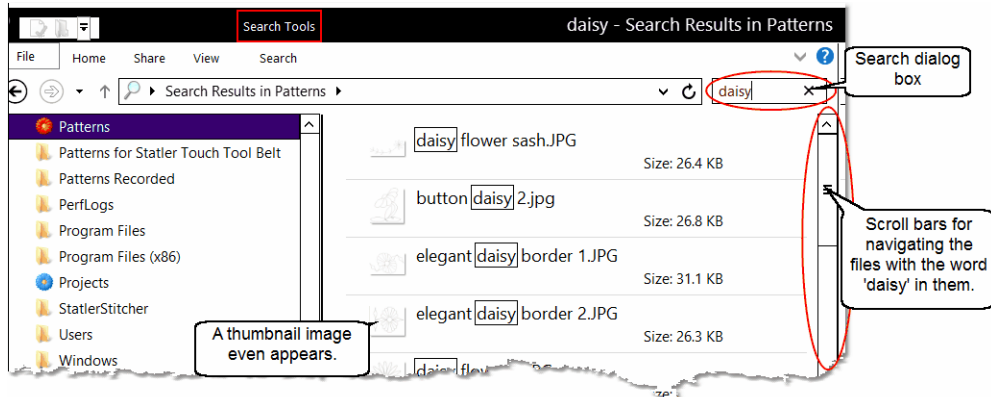
The screen appears with two panes. Single click the folder name (in the left pane) to select it and display the contents of the folder (in the right pane). Use the icons to navigate the folders and files.



[Drill down](#)^[14] and back up using clicks and the icons. The drill-down [path](#)^[18] is shown at the top.

Searching Folders and Files

The "Search" function is used to find specific files and folders. On the right side of the screen is the Search dialog box. If we want a pattern of a daisy, we might begin by searching for a pattern file with the word 'daisy' in the name. There could be other daisy pattern files that don't use the word 'daisy' in the name but this is a good place to start. Click in the Search dialog box and type the word. Tell the system where to start looking, by [selecting](#)^[12] the correct folder name from the list on the left.

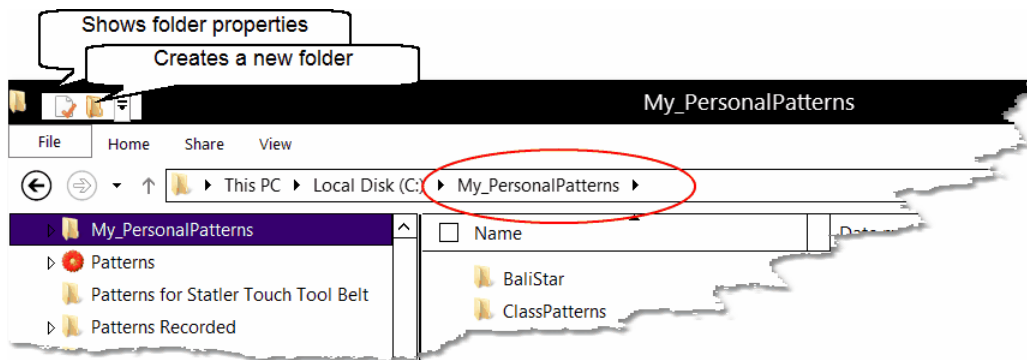


All the files with the word 'daisy' that were found in the Patterns folder are listed, complete with an image.

Creating a New Folder

The Statler Stitcher comes with hundreds of patterns already loaded. In addition, there are dozens more that were provided by different Statler pattern designers. These bonus patterns are stored in separate file folders which identify the designer. It is a good idea to create a separate file folder for your original patterns you have recorded or created. This separates the patterns you have purchased from the ones that came with your system.

Looking at the folders tells us that the standard pattern files are stored on the C: drive so that is where we will put our new folder. C:\My_PersonalPatterns.



Click on "New Folder" icon in the upper left corner of the screen. A new entry is created, called New Folder. It is already highlighted, so just type the new name: "My_PersonalPatterns" and press the enter key.

1.2.2 'Explore' Files

The Statler Stitcher computer comes pre-loaded with all the software and files in place, but at some time we all need to add, copy, move or delete some of our files. There are several 'right' ways to manage files so if there is a method you know and are comfortable with, use it. File Explorer is used here because it is easy to use. As described earlier, files have a [path](#)^[18] (the disk drive, folder and subfolders), a [filename](#)^[18] (hopefully it is descriptive) and a type called a [file extension](#)^[18]. CreativeStudio can read the following types of files:

- .qli is the Quilting Language format that the stitcher recognizes as a pattern file.
- .pat is an encrypted Pattern File.
- .csq is another Quilting Language format used for derivative patterns that you created (by modifying an existing pattern) and exported, giving it a new name.
- .csqx is the encrypted version of a .csq file.
- .dxf is a CAD format used by CAD systems and recognized by the Statler.

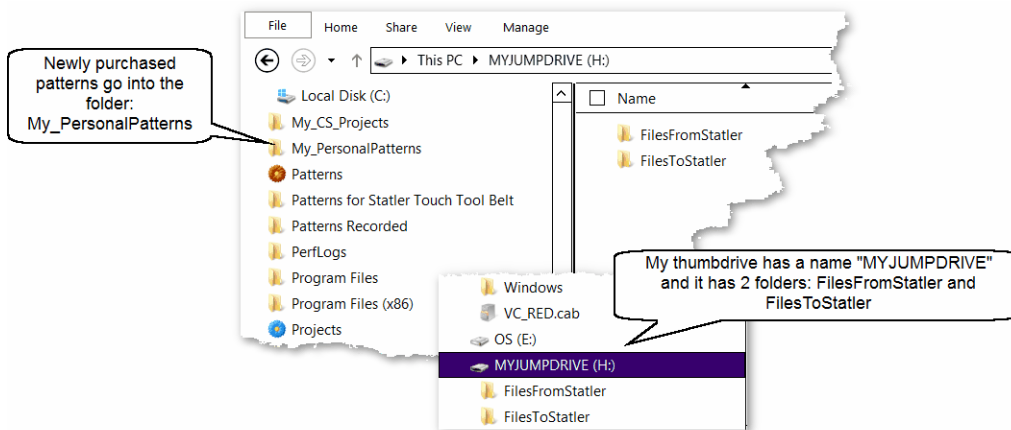
A special file type that the CreativeStudio recognizes is a [project file](#)^[67] (file extension is .proj or .projx). Project files contain all the patterns, sizes and other descriptive information needed to complete a quilt. Projects are described in depth later.

At some time, additional patterns will be purchased and will need to be moved to the folder containing your personal files; C:\My_PersonalPatterns. The new files will exist on some type of removable media (like a [thumb drive](#)^[11]) and File Explorer can help copy them to their new folder.

First, insert the [thumb drive](#)^[11] (removable media generally need a USB port) and open up File Explorer. [Search](#)^[19] the folder structure and find the removable media.

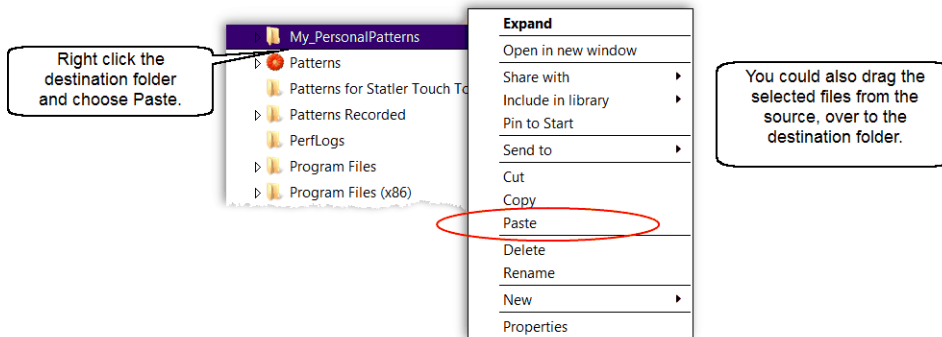
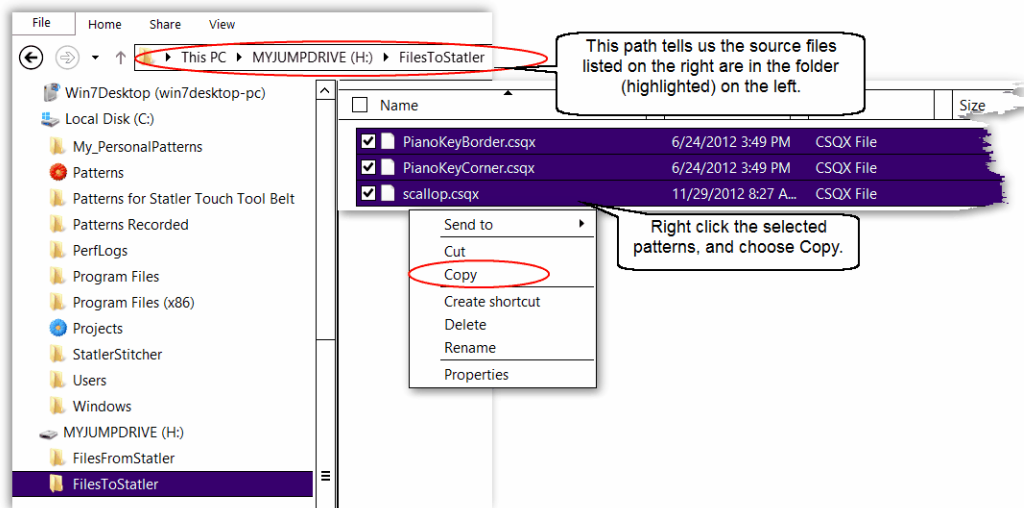
Tip: Scan the thumb drive with up-to-date Antivirus software before you move it to your Statler. It is wise to do this EVERY time you move media between computers. This protects your investment in your Statler Stitcher.

In this example, the thumb drive has been given the letter "H" but each computer can be different so it might be E, F, G, H, or some other letter. The example shows the thumb drive has two folders used for copying files to/from the home computer and the Statler. These folders are named: **FilesFromStatler** and **FilesToStatler**. Using descriptive names for files and folders make this process much easier.



Copying Files

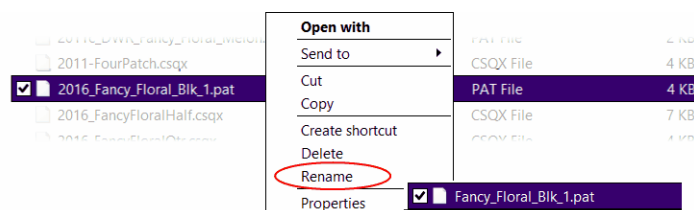
We know where the files are (source is H:\FilesToStatler) and where they need to be placed (destination is C:\My_PersonalPatterns). File Explorer is used here too. Show the source files in the pane on the right, and show the destination folder in the pane on the left.



Tip: Copying or moving can also be done by dragging the group of files to the destination. If the source and destination are in the same path, the files are moved. If they are in different paths, they are copied.

Rename Files

The new files in this example have names that are more like product codes than pattern file names, so change them to something you can recognize. Again, File Explorer makes this easy.



Right click the file name, and choose Rename. The filename will be highlighted so just type the new name in, and press Enter to save it.

Managing Recorded Files

One of the outstanding features of CreativeStudio is the ability to use the stitcher to create an original design by [recording](#)¹⁶⁰ the motions for stitching that design and save them so it can be used repeatedly. CS will automatically name the pattern file

and save it to a folder on your computer. The path is:

C:\Patterns Recorded\yyyyMondd_hhmmss.qli.

This looks scary but it is really very logical. The new pattern file needs a name that is unique, and the current date and time make it unique. A pattern recorded on New Years Day, shortly after noon might be named

C:\Patterns Recorded\2015Jan01_120345.qli.

It can be found in the folder C:\Recorded Patterns.

When a recorded patterns is sure to be used again, it is a good idea to [Export](#) the file, giving it a descriptive name, putting it in your 'My Patterns' folder and saving it as a .csq file. The .csq format is preferred because it is saved as arcs, not polylines. That is a techy reason but it means the file is saved more efficiently.

Buying Pattern Files

Statler Stitcher owners seem to share an appreciation for beauty and perfection. This is one of the reasons we tend to build a stash of patterns. Finding the perfect motif for a quilt is fun and stitching it out is very satisfying. So, building a stash of patterns is bound to happen. Each designer has a style of their own, so try patterns from multiple designers, and collect all their pattern catalogs too! They are really inspirational. When ready to place an order, here is what to do:

1. Log on to their website and view their catalogs. Most catalogs have shopping cart functions, so you can be adding patterns to your shopping cart as you find them. When you are done shopping, follow the instructions for checking out and paying for the patterns. Each designer does this a little differently so follow their directions carefully. One of the steps is to give your name, address and email address. The designer will either email the patterns to you or tell you how to download them yourself.
2. When you get your patterns save them to your home computer first. (This assumes that your home computer has internet access, a firewall and virus security software.) All new files should be received by (and saved on) your home computer so it can check them for viruses, etc. The Statler Stitcher should never be connected to a network.
3. Frequently the patterns will arrive in a zipped file folder, which means it has been compressed so it takes less space and can be sent to you faster. It is easy to unzip a folder. Just like Windows Explorer, right click the zipped folder and follow the instructions. There is a wizard that will help explain the process.
4. Now copy the files to your Statler Stitcher computer.

Moving Files

Many people use the terms 'copy' and 'move' interchangeably because they are so similar. When files are copied from one place (source) to another (destination), the original files on the source remain. When files are moved from one place (source) to another (destination) the original files are deleted.

The previous section described how to copy files from a Removable Media to a folder on the Statler computer. Copying files from the home computer to the Statler

computer works exactly the same, but it takes two steps. The first step is to copy or move files from the home computer to the removable media, and the second is to copy or move the files from the removable media to the Statler computer. Easy!

Downloading new versions of the software.

The Statler Stitcher is a stand-alone system which means it should NOT be connected to the internet or have any other graphics software loaded on the computer. This guarantees that the CS software can run at peak performance and anti-virus software is not needed. Screen Savers should NOT be used either.

The first time CreativeStudio is installed, it must be done from a CD because it is big (see the Installation Guide section). After the initial installation however, you can download new files from the Gammill / Statler website. Use a different computer (your home computer) to access the internet when downloading files. All software upgrades are announced on the Gammill website and on several internet discussion groups. Access to the Technical Support section of the site www.Gammill.net requires some setup so call the Statler Stitcher Tech Support people first.

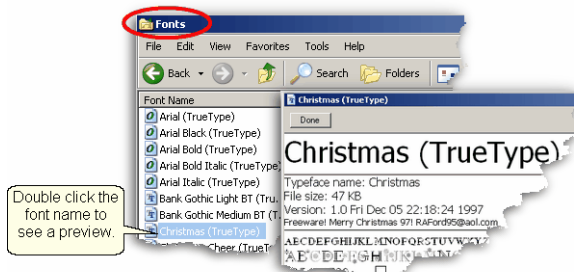
If you have no desire to ever download software, Statler (and most pattern designers) will copy the software to a CD and mail it to you. There will always be a fee for this extra service, so call first and ask about the process.

1.2.3 Add New Text Fonts

Adding additional fonts is possible and easy. Standard Microsoft fonts can be added by copying them from another computer to a thumb drive (jump stick) and installing them on the Statler computer. Free fonts can also be found and downloaded from the internet. It is a good idea to check these (do a virus scan) on a different computer before installing them on the Statler computer. Also, be sure CS is not open and running when installing new fonts.

1. **Find the new fonts** (probably using the computer you use to connect to the Internet):

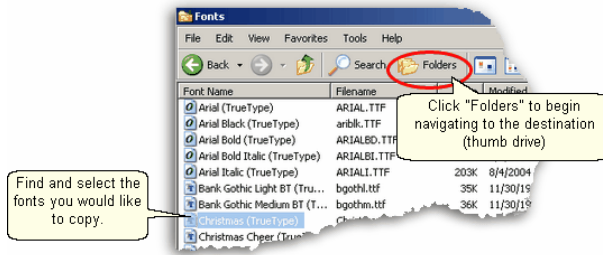
- * Click on Start button, click Settings, Click on Control Panel, Double click Font folder.
- * Double click any font name to see what it looks like.



2. **Copy the new fonts** from the source computer to a thumb drive:

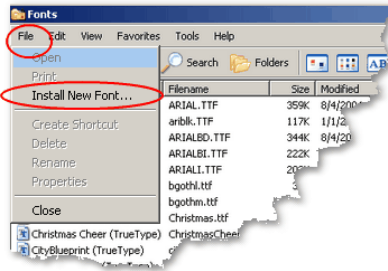
- * Highlight the fonts and copy them.
- * Click on Folders button to find the thumb drive.
- * [Navigate to the destination folder](#)^[18] on the thumbdrive

- * Click Edit command, Click Paste.
- When done, "Safely Remove the Hardware" (eject the thumbdrive).

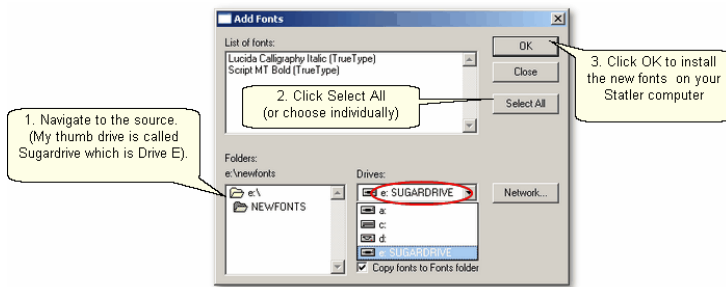


Tip: Scan the thumb drive with up-to-date Antivirus software before you move it to your Statler. It is wise to do this EVERY time you move media between computers. This protects your investment in your Statler Stitcher.

3. **Install the new fonts** from the thumb drive.
- * Insert the thumb drive into the Statler computer.
 - * Click Start button, Click Settings, Click Control Panel, Double Click Fonts folder.
 - * Click on File Command, Choose Install New Font.

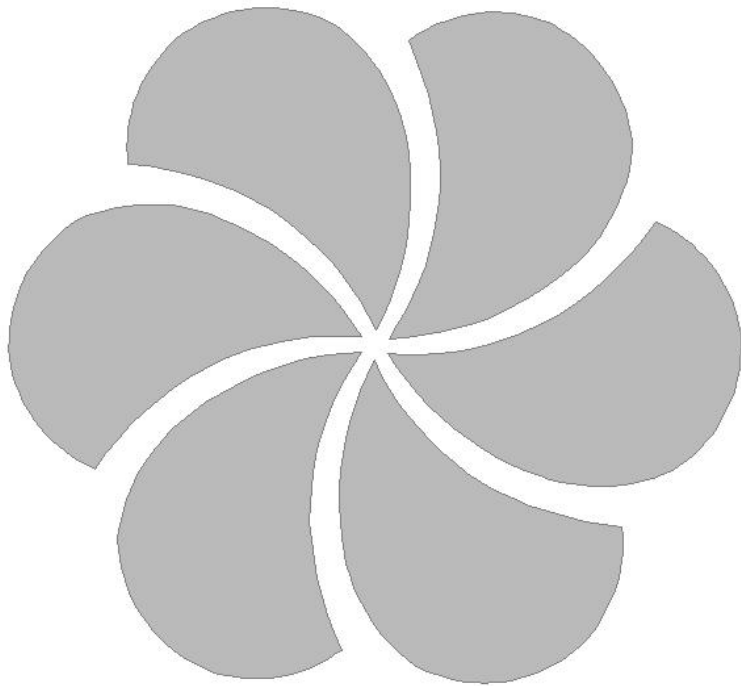


4. Navigate to the folder containing the new fonts.
- * Select the new fonts to install
 - * Click OK.



TIP: CS can use any standard Windows font for text. Some fonts look great but sew poorly because they were created with polylines, so test all fonts before using them.

Part II



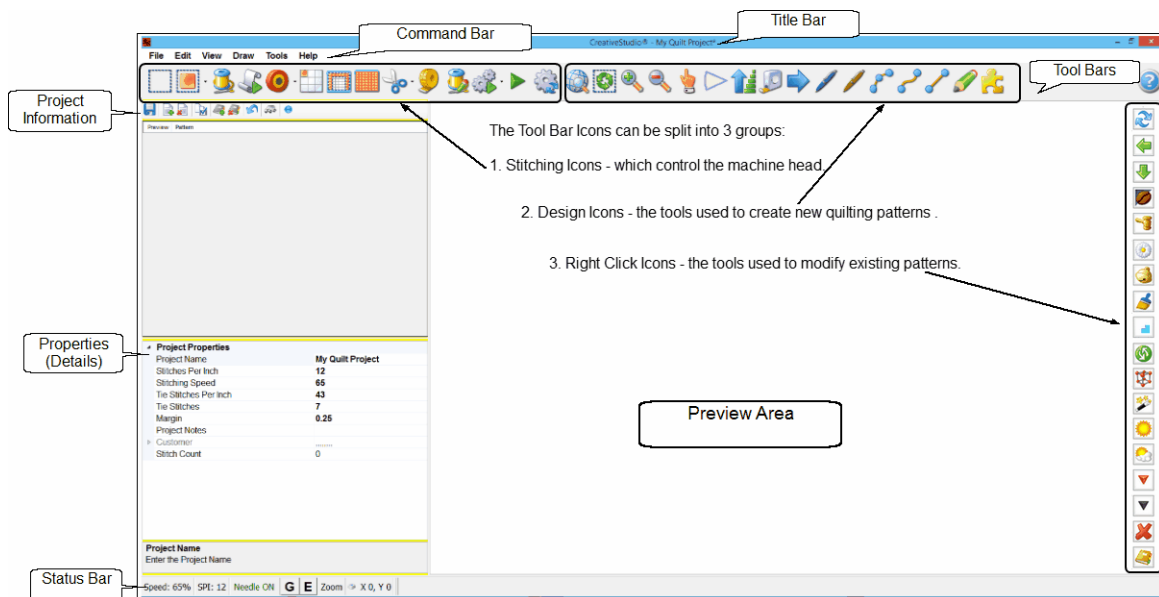
2 Main Screen Layout

This section is dedicated to understanding the main CreativeStudio®(CS) screen. It is important to note that there is more than one way to execute (almost) any command. Creative Studio® was written to work on multiple computer platforms and operating systems, so navigating the main screen and its options depends on the computer you are using.

Quilting commands are can be initiated with a mouse, stylus, touch, and even the keypad mounted to the sewing head. The term 'click' can refer to any of these methods. Therefore, step-by-step instructions are guidelines, not rigid processes. The power of this system is in its flexibility.

For example, there are several ways to create a boundary on the main screen. It can be defined using the keypad on the sewing head, or using the mouse on the screen, or using a touchscreen stylus (or your finger) if you have a touchscreen monitor. Some commands have keyboard shortcuts. Use the tools and methods you prefer.

All quilting processes are initiated from the Main Screen, shown here.



The top section has all the tools and commands needed; [Title Bar](#)^[28], [Command Bar](#)^[29], [Tool Bar](#)^[38]. The center section is the main [working area](#)^[48]. It is divided into three distinct areas; [Project information](#)^[48], Properties [Properties \(Details\)](#)^[49] and the [Preview area](#)^[60]. At the bottom of the screen is the [Status Bar](#)^[63] and the [Task \(or Start\) Bar](#)^[64]. Each area will be discussed in more detail later, when they are used to describe the quilting process.

2.1 Title Bar

The Title Bar is a standard feature in most software products. It displays the title of the software program being used and the name of the file currently being used. For CS, the file is a project.



Title Bars also contain three important icons.

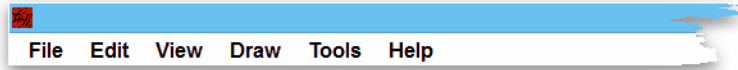
Minimize will shrink the screen, making it a button on the task bar.

Re-size will change the screen size (Full Screen or Partial Screen)

Exit is a fast way to close the software (Also called "X-it" meaning click on the "X").

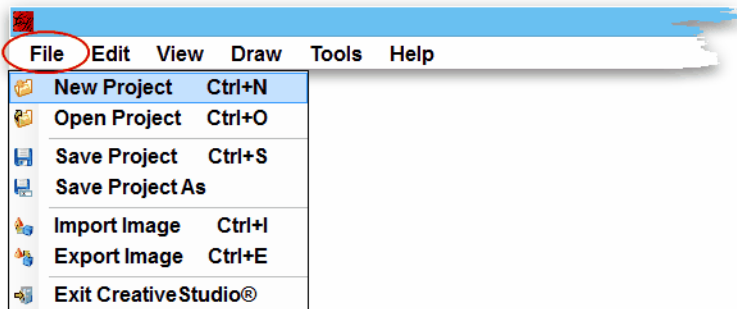
2.2 Command Bar

The Command Bar is the second line of the screen. Click on any of the words, and a drop-down box appears, showing the choices for that command.



2.2.1 File Command

The File commands are used to organize and save your work. CS uses 'Projects' to collect, hold, preview and save the patterns and layout you choose for your quilt. [Projects](#)^[66] are described in detail later in this text so at this point, consider them to be a file folder that holds all the details about a quilt. Click on the command "File" to see the options.



[New Project](#)^[67] - is used when starting a new quilt. (Ctrl+N is the keyboard shortcut).
[Open Project](#)^[67] - is used when the project already exists. (Ctrl+O is the keyboard shortcut).

[Save Project](#)^[67] - saves all of the elements of the project together using the current project name. Save Often! (Ctrl+S is the keyboard shortcut).

[Save Project As](#)^[67] - saves all of the elements of the project together AND lets you give it a different name.

[Import Image](#)^[101] - allows you to import a picture image - like a quilt block, so you can audition your block with different quilting patterns. (Ctrl+I is the keyboard shortcut).

[Export Image](#)^[103] - allows you to make a copy of what is shown on the Work Area, and export that image into the StatlerStitcher Images folder, to be shared with others. (Ctrl+E is the keyboard shortcut).

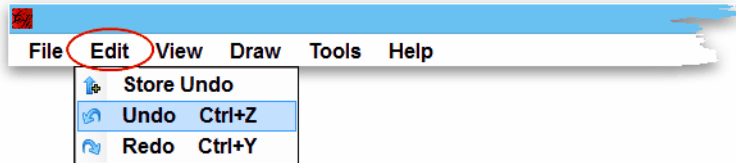
[Exit CreativeStudio](#) - will close the software, just like the Quick Exit icon.

Tip: The default project name is "My Quilt Project". Although it is possible to add patterns to this and save it, it is not advisable. So, always provide your own project names. Consider using a naming convention that somehow identifies the quilt; perhaps by customer, date, style, event or some other combination of methods.

2.2.2 Edit Command

CS provides the ability to undo (or redo) the previous command, so if a command step is made by mistake, it can be immediately corrected. This does not apply to numeric measurement changes, just adjustments on the Preview area. CS

remembers the recent commands (called the stack) performed in the current quilt group, so if you backup too far, Redo will “Undo the Undo” or go forward again.



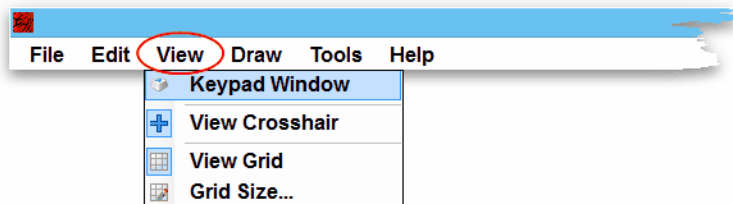
Store Undo will store the current state (this is for the techie people).

Undo will reverse the previous command.

Redo will re-execute the previous command.

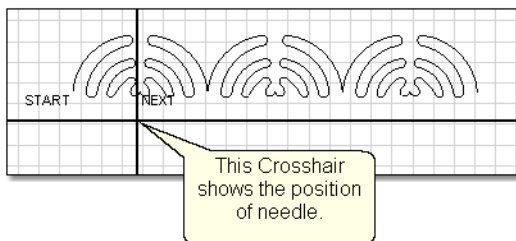
2.2.3 View Command

CS can include (or exclude) certain windows which contain some of the operating details.



View Keypad Window means to display an image of the keypad mounted to your sewing head. It will appear in the lower right corner of the Preview area.

View Crosshair means to show the needle position of the sewing head, on the computer screen in the preview area. Like on a graph, the needle position has X and Y co-ordinates. To make it easy to find this position on the screen these appear as horizontal (X) and vertical (Y) translucent blue lines. The intersection of the two lines is the 'crosshair' which is the needle position.



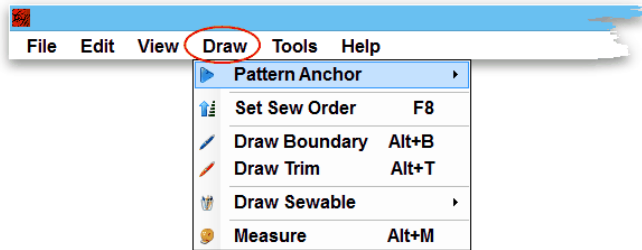
View Grid - Choosing to display a grid will change the look of the preview area. It can look like graph paper with very fine lines and it is helpful when drawing and planning pattern positioning.


View Grid Size - Choose the distance between the grid lines that helps you plan the designs effectively. If precise pattern placement is important, the grid size might be set to a quarter inch (0.25) but if the pattern is very large scale, the grid size might be better at one inch or more.

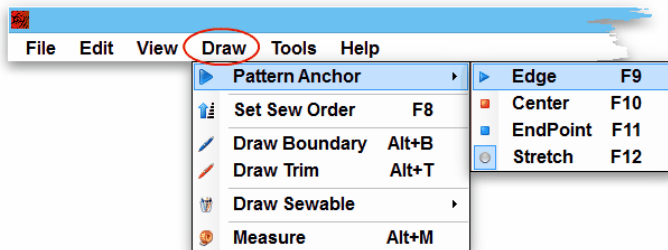
2.2.4 Draw Command


In addition to the hundreds of patterns in CS, it is also possible to use the mouse to create boundaries, create new patterns and to modify existing patterns. Complete

details and examples are given in the section on quilt pattern editing.



[Pattern Anchor](#)¹⁴⁶ - There are four different pattern anchors used to [adjust patterns](#)⁸⁸, plus one special method to adjust patterns; Node Mode . Each mode is identified on the screen by different color resizing handles. Click a pattern once to select it and see the resizing handles. Double click the pattern to change the pattern anchor modes, rotating through all the appropriate modes. Each mode responds differently to resizing because it is anchored at different points.



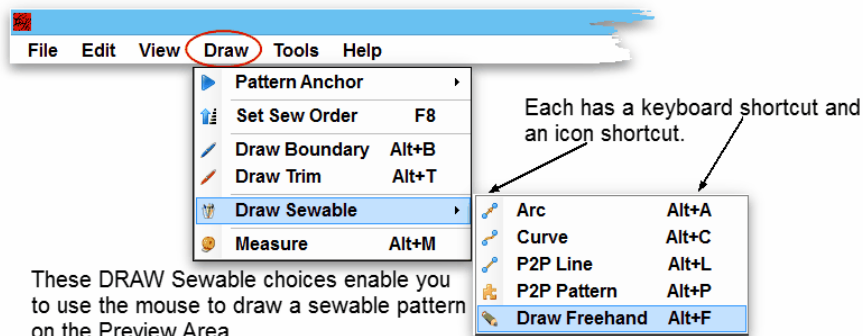
- * F9 Edge - Move any resizing handle (purple) and the opposite edge is anchored.
- * F10 Center - Move any resizing handle (orange) and the center is anchored.
- * F11 Endpoint - Move one of the resizing handles (blue squares that appear only at the startpoint or endpoint of the pattern) and the other is anchored. F11 - Endpoint anchors can not be used on block patterns since the startpoint and endpoint is the same point.
- * F12 Stretch - Move any resizing handle (gray) and the opposite handle is anchored. Stretch is the only resizing method that allows a resizing handle to change both height and width at the same time. This allows the pattern to be stretched or skewed, which is very useful when fitting a pattern into a not-so-perfect quilt block.
- * Node Mode - is also initiated by clicking on the shortcut icon, on the right. 

[Set Sew Order](#)¹⁴⁶ (F8) - By default, CS will stitch patterns in the same order that they are moved on to the preview area (screen). This command allows changes to be made to the sewing order. It also allows the stitching direction to be reversed.

[Draw Boundary](#)¹⁴⁹ (Alt+B) Boundaries are created for general reference and for receiving and resizing patterns. They can be defined [using icons](#)⁸⁵ and the sewing head (to identify the actual shape of a quilt block). This command draws boundaries on the screen [using the mouse](#)¹⁴⁹. The size of a boundary can automatically resize a pattern to fit the space.

[Draw Trim](#)^[151] - (Alt+T) This is a special type of boundary used to remove or trim away some part of the pattern(s) showing on the screen. Trim boundaries can be defined [using icons](#)^[221] and the sewing head (to identify the actual shape of a quilt block) but this command draws trims on the screen [using the mouse](#)^[151]. The [Trim icon](#)^[38] displays the choices: [Trim Inside](#)^[221] or [Trim Outside](#)^[184] which determines what part of the pattern will be concealed and not quilted. This is a temporary change to the copy of the pattern(s) on the screen. It does not permanently affect the originals, it just prevents the trimmed portion of the pattern from stitching out.

[Draw Sewable](#)^[153] - Unlike drawn boundaries that do not stitch out, these drawings will stitch out. Sewable drawings are all positioned using the mouse instead of the sewing head. These drawings can be used with other patterns or independently. The sewable drawing choices are:
arcs (Alt+A) curves,(Alt+C) lines (Alt+L) patterns (Alt+P) and freehand (Alt+F).



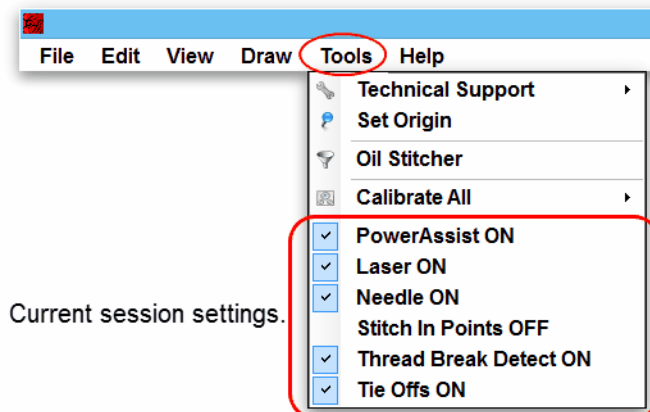
[Draw Measure](#)^[159] (Alt+M) - Allows images on the screen (boundaries, patterns, etc) to be measured using the mouse. This gives a good approximation of the true size.



Design It Yourself - For most experienced quilters, the drawing capabilities of CS virtually eliminate the need for a separate piece of software to create and save original patterns. Most 'Draw' functions have keyboard shortcuts.

2.2.5 Tools Command

The tools listed here are used as needed, to customize the quilting process. This section describes briefly what they do.



[Technical Support](#)^[232] - There are many mechanical, electrical, and numeric settings that are required to run CS. Some of the settings are defaults that can be changed

to suit the quilter's preferences. These default settings are listed in the Controller Definition Form in [Utility Functions](#)^[232] and explained in detail in the chapter [Set Stitching Defaults](#)^[164].

Technical Support also covers [Diagnostics](#)^[232] (which are metrics that are used to run diagnostic tests) and Test System (which is a routine used for troubleshooting). Both are considered Restricted Areas - Do not modify any of the values without explicit instructions from your dealer.

[Set Origin](#)^[233] - All graphics products need an origin but CS's ability to set a unique origin point enables the projects to be repeatable, across machines. The repeatable origin allows recovery from accidental (or end of the night) power shutdowns. It also means that projects can be created for a whole quilt and the project can be sold / shared to others.

[Oil Stitcher](#)^[233] - This is a special routine that is an optional part of the regular cleaning and maintenance. It runs the sewing head motor at varying speeds backwards so the oil has a chance to penetrate some places that are otherwise hard to reach. New machines and certain climates may require this to be done more frequently. See [Utility Functions](#)^[232] for complete details.

[Calibrate All](#)^[234] - Calibrating guarantees stitching accuracy. This is required when CS is first installed, after loading new software versions or performing any significant technical maintenance. This calibrates the Stitcher Motor, the Power Assist, and the Record function. (see [Utility Functions](#)^[232])

Current Session Settings: The following settings are inherited from the default settings. Changes made here apply only to the current session:

Power Assist ON (or OFF) This feature enables the machine head to move more easily by adding a little 'motor power'. This compensates for the weight of the machine and is adjustable to suit each individual.

Laser ON (or OFF) - The laser light is automatically turned on during certain functions, but it can be turned on (or off) manually. If CS needs the laser light on, it will turn it on automatically.

Needle ON (or OFF) - The needle can be turned OFF when a pattern is being checked for proper positioning. By turning the needle off and the laser light on, CS can move through the pattern and the light shows where the stitch line would appear. This is like a rehearsal. Once the path is correct, turn the needle ON and use the Restart function to repeat the motions, and stitch it out.

Stitch in Points OFF (or ON) - When the Stitch in Points is set ON, the sewing head will take an extra stitch in every point it encounters. This enhances some patterns by making the point more precise.

Thread Break Detect ON (or OFF) - When the Thread Break detector is ON, the sensor on the sewing head is enabled. It is possible to change the sensitivity of this detector by changing the lag time before it registers - see Controller Definition Form.

Tieoffs ON (or OFF) - Tieoffs are the tiny stitches that are made at the beginning and the end of a pattern or a line of stitching. They serve to knot the threads so the

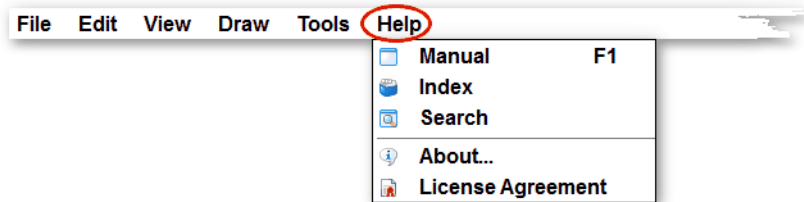
stitches will not easily come out.

- Regular tieoffs are made before the pattern is stitched. Half of the tieoff stitches are made going forward, the other half stitch backward, so the machine ends up at the same spot before starting the pattern (or after ending the pattern). The result is a very secure, but noticeable knot.
- Competitive tieoffs are usually much smaller and do not stitch over themselves or the pattern. They are made going forward as the start of the pattern, and at the end of the pattern. They take the place of the first (and last) portion of the pattern. The result is a secure, almost invisible knot.

Tip: Any changes you make to these settings will affect the current session only. When you shut down the system and restart it, the settings return to their default values. To change defaults, see [Set Stitching Defaults](#) [164].

2.2.6 Help Command

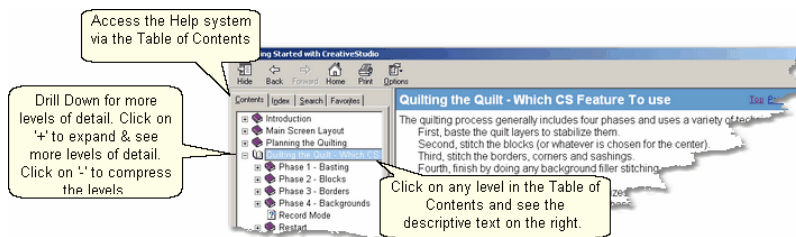
Help is an integrated system that provides information about CreativeStudio. Click 'Help' or press F1 to view the user manual's Table of contents, to use the Index of key words, or search for key phrases. "About..." will display the software version numbers, the Controller serial number and the Security Key (dongle) serial number. The Statler Stitcher Software License Agreement is included too.



This 'Help' window will look very familiar to people who have used other help systems. It is a split screen that allows navigating by topic on the left, and full explanations of the selected topic on the right. It is possible to search for something by browsing the table of contents, by browsing the index, or by doing a search for a word or series of words.

Many of the screens also have a Help icon "Help ?" which is a context sensitive request for help. Click-on this icon once, then move to the object on the screen that is not understood and click again. A short explanation appears or the help system opens allowing search capabilities.

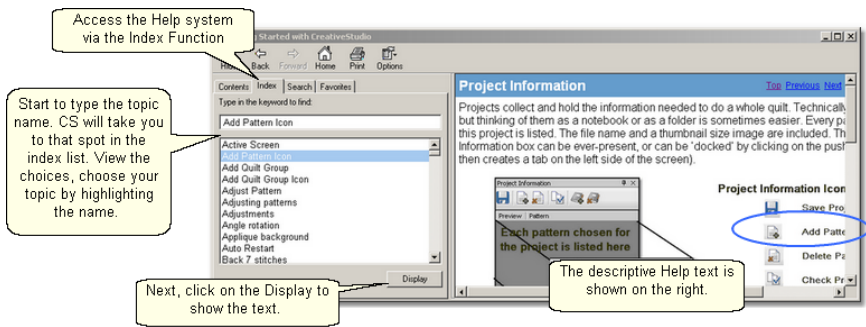
Help - Using the Table of Contents.



The Table of Contents provides a convenient way to scan the content of the manual quickly. The table of contents can be expanded to display all levels or compressed

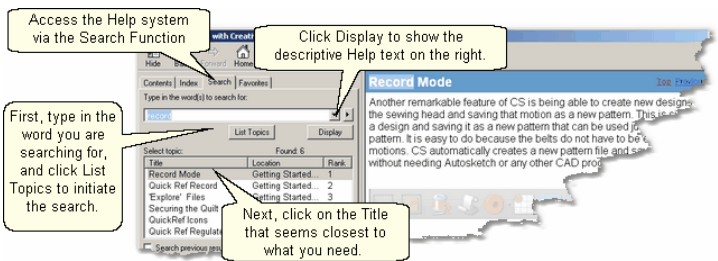
to show just the major sections. Any time a title is highlighted in the table of contents on the left, the text associated with that title appears on the right.

Help - Using the Index.



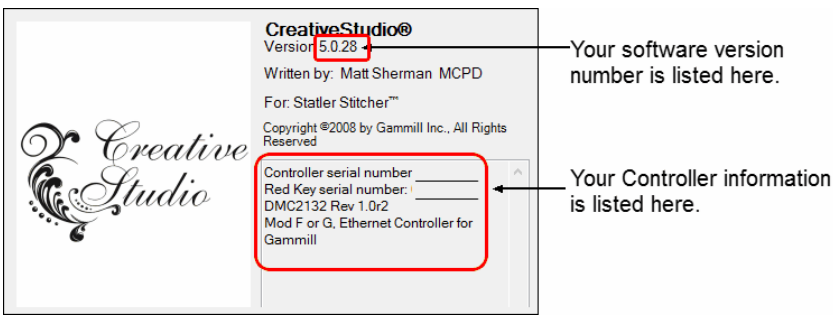
The Index provides a convenient way to look for a word and any variations of that word. For example, typing in a general term like the word 'Repeat' would point to the place in the index that would precede repeat pattern icon, repeat pattern setup, repeat setting details, repeats and rows, etc. Highlighting a word and clicking 'Display' will show the detail on the right. If a word appears more than once, a list will be presented and you will be asked to make a choice before the detail is shown on the right.

Help - Using the Search feature.



The search function will search the entire CS User Manual database looking for a match. Instead of displaying all of the matches, CS displays a list of titles (section titles) and locations (chapter names) to help you choose the right match. Click on 'Display' to show the actual text from the CS User Manual.

Help - About your Statler Stitcher System.

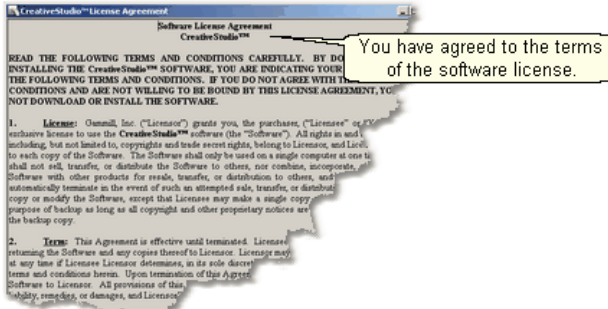


Some day you might call for support and you will be asked what version of software you are running and what Controller Mod you have. These are good things to know, and it is probably a good idea to write down this information somewhere accessible -

perhaps on the first page of this printed user manual.

Tip: Every Statler Stitcher controller has a serial number assigned to it. Similarly, every new style security key (dongle) has a serial number also. Some pattern designers are encrypting purchased patterns with the serial numbers to prevent patterns from being 'shared' inappropriately. So, don't be surprised if you are asked for your controller serial number when you are buying a new pattern.

Help - Statler Stitcher Software License Agreement.



Like all proprietary software companies, Statler Stitcher has certain terms you agree to when you buy and install the CreativeStudio software. Basically it says that Statler has done its due diligence in providing a world class software program, and that the user (you) promise not to do anything illegal with it. How's that for simple!

2.3 Function Keys

Function Keys are shortcuts for features that would require several 'clicks' using the mouse and the Main Screen.



[F1 - Help](#)^[34]

No matter where you are in the CreativeStudio® Screens, you can just press the F1-Help Key and you will be presented with the Help system that is integrated into the software.

[F2 - Virtual Stitchout](#)^[144]

When modifying or creating a new pattern, it is advisable to check the sewing path before saving (exporting) the pattern. F2 - initiates a process that checks the path, and 'boinks' if there are breaks found. This Virtual Stitchout does not require that pattern to actually be stitched out - it is just simulated.

[F3](#) (available)

[F4](#) (available)

[F5](#) - Keypad Reset

Most of the CreativeStudio® features can be initiated using the keypad mounted on the sewing head. The purpose of this is to expedite the quilting process. When complicated features take time, and the quilter attempts to exit that feature and try something else, the keypad can get confused. The safest way to handle this situation is for the keypad to stop responding. To reset the keypad, simply press F5.

[F6](#) (available)

[F7 Node Mode](#)^[116] - The selected patterns are shown with nodes showing, allowing the pattern to be modified using the mouse.

[F8 - Set Sewing Order](#)^[146] - Displays all the patterns on the screen, and labels each with a number (stitching sequence) and an arrow (stitching direction).

[F9 - Edge Pattern Anchor](#)^[30]

Changes the Pattern Selection Resizing Handles to Edge.

[F10 - Center Pattern Anchor](#)^[30]

Change Pattern Selection Resizing Handles to Center.

[F11 - Endpoint Pattern Anchor](#)^[30]

Change Pattern Selection Resizing Handles to Endpoint

[F12 - Stretch Pattern Anchor](#)^[30]

Change Pattern Selection Resizing Handles to Stretch.

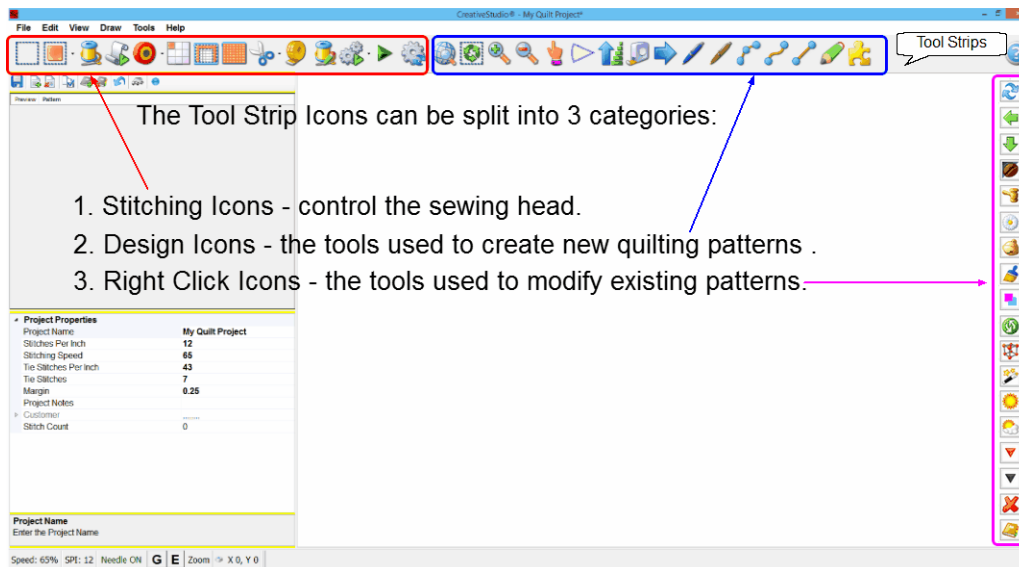
2.4 Tool Strip

The icons displayed on the Tool Strips initiate unique quilting features. Every quilting feature (represented by icons) is described briefly here, and in more depth later when they are used in context. Each icon falls into 1 of 3 categories:

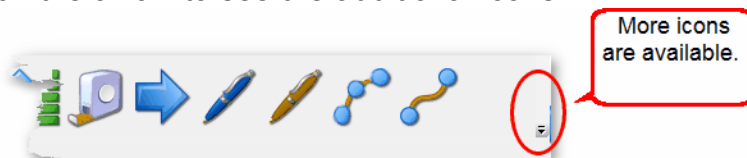
* **Stitching icons**^[39] control the sewing process and can be initiated by clicking the icon, or pressing the Mode button on the keypad until the icon is highlighted, and then pressing Select on the keypad. Each time the Mode button is pressed, the next *stitching icon* is highlighted. To highlight the previous feature icon, press (and hold) the Stop button and press Mode.

* **Design icons**^[43] are used to create new designs in the Preview area, prior to stitching them. Since they are not stitching functions, they can not be accessed using the keypad on the stitching head.

* **Right Click Icons**^[46] are used to change or adjust existing patterns/designs. They are listed on the right side of the screen (for people with newer systems) and they are accessible by right clicking an object (pattern, trim, boundary) on the screen.

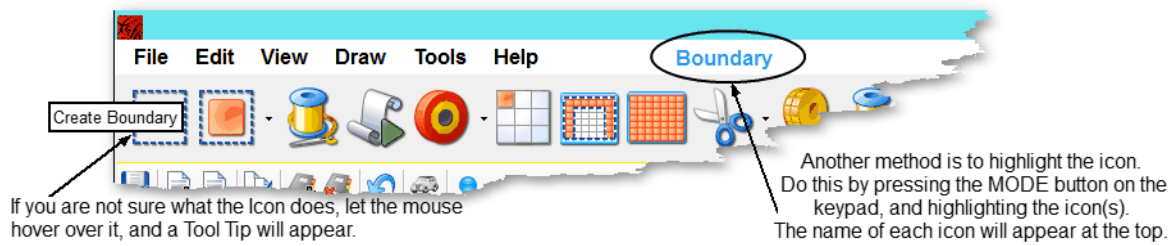


If your computer screen doesn't show all the icons as seen above, (lower resolution monitors can't fit them all) look for the small arrow at the far right side of the tool bar. Click on the arrow to see the additional icons.



Each of the features in all 3 categories can be initiated by using the mouse (to click the icon) or touching the icon (if you have a touch screen computer).

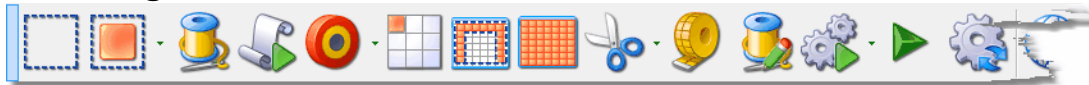
The screen also labels each icon:



Each icon in the top toolstrip (Stitching and Design categories) also has a Tool Tip, which will be displayed if the mouse hovers over the icon. The name of each function is also displayed in the title bar.

2.4.1 Stitching Icons

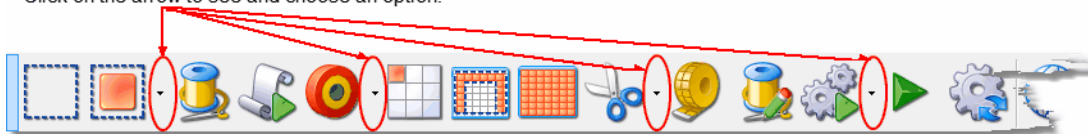
Stitching Icons initiate processes that use the sewing head.



Each of the features can be initiated by using the mouse (to click the icon) or touching the icon (if you have a touch screen computer) or pressing the Mode button on the keypad until the icon is highlighted, and then pressing Select on the keypad. Each time the Mode button is pressed, the next feature icon is highlighted. To highlight the previous feature icon, press (and hold) the Stop button and press Mode.

Several of the icons have options incorporated into the icon. These icons have small black arrows next to the icon. Clicking on the arrow will display the options. Your choices will remain active until you change them, even when switching projects or shutting down and restarting CS.

Several Icons have options.
Click on the arrow to see and choose an option.

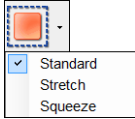


Boundary Icon¹⁷⁷ - Clicking on this icon will initiate a series of prompts, asking for the points that define the bounded area, the boundary anchor point and its baseline. Boundaries may have as few as 3 points (triangle) or may have hundreds (unlimited actually) of points, outlining almost any shape. Pressing the 'Stop' key will end the boundary definition and connect the last point with the first. Understanding pattern boundaries and reference boundaries is essential because **boundaries**⁸⁵ are used for pattern placement, positioning and references for many CS features.

Note: There is a similar **Draw Boundary**¹⁴⁹  function that uses the mouse to identify points on the screen instead of using the sewing head.



Pattern to Boundary Icon^[178] - This icon will move the selected pattern into the selected boundary. The pattern is resized to fit the boundary space.



There are three methods for **resizing**^[86] the pattern.

- * **Standard** is used when the boundary shape resembles the pattern shape. For instance, when both are square, the pattern is resized to fit the boundary but the pattern image is not changed significantly because they have the same basic shape.
- * **Stretch** is used when the shapes are different. For instance, moving a square pattern into a parallelogram will stretch the pattern to fit the boundary.
- * **Squeeze** is used when the boundary is very irregular. CS goes beyond just stretching a pattern to fit the boundary.



Quilt Icon^[79] - This icon initiates the stitching process, and is used in conjunction with all the other icon features. When using the default settings, the sewing head moves to the start point of the first pattern, takes a single stitch and shows a prompt to pull up the bobbin thread. Clicking OK/Select will begin the stitching, starting with the tieoff stitches (if enabled). When the quilting is done, CS again displays a prompt to pull up the bobbin thread, and click OK when done. The OK indicates the successful completion of the task. Clicking Stop means the task was not completed successfully.




Continue Icon^[206] - is most often used with **Edge-to-Edge**^[200] (which is the icon that does all the E2E pattern sizing and setup). When the first part of the E2E quilt is complete and has been rolled at least once, Continue will prompt for the registration point(s) and provide the prompts to complete each section until the quilt is complete. Continue (sometimes called Advance and Continue) can also be used in special cases like wholecloth quilts, when the patterns have all been positioned, but only part of them can be quilted at one time.



Point to Point Icon^[253] - This function is extremely powerful because it allows **patterns**^[177] (or lines) to be placed in very specific positions. Click on the arrow



on the right side to display the choices). CS will stitch a line or pattern between every pair of sequential (contiguous) points. It is very useful when making composite designs and when working on an area of the quilt that may not be perfectly aligned (like borders, sashings, and flying geese). Points are identified by moving the sewing head to the spot on the quilt, and pressing the OK/Select button. Selecting two points will define one line or pattern; three points defines two lines or patterns, ten points defines nine patterns, etc.

Note: There is a similar **Draw Sewable**^[153] function that allows the P2P lines  and P2P patterns



to be placed by identifying the click points on the screen instead of on the quilt.



[Repeat Pattern Icon](#)¹⁸⁰ - This function will use the pattern being highlighted, prompt for a reference point and allow you to specify [multiple repeats](#)⁹⁶ and/or rows. It does not require a boundary but usually a boundary is helpful when placing multiple patterns. It is very similar to the Edge-to-edge feature but more flexible especially with composite design elements.



[Border Corner Icon](#)¹⁹⁰ - This function is very useful when joining corner patterns with border patterns because it allows the patterns (corners first, then borders) to be selected, placed and previewed before stitching. This function also has the ability to compute the size of the patterns needed in the side borders. Each pattern can be ['adjusted'](#)⁸⁸ to fit the space exactly. Settings are saved as their own Border Corner Quilt Group.



[Edge To Edge Icon](#)²⁰⁰ - The Edge-to-Edge function initiates the pattern selection, sizing, positioning, and the first row(s) of quilting. The E2E function will prompt for the first boundary (which is the first section to be quilted) and the total quilt length. It uses these dimensions to suggest the number of rows and repeats needed to complete the quilting. Modifications are possible, and CS will adjust the counts (rows and repeats) and the pattern proportion (pattern length and height) if


needed to fit the total quilt. Use Continue  after rolling the quilt the first time.



[Trim Icon](#)¹²⁷ - The Trim function uses boundaries to define a space, and then will trim away the unwanted part of the quilting pattern. These boundaries are defined by moving the sewing head and clicking points around the area to be trimmed, creating a perfect fit. The trim can be done to the pattern [inside](#)²⁵⁶ or [outside](#)²⁵⁷ of the bounded area so make that choice first using the arrow to the right



of the icon.

Note: There is a similar [Draw Trim](#)¹⁵¹  function that uses the mouse to identify points on the screen instead of using the sewing head.



[Measure Icon](#)⁸² - The measure function will help obtain [exact measurements](#)⁹³ for the quilt area you choose. It uses the sewing head to identify two points; the beginning and ending point of a line. Based on this line, CS displays the measurement of the absolute height, absolute width, the actual length (which is the diagonal) and it gives the angle (number of degrees of rotation) of the defined

line. This utility will allow multiple measurements to be taken consecutively, so choose Cancel to exit the Measure Mode. It is possible to [transfer a measurement](#)^[94] to one of the settings in a property box.

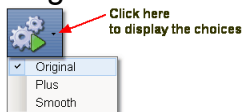
Note: There is a similar [Draw Measure](#)^[159]  function that uses the mouse to identify points on the screen instead of using the sewing head.



[Restart Quilting Icon](#)^[228] - The Restart function is used whenever the machine stops by itself (thread break) or the Stop button is pressed. The process can begin stitching at exactly the spot where the stitching stopped (great if you needed to press the Stop button) or it can be adjusted to restart at any other point (great if the bobbin ran out and the thread break sensor didn't detect a break immediately). It is possible to define the restart point using the sewing head and the quilt top, or the mouse and the computer screen.



[Regulated Sewing Icon](#)^[242] There are several choices for stitching with the stitch regulator (Original, Plus, Smooth). Recording patterns while using the stitch regulator is possible with any of the choices. To choose a mode, click on the arrow to the right of the icon and a drop-down box appears with the following:



- * **Original** refers to the original stitch regulator action, which did not keep the needle running around the corner.
- * **Plus** is designed to keep the needle running at points or corners. This guarantees a sharp point, like the Gammill Plus machine.
- * **Smooth** has a different power curve (needle up/down speed) for people who don't pause at points, but do slow down going into the point and coming out of it.



[Constant Speed Icon](#)^[242] - When constant sewing is started, the needle starts stitching, and it is up to the quilter to move the sewing head smoothly and consistently. The quilter's motion determines the stitch length, not the sewing head. This function is preferred by some when doing micro-stipple backgrounds in custom quilting. Use constant speed sewing when winding bobbins using the on-board bobbin winder.



[Baste Icon](#)^[242] - is special because it is designed for stitching slowly and it will not push / stretch the fabric. It is essentially individual long single stitches done continuously. Stitch length can be as long as 4 inches.

2.4.2 Design Icons

Design Icons help create designs on the screen.



Many of these icons correspond to the DRAW command and will initiate processes used to draw new patterns using the touch screen and/or the mouse. These processes are often called 'modes' so you will see this term used here.

Modes are initiated by clicking or tapping one of the Design Icons. It is ended by tapping the same icon, or by pressing the Escape key on the keyboard. It can also be terminated by touching and holding any spot in the Preview area. (A small black rectangular box appears momentarily, there is an audible 'chime' sound, and the modes is terminated.)



View All Icon - is a fast way to zoom out far enough to see all the boundaries and patterns in the current quilt group.



Select All Patterns Icon is a fast way to treat all patterns as one entity. This selects them but does not combine them permanently.



Zoom In - for use with a touch screen. Tap the icon, and then swipe the screen as many times as needed to get as close as needed. Items in the Preview Area appear larger, but the stitchable pattern size hasn't changed.



Zoom Out - for use with a touch screen. Tap the icon, and then swipe the screen as many times as needed to get as far away as needed. Items in the Preview Area appear smaller but the stitchable size hasn't changed.



Pan Patterns - for use with a touch screen. Tap the icon, and then swipe the screen, dragging your finger across the screen. The images on the screen are repositioned, in the direction you choose.



Cycle Pattern Anchor Type - changes the anchor type. Select a pattern by clicking or tapping it. Selected patterns appear as magenta color on the Preview Area. They also have handles around them, which determine how the pattern will change when it is resized. Each type of handle is a different color/size, and this icon lets you cycle through the types, until you find the [pattern anchor](#)¹⁴⁶ you need.



Set Sewing Order - Click or tap this icon and all of the patterns on the Preview Area will be labeled with colored numbers (at the beginning of the pattern) and arrows (at the end of the pattern). Each pattern has a matching color for the sequence number and the direction arrow, so you can associate the two together. Click or tap the arrow to change the stitching direction. Click or tap the number in ascending sequence to change the [sewing order](#)^[146].



Measure with mouse^[159] on CAD - Click or tap this icon and see the measurement box appear at the bottom right corner of the preview area. Use either your mouse or finger to tap the item on the screen once at the beginning and once at the end of the area being measured and the measurements will be calculated. This includes absolute height (vertical), absolute width (horizontal), length (diagonal) and degrees of rotation (slope of the diagonal). Tap the upper right "X" to close the measurement box, or tap this icon again.



Make Next Left Click a Right Click - for use with a touch screen. In previous versions of CS, many options were listed in the "Right Click" dialog box. These still work for people who choose to use the mouse. For people who prefer touch screen technology, the "Right Click" dialog box can be found by touching this icon first, then the screen (pattern or open space) and it will appear.



Draw Boundary on CAD - drawing a boundary on the screen. Click or tap this icon to begin [Draw Boundary Mode](#)^[149]. Then tap the screen at each boundary point. Touch and hold, anywhere on the screen, and CS will complete the boundary. The first 2 touches define the baseline which CS uses for pattern positioning. The last touch completes the boundary but that last touch is not included in the boundary. Multiple boundaries can be made while in this Mode. Tap the icon a second time to get out of Draw Boundary Mode, or press the Escape key.



Draw Trim on CAD - for drawing a trim boundary on the screen. Click or tap this icon to begin [Draw Trim Mode](#)^[151]. Then tap the screen at each boundary point. Touch and hold, anywhere on the screen, and CS will complete the trim boundary. The last touch completes the boundary but that last touch is not included in the boundary. Multiple Trim boundaries can be made while in this Mode. To exit Draw Trim Mode, touch this icon again, press the Escape key, or touch and hold some point on the screen until a little black box appears temporarily, then release.



Draw Arc on CAD - for drawing an arc on the screen. Click or tap this icon first to begin [Draw Arc Mode](#)^[153]. Then touch the screen at 3 points (the beginning, the middle and the end). The arc is a sewable pattern that appears on the Preview

Area. Multiple Arcs can be made while in this Mode. To exit Draw Arc Mode, tap this icon again, press the Escape key, or touch and hold some point on the screen until a little black box appears temporarily, then release.



Draw Curve on CAD - for drawing a curve on the screen. Click or tap this icon first to begin [Draw Curve Mode](#)^[155]. Touch the screen in a series of points and a curve will be drawn that connects the points. The curve is a sewable pattern that appears on the Preview Area. Multiple Curves can be made while in this Mode. To exit Draw Curve Mode, tap this icon again, press the Escape key, or touch and hold some point on the screen until a little black box appears temporarily, then release.



Draw Line on CAD - for drawing a line or series of lines on the screen. Click or tap this icon first to begin [Draw Line Mode](#)^[156]. Touch the screen, identifying a series of points, and a P2P line will be drawn that connects the points. The line is a sewable pattern that appears on the Preview Area. Multiple Lines can be made while in this Mode. To exit Draw Line Mode, tap this icon again, press the Escape key, or touch and hold some point on the screen until a little black box appears temporarily, then release.



Draw Freehand on CAD - for drawing freehand on the screen. Click or tap this icon first to begin [Draw Freehand Mode](#)^[157]. Using either your finger or the mouse, trace a design on the screen, freehand. The design is a sewable pattern that appears on the Preview Area. Multiple drawings can be made while in this Mode. To exit Draw Freehand Mode, tap this icon again, press the Escape key, or touch and hold some point on the screen until a little black box appears temporarily, then release.



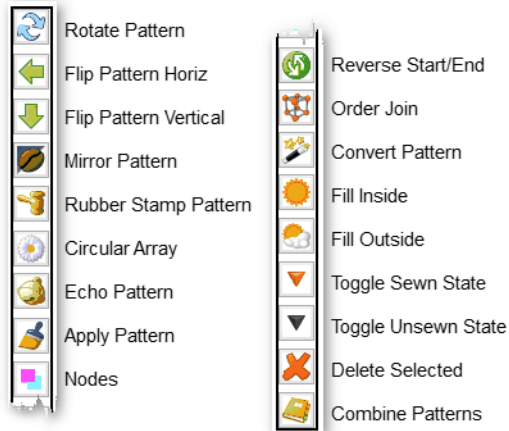
Draw P2P Pattern on CAD - for moving a series of patterns to the screen. Be sure a [P2P pattern](#)^[77] is included in your project. Select it and adjust the size and aspect ratio ([Freeze Aspect](#)^[91]) as need. It should be highlighted in the pattern list. Click or tap the P2P Pattern icon to begin [Draw Pattern Mode](#)^[157]. Click or tap the screen, identifying a series of points, and the pattern will be drawn between each pair of contiguous points. To exit Draw Mode, tap this icon again, press the Escape key, or touch and hold some point on the screen until a little black box appears temporarily, then release.



Help ? Icon is context sensitive help. Just in case you have forgotten something, you can click on the Help?, the cursor turns into a question mark, which can be moved to the item in question. By clicking again, a dialog box will appear that will briefly explain the icon.

2.4.3 Right Click Icons

Right Click Icons are shortcuts for the functions available using the mouse right-click. Tap or click the icon to begin the function.



Rotate Pattern - First select the pattern(s) to rotate. Then tap or click the icon, and the pattern will rotate 90°. Click here for more details on [Rotate Pattern](#)^[107].



Flip Pattern Horizontal - First select the pattern(s) to flip. Then tap or click the icon, and the pattern will flip horizontally. Click here for more details on [Flip Horizontally](#)^[108].



Flip Pattern Vertical - First select the pattern(s) to flip. Then tap or click the icon, and the pattern will flip vertically. Click here for more details on [Flip Vertically](#)^[108].



Mirror Pattern - This feature allows the pattern to be mirrored, using an axis line that is not necessarily horizontal or vertical. Click here for more details on [Mirror Pattern](#)^[109].



Rubber Stamp Pattern - This feature allows multiple copies of a pattern to be made. Click here for more details on [Rubber Stamp Pattern](#)^[110].




Circular Array - This feature will make multiple copies of a pattern and place them in a circular array on the screen. Click here for more details on [Circular Array](#)^[111].





Echo Pattern - This feature will create a new pattern that outlines the edge of a selected pattern. Click here for more details on [Echo Pattern](#)^[112].





Apply Pattern - This feature combines two patterns, where one pattern provides the path and the other ([P2P](#) pattern^[77]) provides the design that is placed along the path. Click here for more details on [Apply Pattern](#)^[114].


 **Nodes** - This feature shows a pattern broken down into segments, and allows those segments to be manipulated. Click here for more details on [Nodes](#)^[116].


 **Reverse Start/End** - This feature switches the direction of the stitching path. Click here for more details on [Reverse Start/End](#)^[119].


 **Order Join** - This feature will join and sequence pattern segments. Click here for more details on [Order Join](#)^[120].

 **Convert Pattern** - This feature will allow a pattern to be converted into another object (like a boundary, trim, curve or outline). Click here for more details on [Convert Pattern](#)^[121].


 **Fill Inside** - This feature works with both a boundary and a pattern, modifying the pattern to stitch only the inside area of the selected boundary. Click here for more details on [Fill Inside](#)^[128].

 **Fill Outside** - This feature works with both a boundary and a pattern, modifying the pattern to stitch only the outside area of the selected boundary. Click here for more details on [Fill Outside](#)^[128].

 **Toggle Sewn** - Selected patterns are changed to have a 'sewn' status. Click here for more details on [Toggle Sewn](#)^[132].

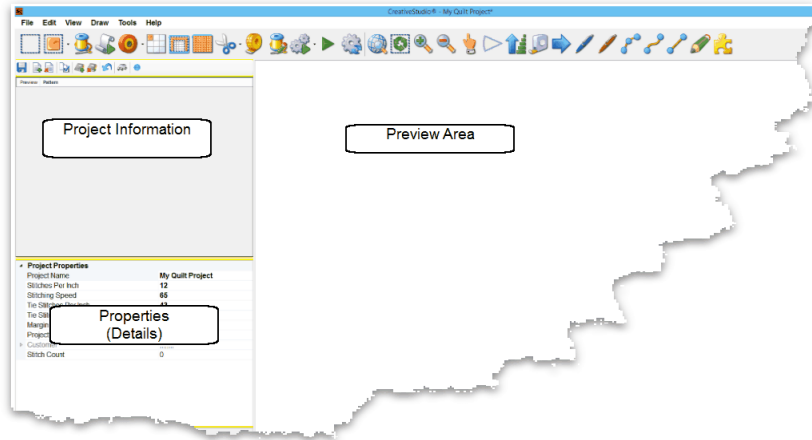
 **Toggle Unsewn** - Selected patterns are changed to have an 'unsewn' status. Click here for more details on [Toggle Unsewn](#)^[132].

 **Delete** - Selected patterns are deleted. Click here for more detail on [Delete](#)^[133].

 **Combine Patterns** - Selected patterns are combined, in the order they were selected. Click here for more details on [Combine Patterns](#)^[138].

2.5 Work Area

Work Area is divided into three distinct parts.



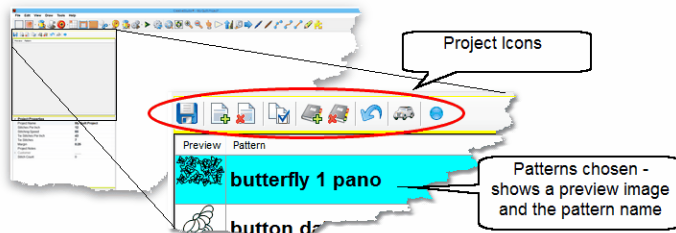
[Project information](#)^[48] is also known as the Project Explorer.

[Properties](#)^[49] window will list the settings and other details.

[Preview Area](#)^[60] is also called the CAD Screen by techy types. The images of the quilting designs appear here.


2.5.1 Project Information


Projects collect and hold the information needed to do a whole quilt. Technically a project is a file but thinking of them as a notebook or as a folder is sometimes easier. The Project Information area of the screen shows the patterns chosen for this project. Each pattern has a thumbnail size image and the pattern name listed.




Throughout the quilting process, the Project icons can be used.





 [Save Project](#)^[67] - saves the project file. If a name has not been given to the file, CS will prompt for one.


 [Add Pattern](#)^[82] - initiates the process of looking, previewing and choosing a pattern for this project.


 [Remove Pattern](#)^[82] - will remove a pattern from this project.


 [Project Properties](#)^[50] - displays the project details in the Properties window.

 [Add Quilt Group](#)^[70] - will create a new tab, prompt for a name for the tab, and create a preview area for the new quilt group tab. Some CS functions automatically create a new quilt group.

 [Remove Quilt Group](#)^[73] - will delete the current tab. CS will ask for confirmation before deleting the tab because it can't be retrieved.

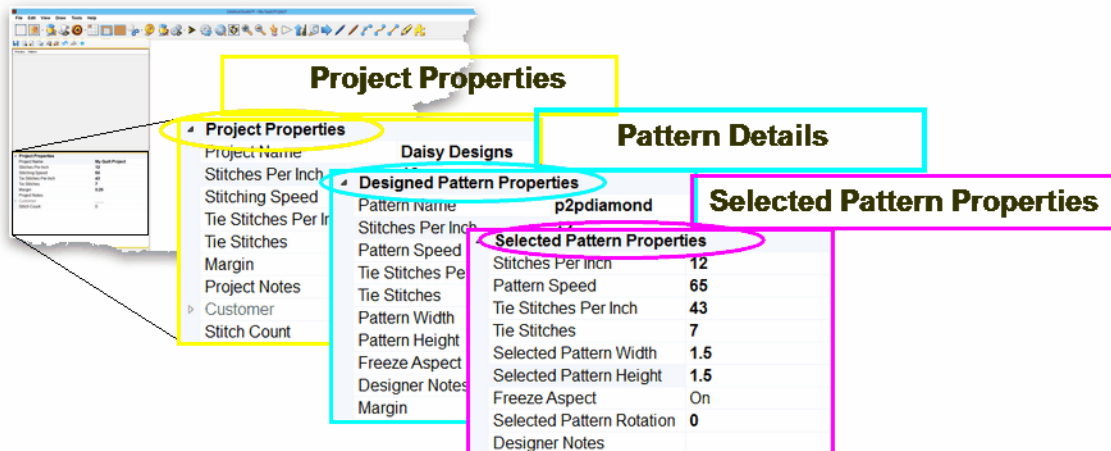
 **Undo Last Operation** - will undo the last command. CS remembers most of the operations, and their sequence, so 'Undo' commands can be repeated multiple times.

 [Export Pattern](#)^[139] to CSQ - will combine the selected pattern(s), and export them to a pattern file with the .csq file extension. If the project has any encrypted patterns, all the exported designs will also be encrypted, with .csqx file extension.

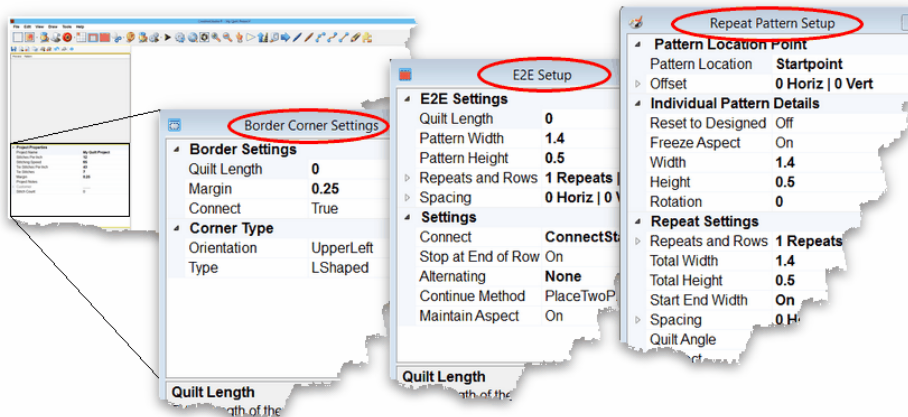
 [Virtual Stitchout](#)^[144] - Will provide a preview of the stitching path for all unsewn patterns on the screen. Any time there is a break in the stitching path, CS will sound an audible bell sound.

2.5.2 Property Window

Properties (aka settings) are the details that define how (and what) the sewing head will stitch. These details may apply to a [project](#)^[50] (**yellow frame**), a [pattern](#)^[51] (**cyan frame**), or a [selected pattern](#)^[53] (**magenta frame**). The frame around the details area is color coded to help convey which details are being displayed.

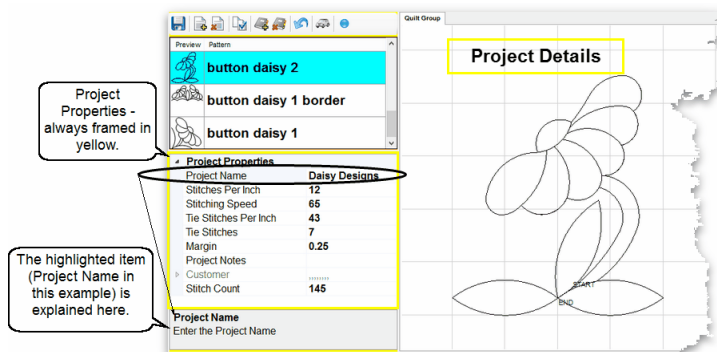


Settings can also apply to a process. Several important quilting features (and [Border/Corner](#)^[190], [Edge To Edge](#)^[200], and [Repeat Patterns](#)^[212]) require a series of steps and additional information. [Process](#)^[54] settings provide the extra information.



2.5.2.1 Project Details - Yellow Frame

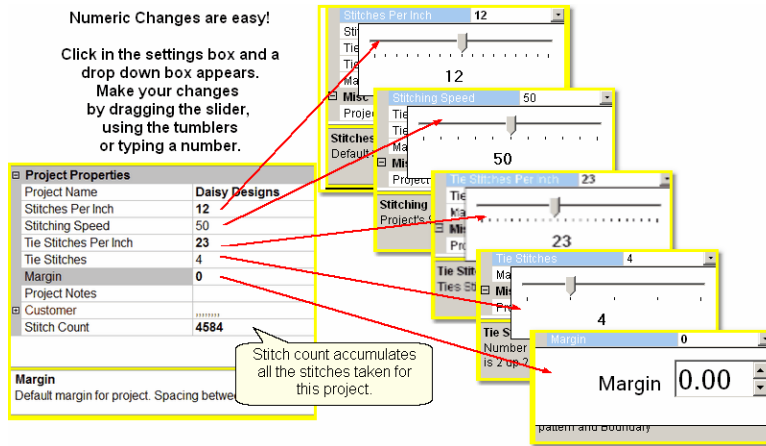
Project Properties - appear in the Property Window and are framed with a yellow line.



Changing the Project Properties:

Project Name^[67] – The default name for all projects is "My Quilt Project". When you save your project, you will be prompted to change this to something unique.

The settings are inherited from the **default settings**^[164] (on the Controller Definition form). If any setting is changed here, all patterns selected for this project **after the change** will use the new setting.



Stitches per Inch (SPI) setting will apply to all the patterns selected for the project.

Stitching Speed is measured as a percentage of maximum motor speed.

'50' means 50% of the maximum speed.

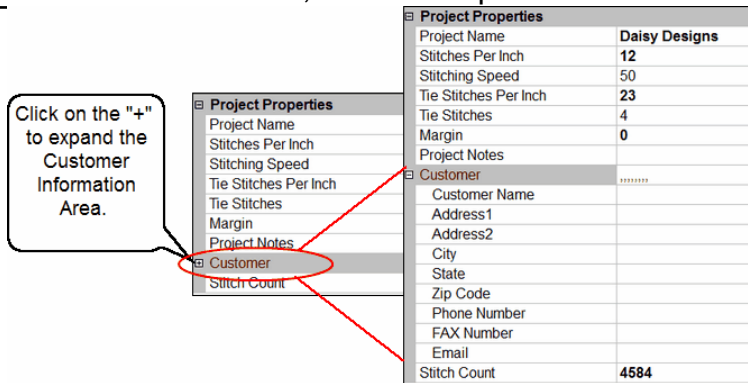
Tie Stitches Per Inch is the size of the stitches taken when doing tieoffs.

Tie Stitches is the number of stitches taken when doing tieoffs.

Margin is the distance between the stitch lines and the boundary lines, at the closest point.

Project Notes can contain any text you wish to save. Click on the Project Notes field, add your text in the memo area. Click OK when done and it will be saved in the project.

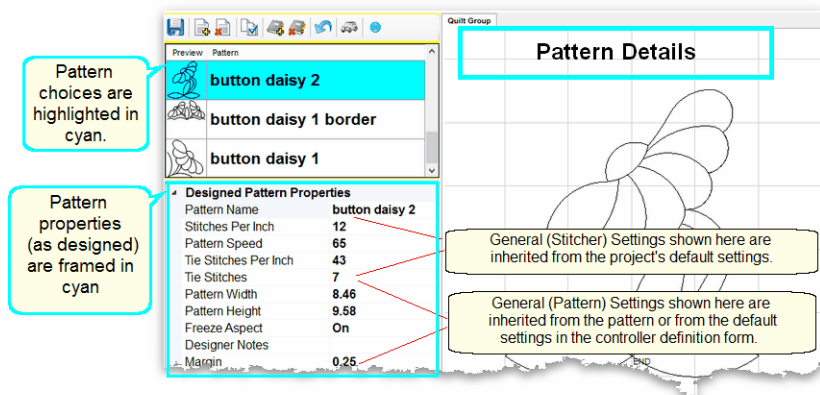
Customer - In this area, customer specific information can be kept.



Stitch Counter is the cumulative number of stitches for this project.

2.5.2.2 Pattern Details - Cyan Frame

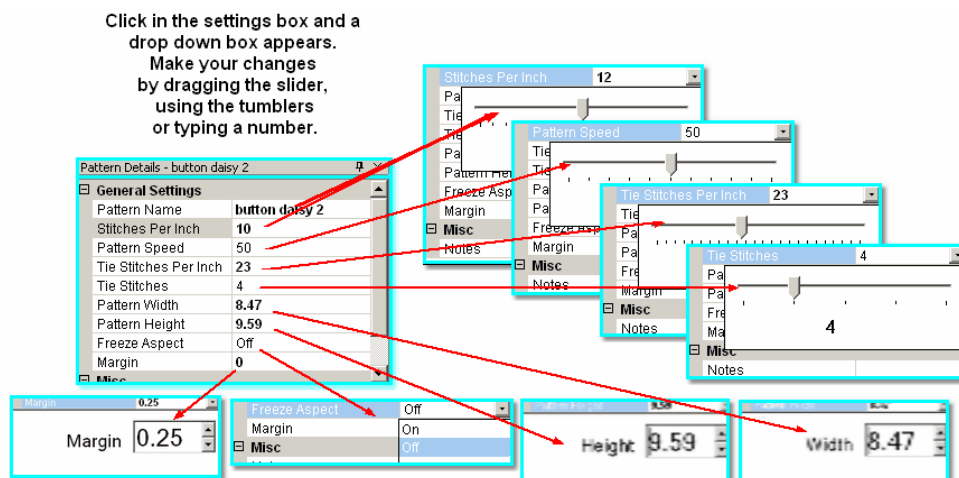
Designed Pattern Properties are framed with a cyan line. They display settings that apply to the pattern selected in the pattern list. Designed Pattern Properties are framed in cyan (to match the cyan highlighting in the Pattern list). Encrypted patterns will be highlighted in cyan when selected, and when not selected, the pattern image will still be highlighted but in a light blue, not cyan.



Changing the Designed Pattern Properties:

General (Stitcher) Settings for this pattern have values that are inherited from the [project settings](#)^[50] (which were inherited from the [current defaults](#)^[164]). If any setting is changed here, it will apply to the patterns that are moved into the preview area **after the change**, not those that have already been moved into the preview area.

General (Pattern) Settings have values that are inherited from the pattern (as originally defined by the pattern designer). If any settings are changed here, the change will apply to copies of this pattern that are moved into the preview area **after the change**, not those that have already been moved into the preview area.



Stitches per Inch applies to this pattern.

Pattern Speed is measured as a percentage of maximum motor speed. '50' means 50% of the maximum speed.

Tie Stitches Per Inch is the size of the stitches taken when doing tieoffs.

Tie Stitches is the number of stitches taken when doing tieoffs.

Pattern Width is the width of one pattern, measured at the widest point.

Pattern Height is the height of one pattern, measured at the tallest point.

Freeze Aspect^[91] - 'ON' means the ratio of Height:Width remains the same when the

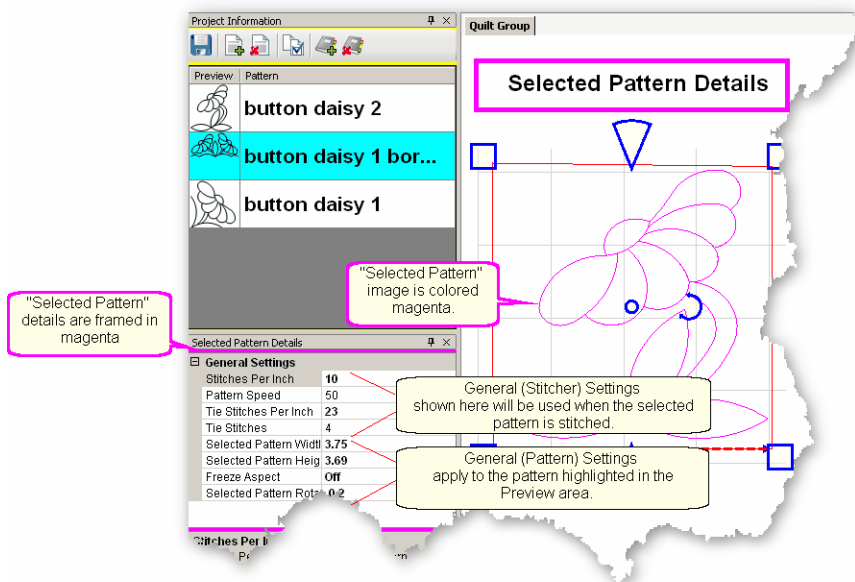
size changes. So, if one of the dimensions is changed, CS will change the other automatically to keep the ratio the same. 'OFF' means CS will allow the ratio to be distorted.

Designer Notes - may have notes from the designer but can be modified to include your notes about this pattern.

Margin is the closest distance between the stitch lines and the boundary lines.

2.5.2.3 Selected Pattern Details - Magenta Frame

Selected Pattern Details are framed with a magenta (hot pink) line. These details apply to the pattern selected in the [preview area](#)^[60] (not the one highlighted in the pattern list). The magenta color was chosen to match the highlighting in the Preview area.

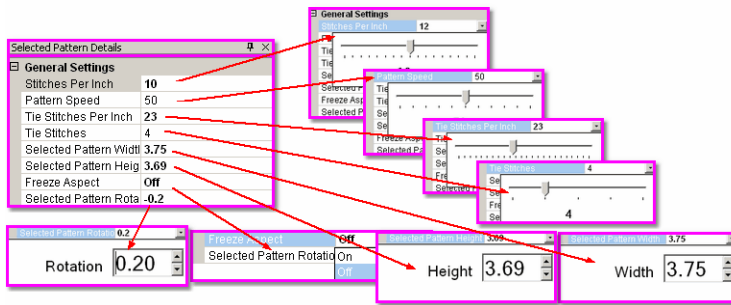


Changing the Selected Pattern Details

General (Stitcher) settings have values that apply to the highlighted pattern and were inherited from the pattern settings (which were inherited from the [Project Settings](#)^[50] which were inherited from the [default settings](#)^[164]).

General (Pattern) settings apply to the characteristics of the pattern highlighted in the preview area.

Click in the settings box and a drop down box appears. Make your changes by dragging the slider, using the tumblers or typing a number.



Stitches per Inch applies to this pattern.

Pattern Speed is a percentage of maximum motor speed. '50' means 50% of the maximum speed.

Tie Stitches Per Inch is the size of the stitches taken when doing tieoffs.

Tie Stitches is the number of stitches taken when doing tieoffs.

Selected Pattern Width is the width of one pattern.

Selected Pattern Height is the height of one pattern.

Freeze Aspect - 'OFF' means the Height & Width are independent of each other.

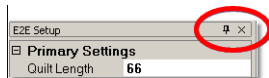
Selected Pattern Rotation is the number of degrees that the pattern is angled.

Designer Notes - available for your notes about this pattern.

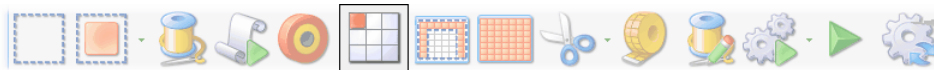
2.5.2.4 Process Details - Gray Frame

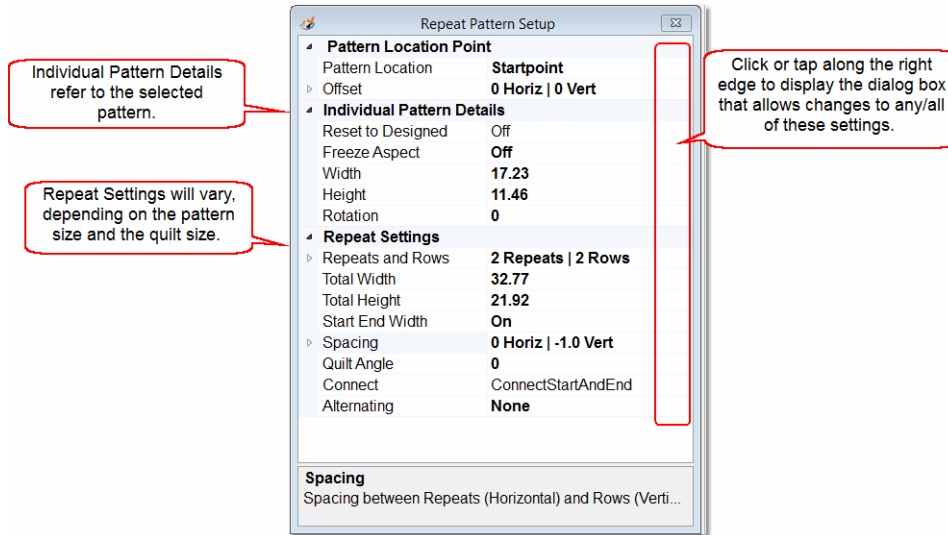
Process Details appear in the Property Window and are framed in gray. There are three processes that need additional details for the setup mode; [Repeat Patterns](#) [180], [Border Corner](#) [190] and [Edge-to-Edge](#) [200]. Separate quilt groups are created for each of them. The settings are introduced here and will be explained in detail when used in context.

The Title Bar will always specify *Which Details* are being displayed. The "X" will exit, or close the details.



1.) The Repeat Pattern Setup controls the dimensions and placement of repeated patterns. This process is used when multiple copies of a particular pattern are needed. It contains the settings which determine which pattern will be used, where the pattern will be stitched and how many times it is repeated.





Pattern Location Point aligns the repeated patterns (on the CAD) to the quilt top. Pattern Location uses the position of the sewing head to indicate where to place the repeated patterns.

Offsets are used if the repeated patterns need to be positioned some distance from the initial location point. As an example, the location point may be the upper left corner of the quilt, but the repeated patterns are intended for an inner area, which starts some distance away. This distance is measured in two directions, moving Horizontally and Vertically.

Individual Pattern Details refer to the pattern selected.

Reset to Designed means any/all changes that were made to the selected pattern will be undone, and the pattern reverts to the original dimensions, as designed.

Freeze Aspect⁹¹ - 'ON' means the ratio of Height:Width remains the same when the size changes.

Width is the width of one pattern.

Height is the height of one pattern.

Rotation is the number of degrees that each pattern is angled.

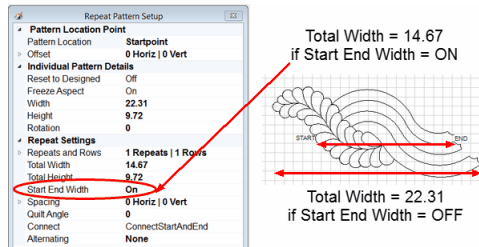
Repeat Settings show how many repeats and rows are needed to fill the space.

Repeats and Rows are variables.

Total Width and Total Height are variables also. They will be calculated automatically but can also be modified. Note: Several of the settings below have an impact on the layout of the patterns which also affects this calculation.

Start End Width - The width of a pattern is usually the widest part of the pattern.

However, when patterns nest together, the distance between the startpoint and the endpoint is less than the total width. When StartEnd Control = OFF, CS will use the widest part as the width for repeat calculations. When StartEnd Control = ON, CS will use the distance between the startpoint and endpoint as the width for repeat calculations.



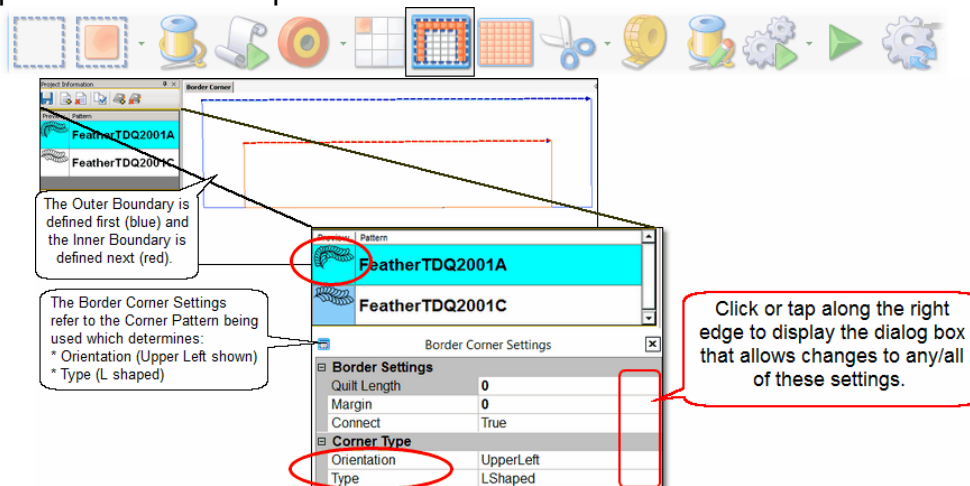
Spacing - The pattern placement can be adjusted as desired. The Horizontal spacing affects the space between the repeats. The Vertical spacing affects the space between rows. Space can be increased (positive spacing) or decreased (negative spacing). CS automatically includes the spacing adjustment when it calculates the Total Width and Total Height of the area to be quilted.

Quilt angle - is the number of degrees that the set of repeated patterns is angled.

Connect... affects how CS connects the patterns. Bobbin PullUp means patterns are placed side by side and CS stitches them individually. ConnectStartAndEnd means CS places them so the end point of one pattern connects with the start of the next pattern, and CS stitches them as one continuous row. Naturally, this affects the total width calculation.

Alternating... - allows the rows to be staggered by adding an extra repeat to every other row. There are three choices; None (default), Plus Row on Top (the extra repeat begins with the first row), Minus Row on Top (the extra repeat begins with the second row).

2.) The Border Corner ¹⁹⁰ **Settings** control the placement of the corner patterns, and can place the border patterns at the same time. CS creates a new quilt group for this process called 'Border Corner'. The process will prompt for the outer border first, then the inner border. This gives CS enough information (along with the settings) to position the corner patterns.



Note: CS can tell if this is an upper or lower border by the distance between the two boundaries.

Border Settings:

Quilt Length is needed for the calculations to determine how big the side border patterns will be.

Margin is the distance between the pattern and the boundary.

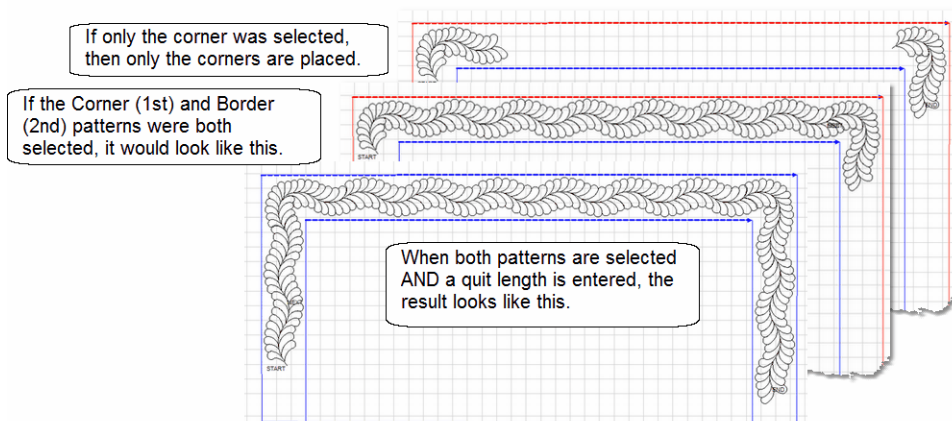
Connect - True means CS will connect the border patterns to the corners. False leaves them separated.

Corner Types:

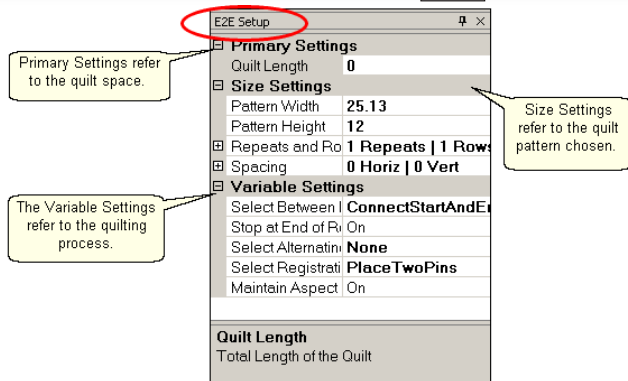
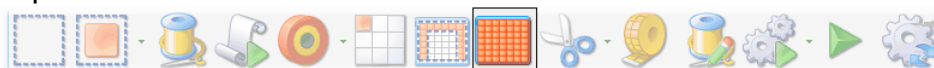
Orientation refers to the shape of the original design. Make a choice based on the original design; does it look like the corner would fit in the Upper Left corner? UR? LR? LL?

Type refers to the overall shape and how it should be positioned, relative to the rest of the quilt.

- * "L" shaped corners extend past the corner into the border area.
- * Square corners have the top upright and the bottom upside down.
- * Square oriented corners are rotated in 90 degree increments.
- * Angled corners are angled toward the inside at each of the four corners.



3.) The Edge To Edge Settings control the placement of repeated patterns. The process defines all the repeats required to fill an area of the quilt top. It works in conjunction with the Continue process, which helps to position the rows of quilting after the quilt top has been rolled. The settings are introduced here and will be explained in detail when used in context.



Primary Settings refer to the quilting space.

Quilt Length is to the total length of the space to be quilted. Measure the space and then subtract the margin amount twice (top & bottom).

Size Settings refer to the quilt pattern chosen (highlighted in the Project Information box).

Pattern Width is the width of one pattern.

Pattern Height is the height of one pattern.

Repeats and Rows will be calculated by CS based on the pattern size and the quilt space (Length and width). Changes to the number of repeats and rows will adjust the pattern size to fit the quilt space.

Spacing allows the rows and columns to be nested if needed. The spacing measurements are positive if extra space is needed between rows or repeats. Spacing measurements are negative if space is removed between the rows or repeats.

Variable Settings refer to the quilting process and the stitching preferences.

Select Between Blocks tells CS what to do between patterns. The patterns can be connected (no stop between them) or individual (CS stops, does tieoffs and bobbin pullups).

Stop at End of Row tells CS to stop and tieoff at the end of each row.

Select Alternating Type describes the pattern positioning. 'No' alternating means the patterns are placed like a spreadsheet, creating rows and columns. The other choices allow every other row to be staggered, making the repeats less noticeable.

Select Registration describes what CS should use as the registration points so the rows don't get out of alignment when the quilt top is rolled. The preferred method is "End of Set" which is why it is the default.

Maintain Aspect - is similar to Freeze Aspect for a pattern. 'ON' means CS will avoid distorting the pattern proportions if at all possible. Some minor distortion may be necessary to completely fill the quilt space.

2.5.2.5 Inheriting Settings

A word about settings and the level of inheritance of settings.

Level 0: Tech support at Statler Stitcher controls all settings. Period. They do allow some of the settings to be modified by the users, as follows:


L1: [Default settings](#)^[232] (that the users can modify) are shown in the Controller Definition form. A change to this form is permanent going forward (until you change it again). These changes are not retroactive.

L2: Settings can be changed for the **current session** (✓Tools on command bar). A change at this level applies to all new activity for the rest of the session. Changes are not retroactive. Nor are they permanent.

L3 Settings^[50] can be changed for a **single project**. A change at this level applies to all new activity for that project during the current session. Changes are not retroactive or permanent but they are saved with the project so the next time the project is opened, the settings will apply.

L4 Settings^[51] can be changed for a **single pattern within a project**. A change at this level applies to all new activity for that pattern in that project during the current session. Changes are not retroactive and do

not affect other projects but they can be saved with the project.

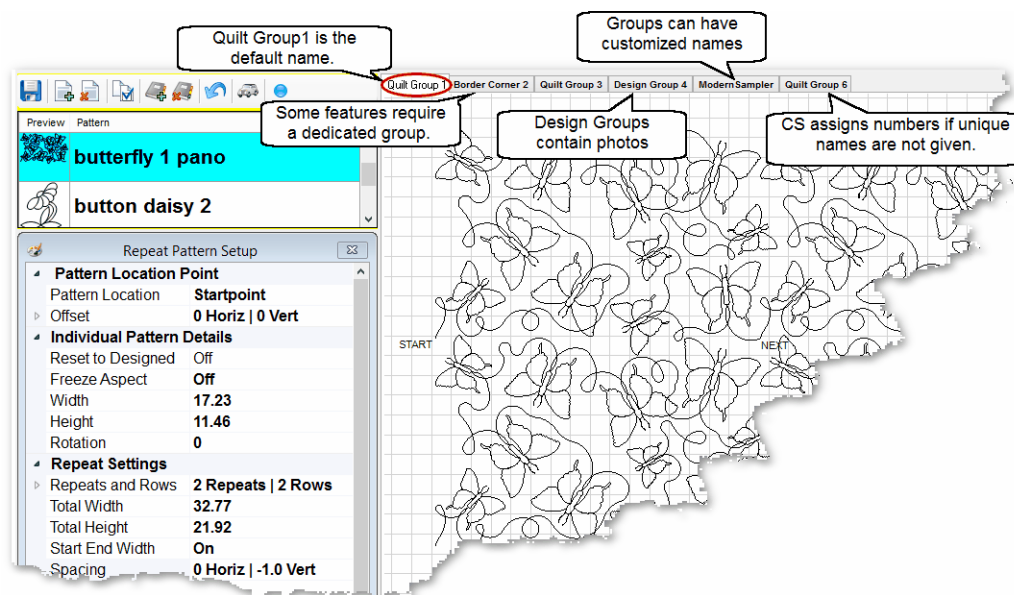
L5 Settings  can be changed for a **pattern that has been selected** and is visible in the preview area of the screen. These changes are not retroactive and have no effect on any other patterns in the project. These changes will not affect the same pattern if it is used again in this project in the future . This is the bottom of the hierarchy.

Settings always cascade forward and down, never backward or up.

2.5.3 Preview Area (CAD Screen)

The Preview Area – (also called the CAD window by techies) is the big, white area where the images of the patterns, boundaries and photos appear. Think of the project as a binder, with tabbed dividers. Each tab is a quilt group and each can hold any of these images. By default, the project starts with "Quilt Group1". Each quilt group added can be given a specific name. CS counts the number of groups being used, and will assign an incremental number to the tab if a name is not provided. CS also has some special processes that require a dedicated Quilt Group.

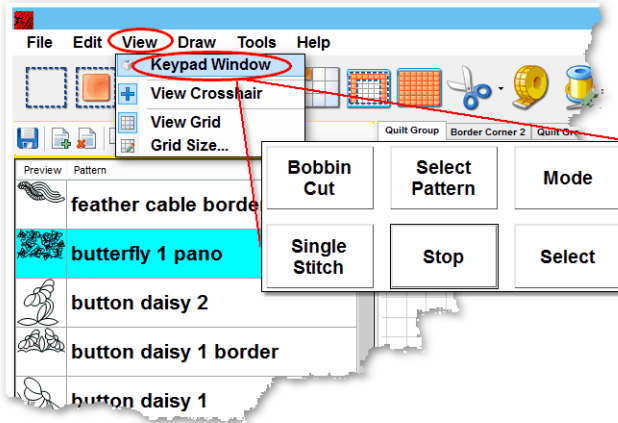
Each time a photo is imported, it is placed in a new tab, called Design Group. The photo will not impact the stitching. It is just there to help make design decisions since patterns can be positioned on top of the photo, to check the fit. Additional imports will add additional groups to the project.



Tip: Use the first tab (called Quilt Group 1) to preview your patterns together. This is a fast and easy way to audition patterns and determine the right pattern scale. When the patterns are chosen and previewed, change the name of this tab to 'Preview' or something similar, so you remember that you previewed your patterns. Then save the project (with a descriptive file name) so all the details are readily available when it is time to complete this quilt.

2.6 Keypad Window

The Keypad Window shows an image of the six buttons on the sewing head keypad. Using the keypad reduces the number of times you must walk to the computer and select an option. To view the keypad image, click on View, then click on Keypad Window and the image will appear in the lower right corner of the CAD screen. Repeat this to remove the keypad image (the image toggles on and off). Viewing the keypad window is one of the preferences each person can choose, when setting their [stitching defaults](#)¹⁶⁴ using the controller definition form.



Keypad Buttons can be used instead of the mouse in certain situations. Each button can have multiple meanings, depending on the task being performed. The following defaults are the most common:

Bobbin Cut - will initiate the bobbin pull-up sequence.

Select pattern - will scroll through the list of selected patterns in the Project Information area.

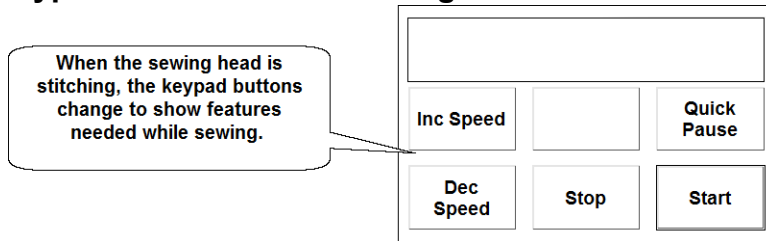
Mode - will highlight each Stitching icon on the top Tool Bar, moving forward sequentially. **To go backwards, press and hold the Stop button, and then press the Mode button.**

Select - initiates the feature represented by the icon that is currently highlighted.

Stop - terminates the feature currently running.

Single Stitch - will complete one stitch when pressed. Holding down the button will result in a series of single stitches which is useful when basting or doing your own tieoffs.

Tip: The buttons in the handles of the machine head are hard-wired to two of the controls on the keypad. The left handle is connected to the lower left keypad button and the right handle is connected to the lower middle keypad button.

The keypad button controls change.

Stitcher Control Window shows the choices when the machine is sewing.

Inc Speed - will increase the motor speed by 5% every time it is pressed.

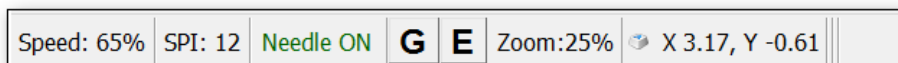
Dec Speed - will decrease the motor speed by 5% every time it is pressed.

Quick Pause - will stop the sewing head immediately, and remember where it is, so it can resume. This button is replaced by Quick Start which resumes the stitching exactly where it stopped.

Stop - will stop the sewing head immediately. Press Stop again to terminate the current stitching. Use the Restart feature to continue the line of stitching.

2.7 Status Bar

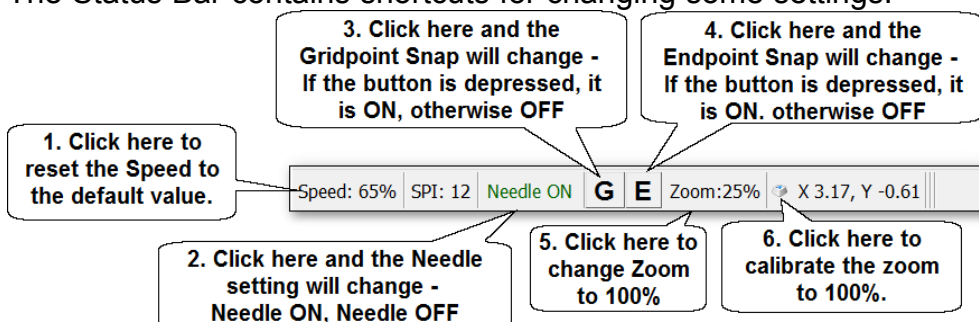
The Status Bar displays the current status of the operation being performed.



Beginning at the left, some current settings are shown.

- * Speed is expressed as a percent of the maximum motor speed.
- * SPI refers to the stitches per inch, for the pattern being stitched.
- * Needle Status is ON or OFF
- * The buttons labeled 'G' and 'E' refer to [Gridpoint](#) or [Endpoint](#) Snaps. When manipulating patterns, these Snap buttons assure accurate alignment.
- * Zoom percent describes how large the designs are on the CAD screen, compared to what they will be when stitched.
- * Zoom Set icon will allow you to calibrate your screen image, so the 100% is true.
- * X and Y co-ordinates define the position of the sewing head.

The Status Bar contains shortcuts for changing some settings.



1. Speed - If the word "Speed" is purple, it has been changed while stitching (by pressing the Inc Speed or Dec Speed buttons). Click on the word 'Speed' to go back to the selected pattern's default value.
2. Needle ON (or OFF) - Click on the word 'Needle' to change this to ON or OFF.
3. "G" - is the Gridpoint Snap. Click on this button to turn on Gridpoint Snaps. If this button looks like it is depressed, the Gridpoint Snap is already on. Clicking it again turns it off. Clicking on the "G" key on the keyboard does the same thing.
4. "E" - is the Endpoint Snap. Click on this button to turn on Endpoint Snaps. If this button looks like it is depressed, the Endpoint Snap is already on. Clicking it again turns it off. Clicking on the "E" key on the keyboard does the same thing.
5. Zoom - Click on the word 'Zoom' to reset the perspective on the Preview area. This is not obvious unless the Grid is being displayed (click View, click View Grid).
6. Zoom Reset icon - enables the grid to be resized, so the requested Grid Size is a true measurement. This can be calibrated by using a 1" square paper template or ruler. First, be sure the Grid is visible. Next, hold the template or ruler on the screen, and zoom in and out until the screen grid is exactly the same as the 1" template. Then click on this icon, and that will be saved. Now, when clicking on the word 'Zoom' the screen perspective will be true size.

2.8 Task Bar - Start Bar

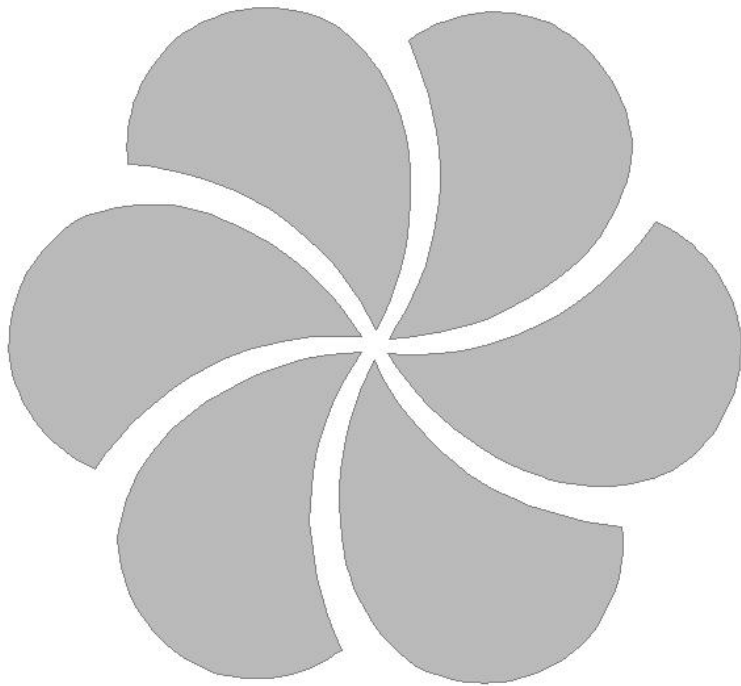
People with newer computers will know the Task Bar is now called the Start Bar.

**Start Bar Icons - make the programs easier to access.
Pin the programs you use the most.**



To pin a program to the Start Bar, just right click its name, and choose "Pin To Start". Once the icons are pinned to the start bar, they can be easily initiated by tapping the icon. To see if the program is currently running, let the mouse hover over the icon. A thumbnail image of the program's screen will appear if the program is running.

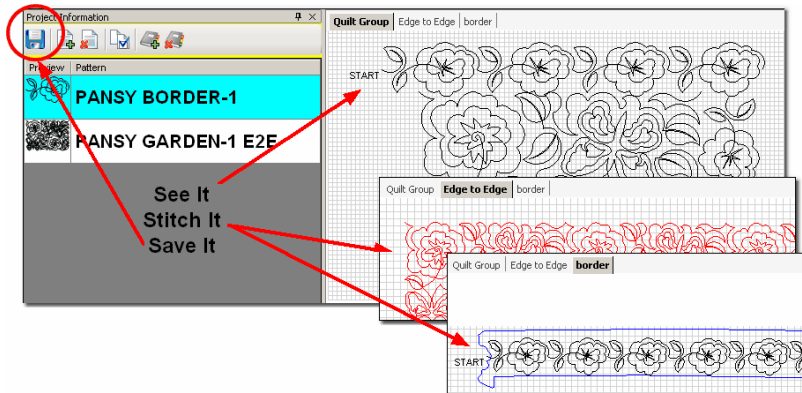
Part III



3 Planning the Quilting

A key strength of the Statler Stitcher CreativeStudio® software is the ability to:

- * **See it** Choose, Modify, Position and Preview quilting patterns before stitching.
- * **Stitch it** What You See Is What You Quilt! (WYSIWYQ)
- * **Save it** Save all the patterns, positioning, & settings in a Project for future use.

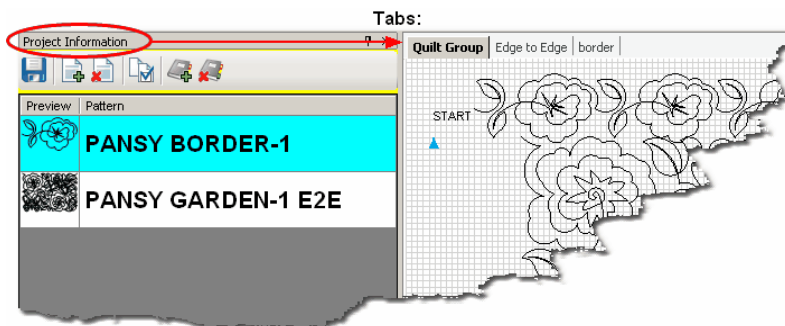


Planning the quilting is easy now because the quilter can select, combine and preview quilting patterns, and see (or show the customer) what they look like together. Completely new patterns can be created and saved too. The entire project can be saved for future reference or repeated use.

The instructions are not written with any one technology (computer or monitor) in mind. Quilting commands can be initiated by clicking an icon, button or word. The term 'click' might refer to using the mouse, stylus, fingertip, or pressing a button on the keypad. Therefore, step-by-step directions are guidelines, not rigid processes.

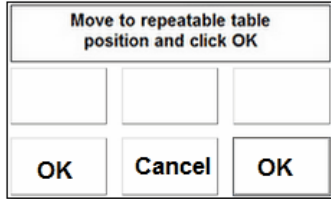
3.1 Quilt Projects

Quilt Projects are used by CreativeStudio® as a way to collect and organize the details for a quilt. A project is like a notebook that contains all the information used for a quilt. The notebook has general [project information](#)⁴⁸ and it has tabbed sections that contain the details relating to specific areas of the quilt. Projects files can be saved and re-used at a future date, with minimal adjustments.



3.1.1 Origin Point

CS requires an “Origin” point which is a reference point used for the placement of patterns. This origin is set (using the sewing head) every time the CS software is started.



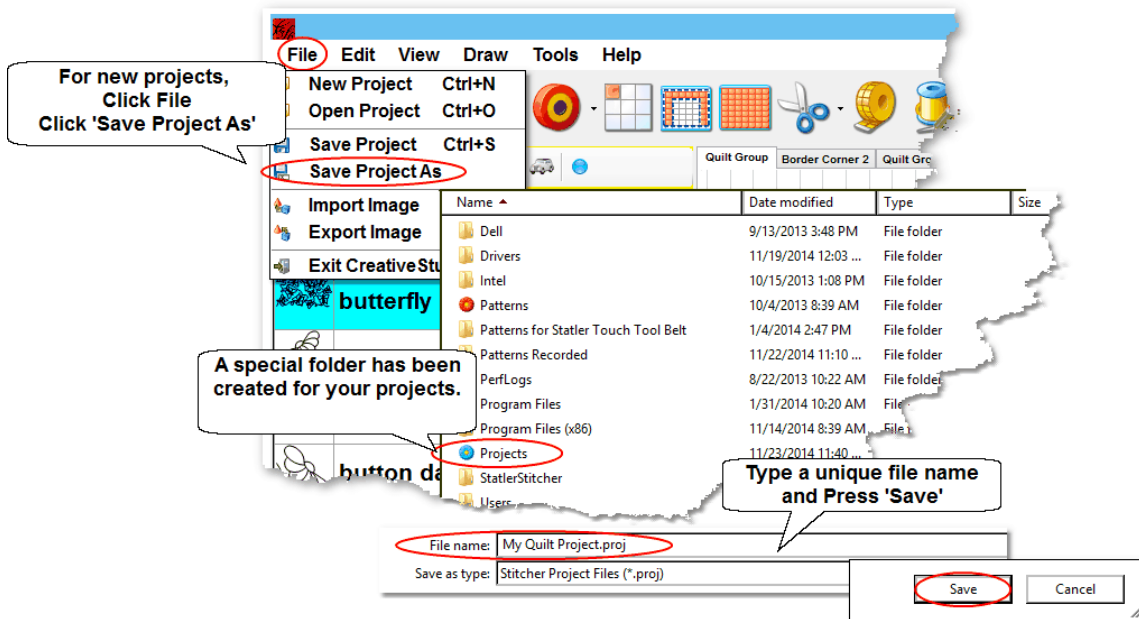
"Move to repeatable table position and Click OK" is the very first step CreativeStudio® asks you to do. Most people push their machine to the upper right (or upper left) corner of the table. This spot is always repeatable.

In CS, everything is relative - to the origin that is. CS views the sewing area to be one big grid and it identifies points on the grid with (X,Y) coordinates, relative to the origin. Why is this important? Because it enables CS to be restarted with minimal adjustments after CS has been shut down. This is explained in detail, in the section on [Relocate Patterns](#).¹³³

3.1.2 Project Names

CS creates a [project](#).⁵⁰ every time the software is used. By default, the project is named “My Quilt Project”. As soon as you save the project file, the new file name will appear as your project name.

Saving a project file is easy. Just click File, click Save Project As, and the Save As dialog box appears. CS has set up a special folder called "Projects", but you can use a different path if desired. Change the [path](#).¹⁸ if needed and click SAVE.

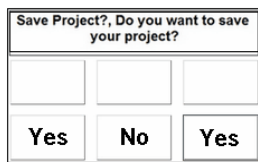


CS saves projects with a [file extension](#)^[18] of .proj or .projx. The extension is determined by the type of patterns used. If the project includes only unencrypted patterns (like those that came with the Statler Stitcher) the file extension will be "proj". If the project includes patterns that were purchased from a designer who [encrypted](#)^[12] them to run on one machine only, the file extension will be "projx". Once an encrypted pattern is added to the project's pattern list, and the project is saved, the project becomes encrypted and remains encrypted, even if the encrypted pattern is removed.

Save your project file often!



CS will remind you to save your project file before it opens a new project or closes the software.



By clicking on the "Yes" button, the Save As dialog box appears. CS will try and help by using the Project Name as the File Name but change it and the path if desired. Click SAVE to complete the process.



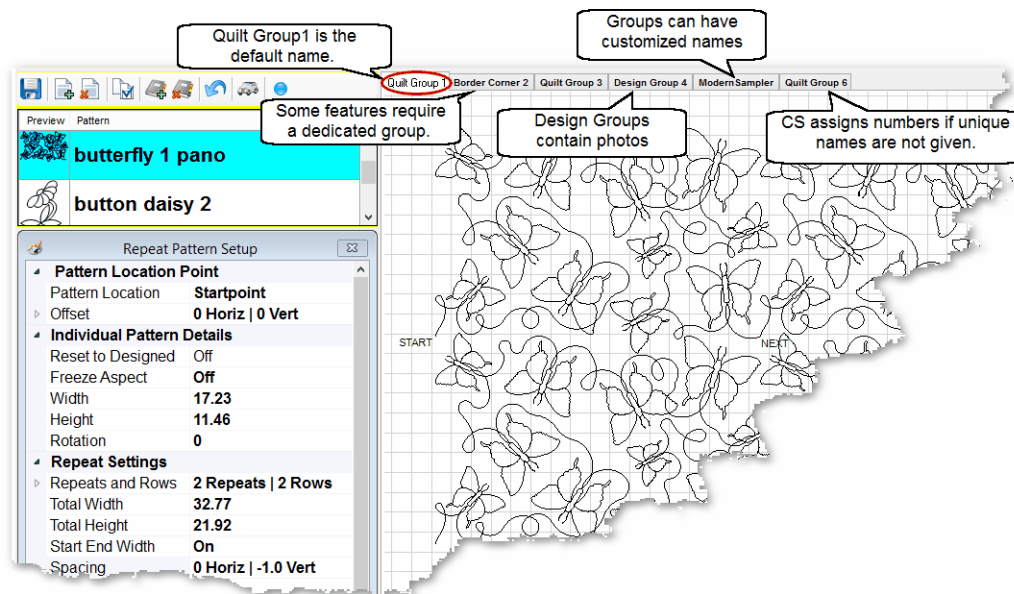
Tip: Since a project is created for each quilt, the project name (and project file name) could include the customer name, quilt name or date, for future reference.

3.2 Quilt Groups

If a Quilt Project is like a notebook with tabbed dividers, then Quilt Groups are the tabs, holding all the information about an area of the quilt, including the digital patterns, boundaries and photo images.

Every project starts with one tab called "Quilt Group1" by default. Adding more is possible, and each group added can be given a specific name or [renamed](#)^[143] later. CS counts the number of groups being used, and will assign an incremental number to the tab if a unique name is not provided.

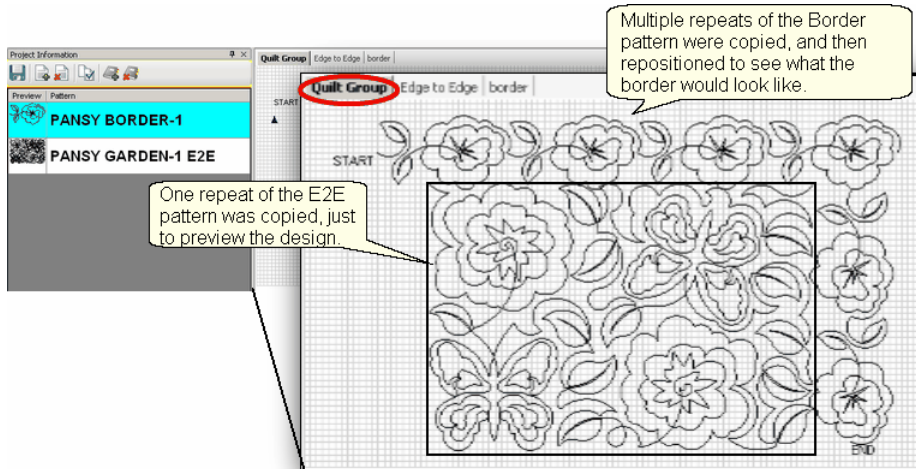
Each time a photo is [imported](#)^[101] it is placed in a new tab, called Design Group. The photo will not impact the stitching. It is just there to help make design decisions since patterns can be positioned on top of the photo, to check the fit. Additional imports will add additional design groups to the project.



CS will create a new quilt group automatically for certain techniques, like [Edge-To-Edge](#)^[200] and [Borders/Corners](#)^[190]. Individual quilt groups can also be created for different sections of the quilt, like the center medallion, or side triangles, borders or sashings, etc. Each quilt group has a tab which appears above the [preview area](#)^[60] of the screen.

In the following example, there are three quilt groups.


1. Quilt Group - in this example, two patterns were selected, sized and displayed. The purpose of auditioning two (or more) patterns is to see if they look good together and to set the scale (density) of quilting. This view (on the Preview area) can be [exported](#)^[103], and shared with customers if desired.



2. Edge to Edge - is an example of a quilt group that is automatically created by the [Edge-to-Edge](#)^[200] (E2E) feature. Pattern size and alignment is very important in E2E, so CS controls this in its own quilt group.

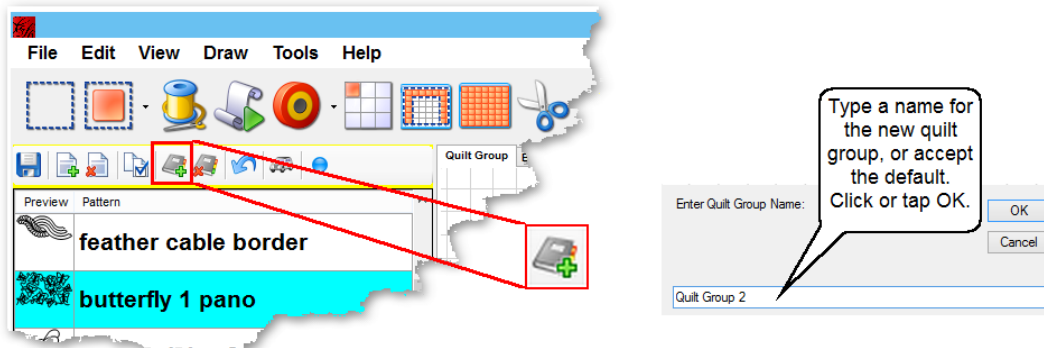
3. Border - is another quilt group that was created for this quilt. It will be used to create boundaries & position border patterns.

There is no limit to the number of quilt groups that could be used. Some quilts require only one quilt group (like E2E), and others have many (like custom quilting). The diagram above shows how a quilt group can be used to preview how the patterns will look together.

 **Design It Yourself:** To easily switch from one Quilt Group to the next, press the *Page Up* and *Page Down* keys in the keyboard.

3.2.1 Creating a Quilt Group

New quilt groups can be added easily. Just click on the AddQuiltGroup icon located in the [Project Information](#)^[66] area. Type a unique name in the pop-up box.

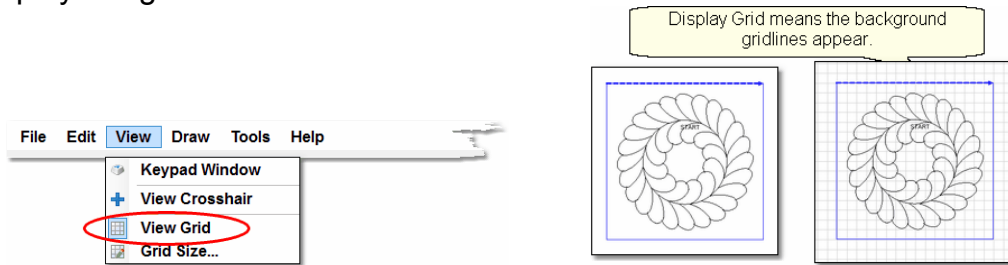


A tab is created with the new quilt group name. Each tab has its own preview area.

3.2.2 Quilt Group Grid

Having a grid helps with the positioning of the quilting patterns. Having a crosshair to show where the sewing head is currently placed helps to synchronize the those images with the actual quilt.

View Grid - Choosing to show a grid will change the look of the preview area. It will look like graph paper with very fine lines and it is helpful when planning pattern positioning. Some of the Draw features using [Gridpoint Snaps](#) will automatically display the grid.

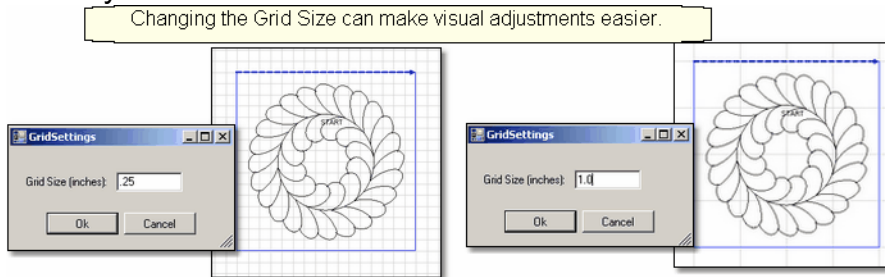


- * Click View
- * Choose View Grid

A background grid now appears. Once the 'View Grid' has been selected, it remains visible until it is deselected.

Grid Size - Grid size is the distance between the grid lines. If precise pattern placement is important, the grid size might be set very small (quarter inch or less) but if the pattern is very large scale, the grid size might be better at one inch or more. Grid size can be changed anytime during the project.

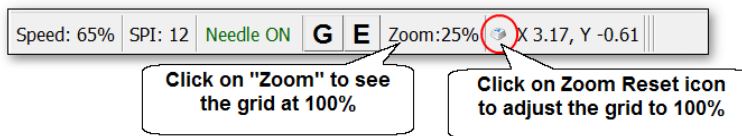
Choose the distance between the grid lines that helps you plan the designs effectively.



- * Click View
- * Choose Grid Size
- * Type in the size, in inches.

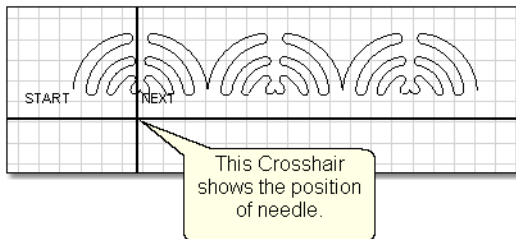
The background grid now changes size.

Zoom allows you to see both micro and macro views of patterns. You can zoom in close, and see the tiny details of a pattern, and you can zoom out and see the 'big picture'. When choosing the scale of E2E designs, it is important to see what the pattern would look like in full size. Click on the word "Zoom" on the status bar at the bottom of the screen and the magnification changes to 100%, which is how your designs will stitch out, full size.



Because there are so many computer monitor / TV variations that can be used as a screen, CS can calibrate the grid size for you using the Zoom Reset icon also on the status bar. This can be done easily using a 1" square paper template or ruler. First, be sure the Grid is visible. Next, hold the template or ruler on the screen, and zoom in and out until the screen grid is exactly the same as the 1" template. Then click on this icon, and that perspective will be saved as your "100%". Now, when clicking on the word 'Zoom' the screen perspective will be true size.

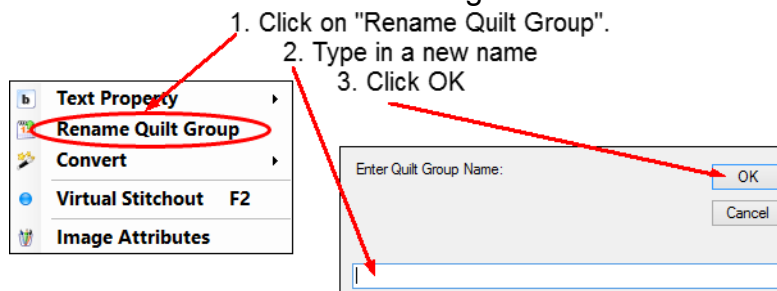
Crosshair refers to two lines that intersect and appear on the CAD preview area. The intersection of these lines indicates where the sewing head is currently positioned. Like on a graph, the needle position has X and Y co-ordinates. To make it easy to find this position on the screen these appear as horizontal (X) and vertical (Y) translucent blue lines. The intersection of the two lines is the 'crosshair' which is the needle position.



The crosshair is very useful, especially when checking the alignment of the patterns on the screen, with the patterns stitched on the quilt. It will be mentioned frequently. Once the 'Crosshair' has been selected, it remains visible until it is deselected.

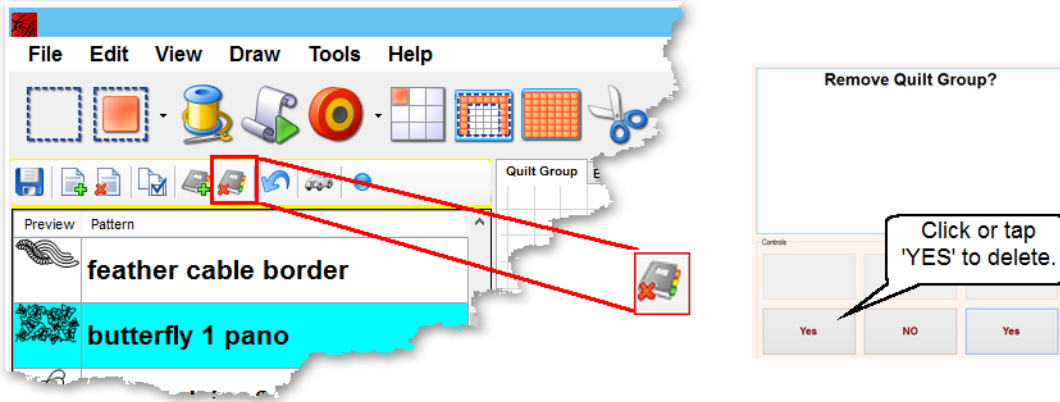
3.2.3 Renaming a Quilt Group

Quilt groups can be renamed easily too. Just right click on an empty space in the Preview area for that group, and one of the choices is 'Rename Quilt Group'. Click anywhere on those words, and a dialog box appears where you can type the new name. The names need to be unique and it is useful if they are descriptive. Click OK when done and the name will change.



3.2.4 Removing a Quilt Group

Removing the quilt group does not delete any of the patterns selected for the project. Just click on the quilt group tab, so that tab (or group) becomes the active one, and click on the (RemoveQuiltGroup) icon located at the top of the Project Information window. CS will always ask if you are sure you want to remove a group.

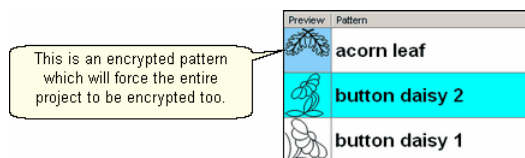


Tip: It is always better to remove a group and start over rather than just deleting the patterns and boundaries inside the group.

3.3 Quilt Patterns

Hundreds of digitized quilt patterns came with your Statler, and thousands more are available for you to purchase. The designers who sell their patterns decide how to protect their designs via copyright statements and some use encryption. So, don't be surprised if you are asked to provide your controller number when you purchase digitized patterns. (To find it, click on [Help](#)³⁴, then click on 'About'. The controller serial number is displayed.) Encrypted patterns will only run on one machine, so they can't be shared, transferred, duplicated or sold.

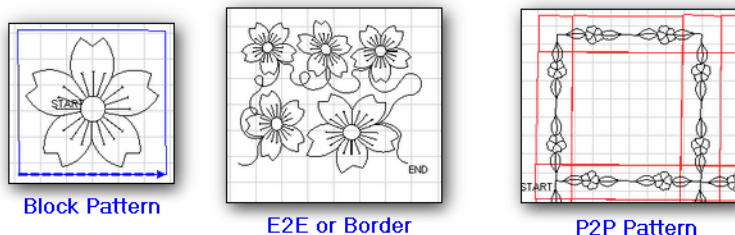
When you purchase patterns, look at the file extension. If they end with **.pat** instead of **.qli**, then they are encrypted. All patterns derived from an encrypted pattern will also be encrypted, and have a file extension of **.csqx** instead of **.csq**. All project files that use any encrypted patterns will also be encrypted (with a file extension of **.projx** instead of **.proj**) and will only run on your machine. When an encrypted pattern has been chosen for a project, it appears in the pattern list, but it has a blue background behind the pattern image. Once a project is encrypted, it remains that way, even if the encrypted pattern is removed from the project.



Most digital patterns are continuous line designs. By definition, a continuous-line design has only one start and one stop.

- * Block designs are usually a single pattern and frequently have the start and stop at the same point.
- * Edge-to-Edge or Border patterns are designed for having multiple repeats of the same pattern, with the end of one pattern connected to the start of the next, along the same (straight) line. They also have only one start and one stop but not at the same point.
- * Point To Point patterns must be continuous because the end of one pattern is connected to the beginning of the next.

Continuous Line Designs



Composite patterns are comprised of individual patterns and they may have more than one start and stop. Pattern designers are creating projects that use a composite pattern (with multiple individual patterns) which is stitched first, and the final product is made into a wholecloth quilt, wallhanging, tote bag, placemat or other home decor item.

Derivative patterns consist of portions of another pattern. The CS design capabilities make it easy to modify patterns, and export the derivative to be used in other projects.

3.3.1 About Quilt Patterns

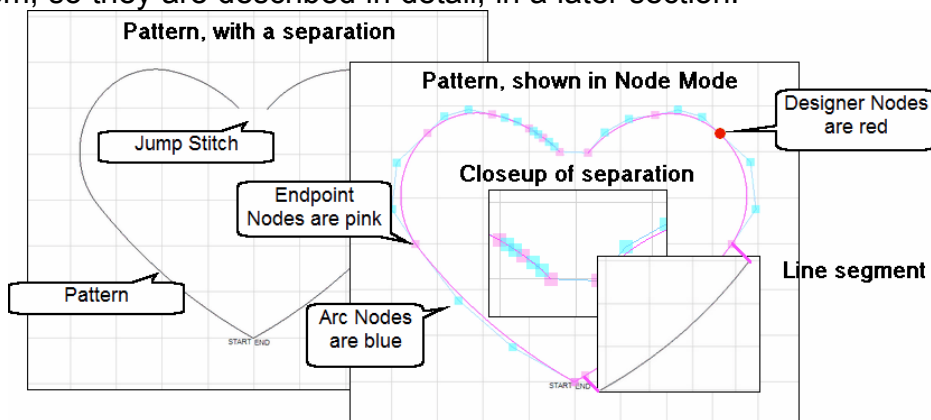
Patterns can be combined, and they can be split into pieces. Here are the terms and definitions that will help explain how this works:

Segments - All patterns are made up of segments which are straight lines or curves. Continuous patterns are made up of connected segments. If the segments get separated, the gap is called a '**Jump Stitch**'. When a pattern is divided into segments, the individual segments are technically complete patterns with Start points, End points, segments and nodes.

Nodes are specific points in a pattern. The beginning and ending of each segment is a node. Two contiguous segments share a node (the ending node of the first segment is the beginning node of the next segment). When a pattern is divided, it is at a node.

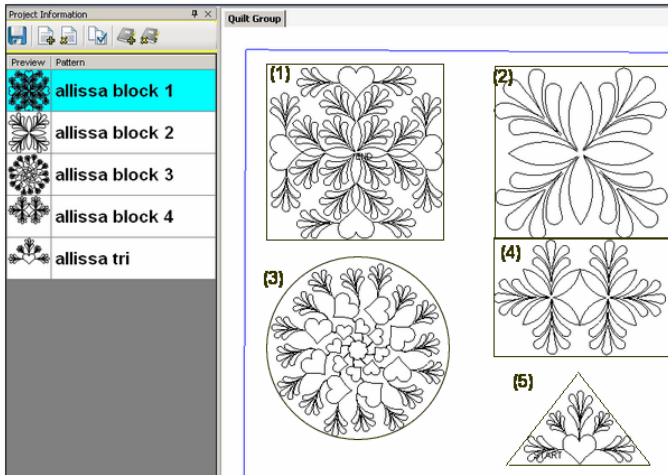
Node Mode ¹¹⁶ (F7) displays the pieces of each pattern, showing all nodes.

- **Endpoint Nodes** are pink squares and are used when dividing or combining pattern segments.
- **Arc nodes** are blue squares and they are used to reshape the pattern segments.
- **Designer Nodes** are special cases. These can change the pattern speed, change the SPI (stitches per inch), cause a pause, issue a note. Their presence is sometimes obvious because they are red dots (instead of pink or blue squares). Most quilters will not need to create Designer Nodes, but they should be aware of them, so they are described in detail, in a later section.



3.3.2 Single Block Patterns

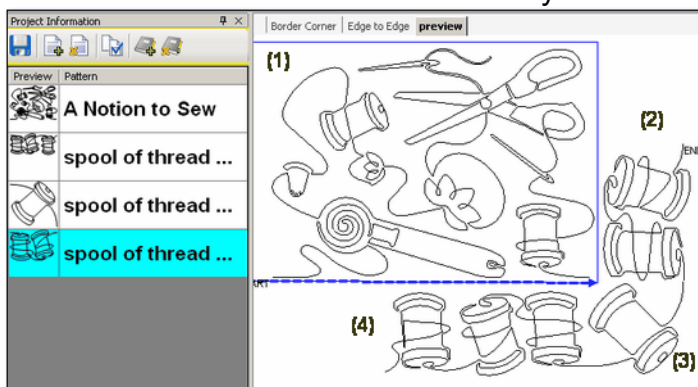
Single Block Patterns come in different sizes and shapes. Usually, they have the same start and end point. Here are some common block styles:



- (1) Allissa block 1 – is very detailed with a square-ish shape. Is very dense (good for larger blocks), has symmetry (suggest Freeze Aspect = ON).
- (2) Allissa block 2 - is a simpler design with a square shape. Is not dense (could fit many sizes) has symmetry (suggest Freeze Aspect = ON).
- (3) Allissa block 3 – is circular, with more density on outer edges, (good for larger blocks), has motion (Direction of hearts conveys motion), suggest freeze aspect = ON.
- (4) Allissa block 4 – is detailed with a rectangular shape, somewhat open (could fit many sizes) has secondary design – Multiple repeats might be interesting.
- (5) Allissa tri – is a triangle, with more density on outer edges, has a center focus – the density on the outer edges actually frames the heart.

3.3.3 Continuous Patterns

Continuous Patterns also come in different sizes and shapes. By definition, the startpoint and the endpoint are not the same point, but are on the same horizontal line. Here are some common continuous styles:



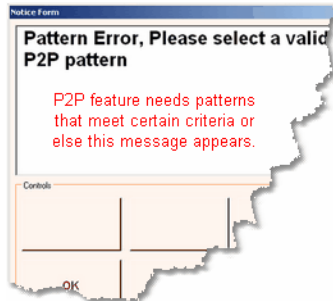
- (1) A Notion To Sew – is a pantograph pattern that can be repeated across and down the entire quilt, Edge To Edge (E2E). Pantographs can also be used on the inside of the quilt, from border to border - sometimes called B2B. The outer edges of this pattern are relatively linear, making it a good candidate for B2B (or even a very wide border).
- (2) Spool of Thread (with two spools) is a border pattern. It is continuous and is

- designed to be repeated as many times as needed, to span the border.
- (3) Spool of thread (with one spool) is a corner pattern. It is continuous, and is designed to connect the stitch lines of the border patterns.
 - (4) Spool of Thread (with three spools) is a specialty border pattern. This one has been designed to work with the corner, making the transition into the corner appear more symmetrical.

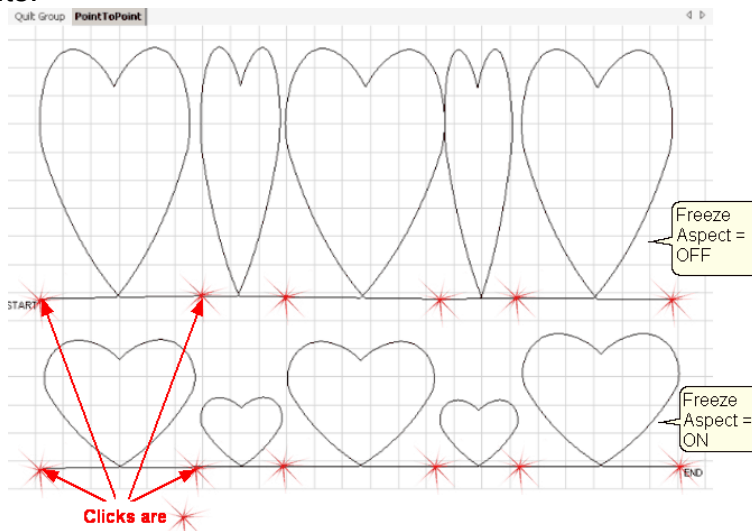
3.3.4 Point To Point Patterns

Point To Point is a unique process that allows quilting patterns to be placed precisely. The process will prompt for a series of points and then stitch one repeat between each consecutive pair of points. This process delivers a very 'custom' result. The P2P patterns are continuous and have a few restrictions:

- * They must have the start point on the left and the end point on the right.
- * The start and end must be on the same horizontal line when it is designed (not when it is used). If any of these restrictions are not met, CS will display an error message.



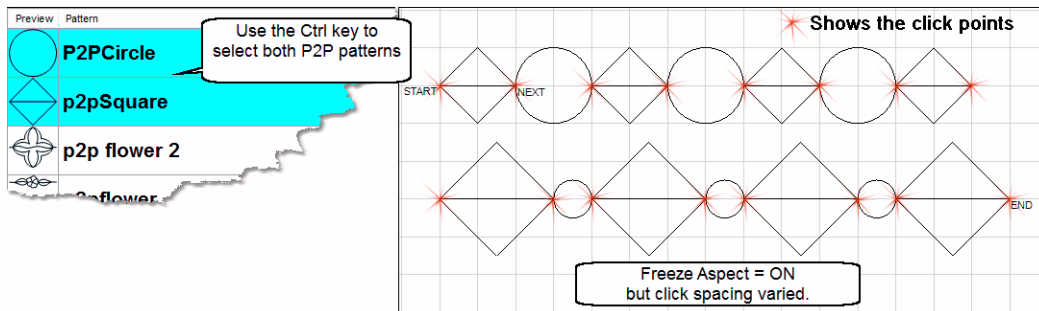
They can be stitched with the [Freeze Aspect](#)⁹¹ setting ON or OFF, for very different results.




In the example above, Clicks were made at varying intervals, 6", 3", 6", 3", 6". The top row shows the resulting pattern when the Freeze Aspect is OFF. The bottom row shows the results when the Freeze Aspect is ON. These hearts were stitched along one straight line but they didn't have to be.

It is possible to concatenate P2P patterns for a unique combination. Select the first

P2P pattern in the pattern list, and hold the Ctrl key down while selecting 1 or more additional P2P patterns. Now as the P2P points are clicked, the patterns will be placed, based on their selection sequence.



In this example, two P2P patterns were concatenated, Freeze Aspect = ON, and the click spacing varied. These are great options for skinny sashings.



Design It Yourself: Point-to-Point (P2P) lines and patterns can be positioned using the P2P icon & sewing head or using the Draw command and the mouse. Both techniques will be described in full detail.

3.4 Quilt Pattern Setup and Edit

What You See Is What You Quilt !

There is an acronym for this: **WYSIWYQ** (Pronounced “Whissey Wick”). Being able to see what is about to be quilted is extremely valuable because it eliminates many surprises.

There are two modes involved when choosing, positioning and previewing quilting patterns:

1. Setup Mode enables the quilter to change the settings that define how the patterns should stitch for this project.
2. Edit Mode enables the quilter to see an image of what is going to be stitched, and fine tune the details if needed.


It is important that the Setup changes be done first, and the Edit changes done last. Flipping between the two modes can undo Edit mode changes.

Color coding is used to distinguish between the two modes. **Setup** steps are highlighted in **cyan** throughout the user manual and the Quick Reference Cards. **Edit** steps are highlighted in **magenta**. The choice of highlight colors is not accidental. The colors cyan and magenta were chosen because they relate back to color coding of the ‘details’ in the Property Window.

Cyan is used for **Designed Pattern Details** settings which is done in **Setup Mode**. Magenta is used for **Selected Pattern details** which is done in **Edit Mode**.

To facilitate pattern setup and edit, it is strongly suggested that you use the grid on the [CAD screen](#),^[60] and use the Crosshair to show the current position of the sewing head. These were mentioned earlier, but it is worth more detail now.

The Setup and Edit steps are described in detail here, in the same sequence that would be typical for starting a new project. To demonstrate how these modes work together we will show the steps for doing a single block and repeated blocks. The purpose of this is to familiarize you with some of the basic functions and explain the process and how to navigate through it. This is just a simple example.



Design It Yourself: Throughout the manual there will be DIY tips that look like this. These are intended for experienced CS quilters who want to use keyboard shortcuts and commands to control pattern design. You can ignore the DIY tips without losing any functionality.


All of the quilting features will be described in full detail and in context in the next sections – The Quilting Process. Each feature will include the feature name, any assumptions and the steps to follow. If the step numbers are highlighted with cyan, the step is part of the Setup mode. Steps highlighted in magenta are part of the Edit mode.

The following two examples will provide an overview of the two most common quilting processes; Single Blocks and Repeat Patterns.

3.4.1 Selecting Patterns

“**Select**” means to choose. If using the mouse, this is a single click. If using a touch screen, it is tapping the screen. “**Select**” and “**Click**” and “**Highlight**” are used interchangeably because selecting an object generally highlights it.

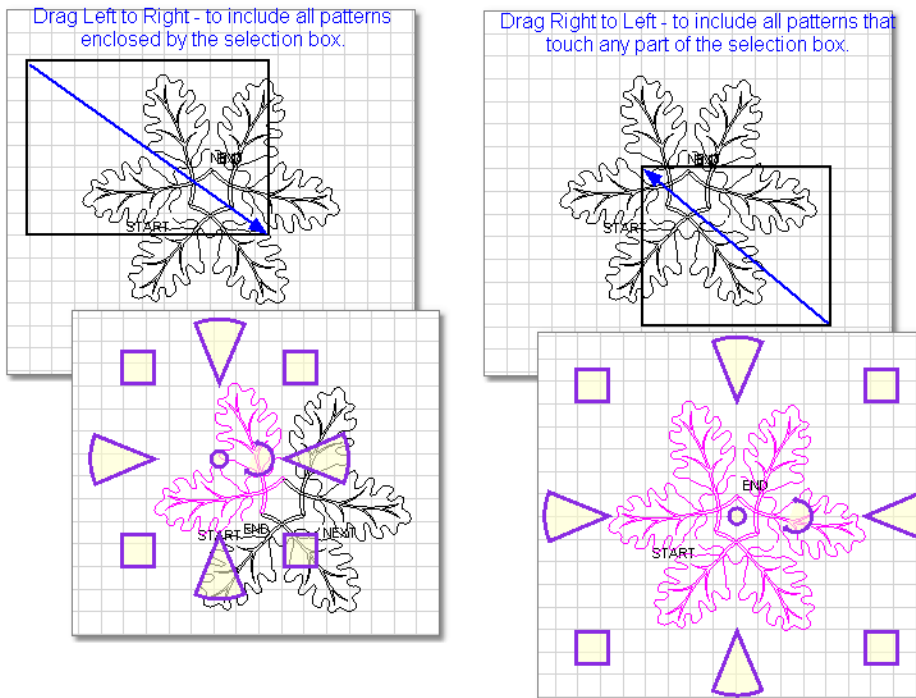
There are several methods to selecting multiple patterns.

* **All Patterns** - can be selected by clicking on the 'Select All Patterns' icon.  This will select everything on the preview area for the current quilt group. By default, the stitching order is determined by the order the patterns were moved onto the preview area.

* **Pick and Choose** - select multiple patterns individually. To do this, hold the Control key down while clicking on as many patterns as needed. **The sequence of choosing the patterns can be important.** If the group of patterns will be combined, rubber stamped or exported, the order of selection is the order of stitching, so don't click them randomly if they need to be stitch in a specific sequence.

* **Marque (click and drag)** - choose a group of patterns by dragging a selection box around them. This selection box is created by starting at a point on the Preview area that is away from all patterns. Click on this first point, hold down the left mouse button, and drag the mouse away, creating the selection box. The distance and direction determine which patterns are included in the selection.

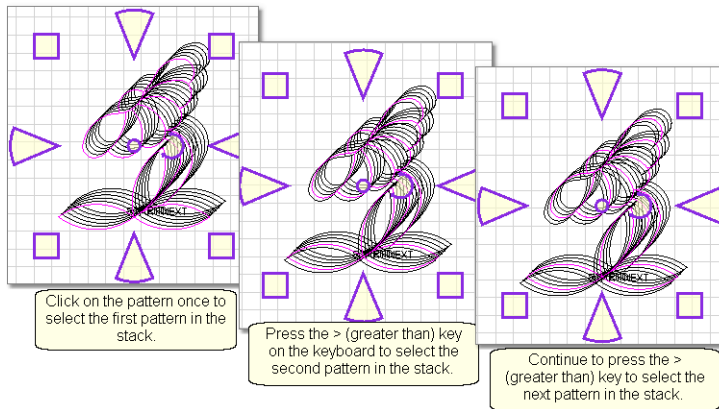
- Drag Left to Right to select patterns that are completely inside the selection box.
- Drag Right to Left to select all patterns that touch any part of the selection box.



Selecting Specific Patterns. There will be times when patterns overlap each

other. CS only recognizes the first two patterns in the stack, so an alternate method is needed to select any others. To select a buried pattern, use the < > keys (greater than and less than keys). Click once on the stack to select the first pattern, and click > to move to the next pattern. Continue pressing > to move through the stack in order. To backup, press <.

Rubberstamped patterns are good examples of stacks of patterns.



The same concept applies for selecting specific boundaries. CS keeps track of the sequence each boundary was created. When boundaries overlap each other, click on one of them, and press the k & l keys to cycle through the boundaries. Pressing 'k' will cycle backwards. Pressing 'l' will cycle forwards.

The same concept applies for selecting specific TRIM boundaries. CS keeps track of the sequence each trim boundary was created. When overlap each other, click on one of them, and press the i & o keys to cycle through the boundaries. Pressing 'i' will cycle backwards. Pressing 'o' will cycle forwards.

Deselecting Patterns. To deselect just one of many patterns, press and hold the Ctrl key, and click on the pattern. To deselect all patterns, any of these methods will work:

- * Press the Escape (Esc) key on the keyboard.
- * Click on a different pattern.
- * Single or double click on any open space in the preview area.

Always remember that "What You See Is What You Quilt", so edit until the pattern looks the way you like.

3.4.2 Single Blocks

Single blocks use boundaries to define the pattern sizes. This means the original pattern is automatically resized to fit the defined boundary. The size can still be modified however, in both Setup mode (using the numeric measurements in the details area on the left of the screen) or in Edit mode (using the resizing handles in the Preview area on the right side of the screen).

Feature: Single Blocks

Assumptions: CS has been turned on and the Origin has been set, the quilt is loaded, bobbins wound, machine threaded. You (or your customer) know which patterns will be used. A new project has been started (click File, click New Project).

Steps to follow:

Step 1. Choose a pattern

Step 2. Define a boundary in the preview area

Step 3. Move the pattern into the boundary

Step 4. Adjust the pattern in the boundary.

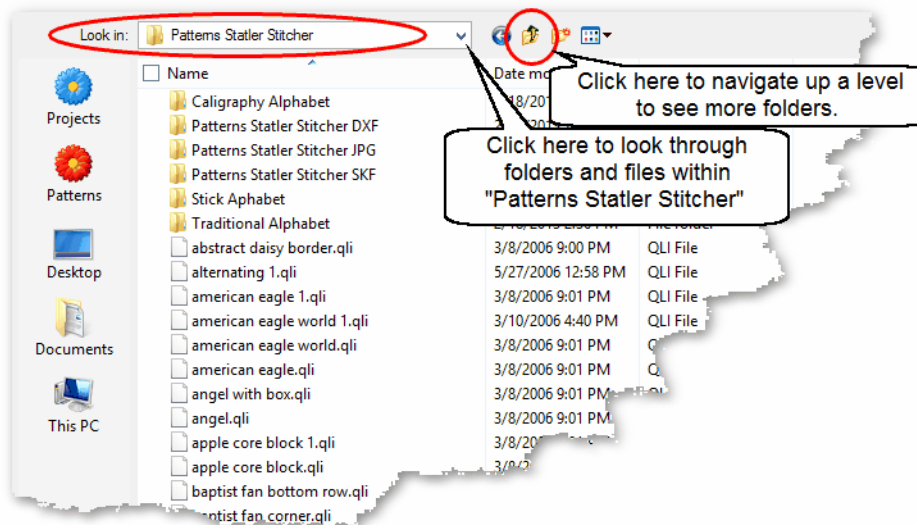
3.4.2.1 Step 1: Choose pattern

Step 1: Choosing the patterns can be done as needed during the quilting process, or can be done at the beginning of the quilting process.



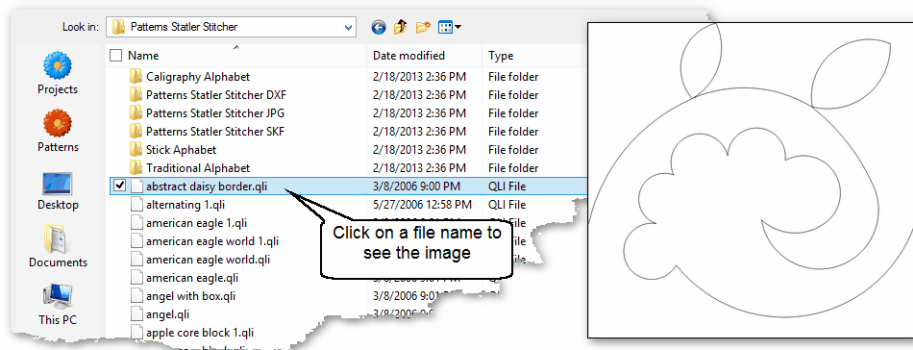
* Click on Add Pattern icon (if needed).

* The 'Open Pattern File' dialog box appears:



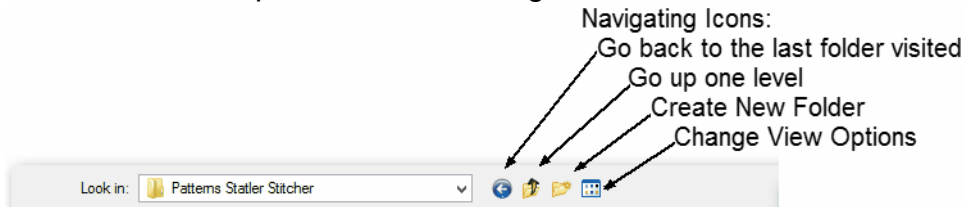
* Navigate the folders and files, previewing and selecting patterns. The current folder name is shown in the "Look In:" selection. In this example, it is called "Patterns Statler Stitcher".

- * Double click on a folder name to open it. The list of files in that folder will appear.
- * Click on any filename and a preview of that pattern file is displayed.

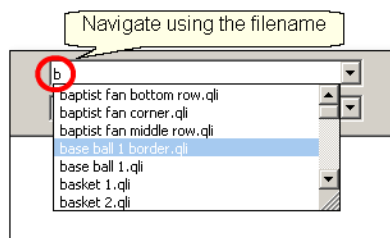


- * Once the first file is selected, the [keyboard](#)^[16] navigation buttons are activated:
 The down arrow will move down one file at a time.
 The Up arrow moves up one at a time.
- * Using the mouse to [scroll](#)^[14] is sometimes faster if you don't need to look at each pattern file:
 Click on the scroll bar 'up' arrow to scroll up one file at a time.
 Click on the scroll bar 'down' arrow to scroll down one file at a time.
 Grab & drag the scroll bar 'slider' to scroll to a different part of the folder.
 Click on the scroll bar ABOVE the 'slider' to move back 1 screen (about 15 files).
 Click on the scroll bar BELOW the 'slider' to move up 1 screen (about 15 files).

- * Use the mouse and special icons to navigate folders:

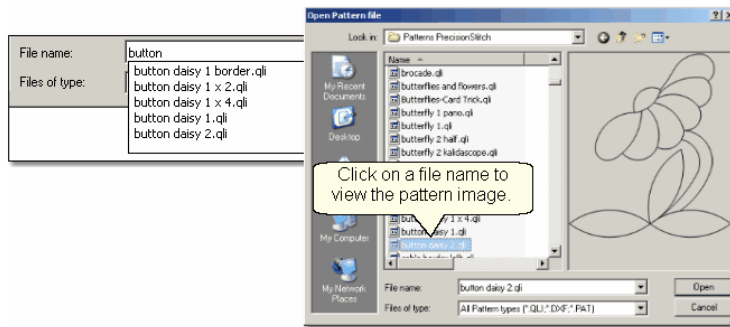


- * To find a specific file, begin to type in the name of that file in the FileName box. A list of filenames appear in a drop-down box, showing the filenames that match that criterion. If many files match, there will be scroll bars in the drop-down box that allow you to scroll through the list looking for the correct file.



- * The more letters that are typed in, the more specific the search criterion and fewer files are returned. Click on the filename to select it and an image of the pattern will appear in the preview area. Click the Open button to choose this pattern for your

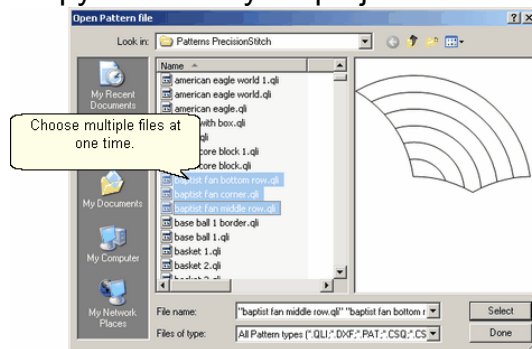
project.



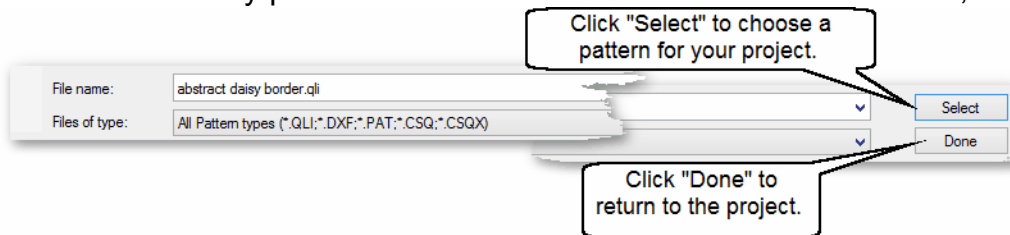
* Use the Shift or Control keys to choose multiple patterns at one time (Limit of 9 files).

- When the filenames are contiguous, Click on the first filename, Press and hold the Shift Key, and Click on the last file name. This highlights all the files. Click on Open button to copy them into the project. .

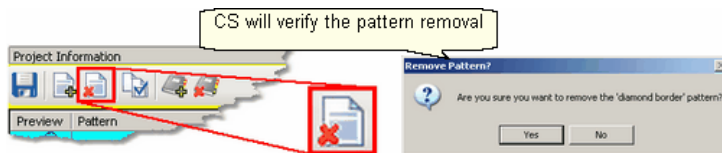
- When the filenames are not contiguous, Click on the first filename, Press and hold the Control Key, and click on the other individual files needed. Click on Open button to copy them into your project.



* Choose as many patterns as desired and click Select. When done, click "Done".



If you change your mind, and decide not to use a pattern that has been selected, just remove it by clicking on the Delete Pattern icon.



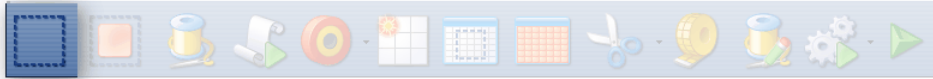
* Save the project.



3.4.2.2 Step 2: Define Boundary

Step 2: Define a Boundary for a single block.

Boundaries are used in many of the CS techniques. They might be required by a technique (such as defining the quilting surface of an E2E design) or used as a convenient reference for guiding the placement of patterns. Either way, they synchronize the quilt top with the screen image.

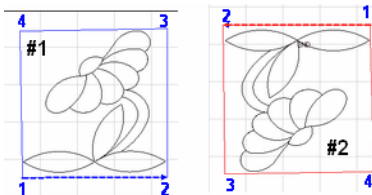


About boundaries:

- * A bounded area must have at least 3 points (a triangle) and can have dozens.
- * The first point is considered the anchor. The lower left corner of the pattern will always be aligned to the first point clicked.


Baseline- The first two points define the baseline which determines the pattern rotation.

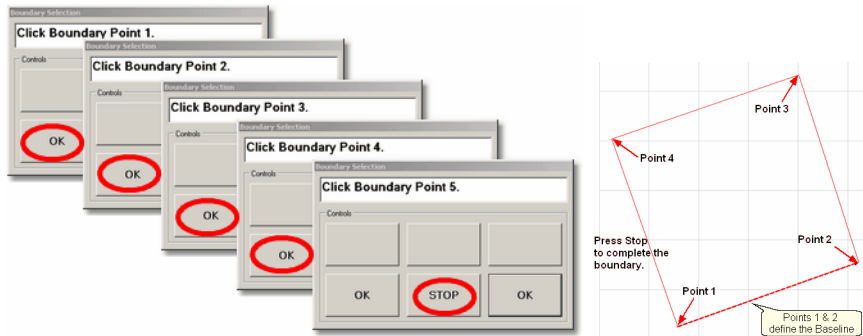
- * Pressing Stop completes the boundary. CS will connect the first and last points, enclosing the area.
- * Choose the baseline and click the points in a counter clockwise direction. Patterns are aligned to the baseline as shown:



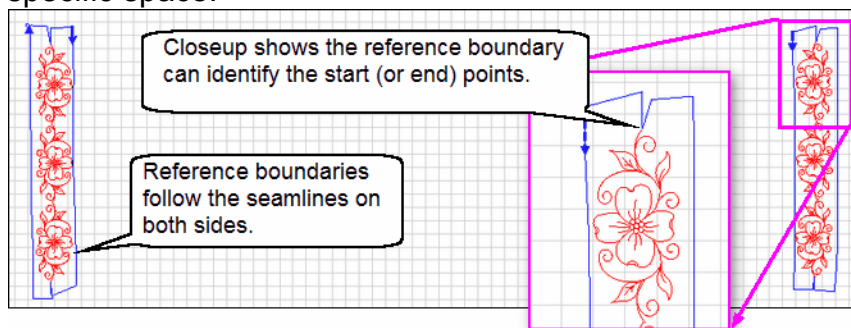
- * Once a boundary is defined, it can not be changed. It can however be deleted and a new boundary defined. It can also be [converted](#)¹²⁴ to a different form.
- * To delete a boundary, first make sure no patterns are selected. Then, select the boundary (the boundary turns red) and press the Delete key on the keyboard. This works for patterns and trim boundaries also.

How to define a boundary using the sewing head:


1. Click or tap the Boundary icon  (or press the Mode button on the keypad until the boundary icon is highlighted, and then press the Select button on the keypad to initiate the feature). CS will begin to prompt for points that define the bounded area.
2. Move the sewing head to the first point and press OK on the keypad.
3. Continue clicking points sequentially until the boundary is defined.
4. Press Stop on the keypad when done and CS will join the last click point with the first, enclosing the area.



Reference boundaries are used to verify or trace the position of an object like an applique, a seamline, or a previously sewn pattern. Side borders are good examples of using reference boundaries, especially when the patterns need to be resized to fit a specific space.



In the previous screen image, a reference boundary has been drawn showing both side borders. The remaining three flower patterns need to be sized to fill the space exactly. There are reference marks pointing toward the stitches already finished. There is a section that explains [side borders](#)¹⁹⁵ in full detail later, but here it is used to show the value of creating a reference boundary.



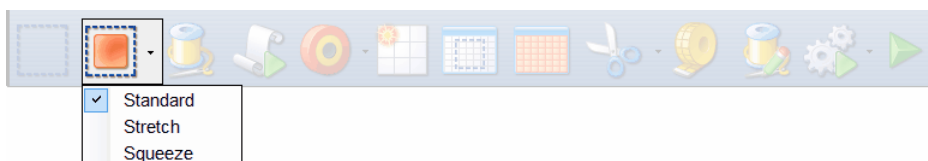
Design It Yourself: An alternative method of creating a boundary is to use the mouse or touch screen and define the boundary on the screen, without using any specific points on the quilt top. This is explained in detail in the [Draw Options](#)¹⁴⁵, [Draw Boundary](#)¹⁴⁹ section.

[Save the project](#)⁶⁷.

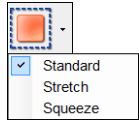


3.4.2.3 Step 3: Pattern to Boundary

Step 3: Move Patterns into Boundary



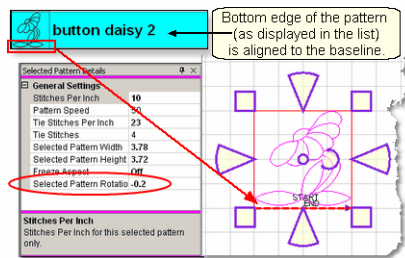
- * Click on a boundary to select it. (It turns red).
- * Click on a pattern (in the pattern list) to select it. (It turns cyan).
- * Click on the drop-down arrow next to the icon.



Choose: 'Standard', 'Stretch', or 'Squeeze'.

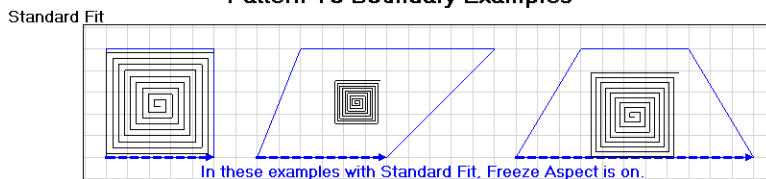
* Click on the Pattern_To_Boundary icon to move the pattern in.

When a pattern is moved into a boundary, the bottom edge of the pattern (as it is displayed in the pattern list) is aligned to the baseline. If the baseline slopes up (or down) the pattern will be rotated accordingly. The slope angle is displayed in the Selected Pattern Rotation field of the details.



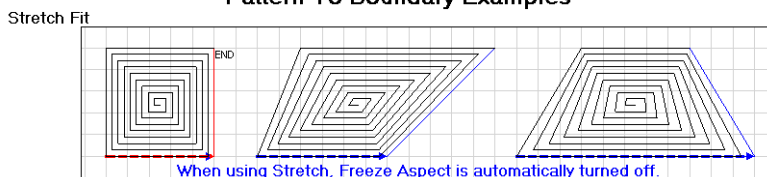
Standard Fit: When the boundary has an irregular shape, the pattern will be resized to fit if possible. The following example shows how a pattern is resized using the 'Standard' fit. Notice that the results are very different, based on the shape of the boundary. In these examples the margin is set to 0 and FA is 'on'. CS will maintain the aspect first, and fit the pattern to the boundary if possible.

Pattern To Boundary Examples

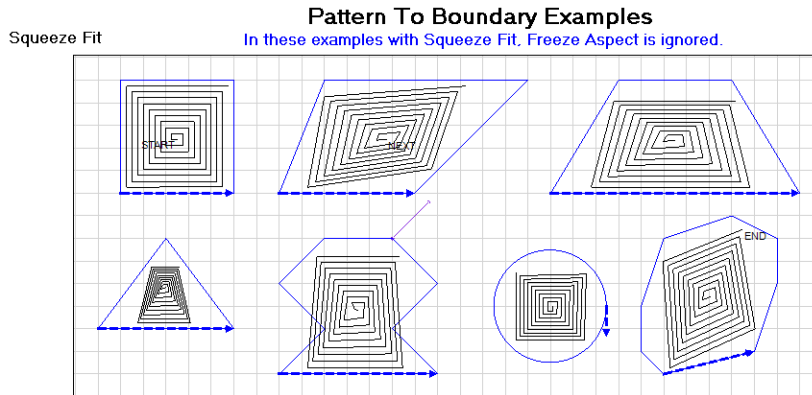


Stretch Fit: CS will reshape the pattern to fit the boundary if possible, but the Stretch Fit option uses only 4 boundary points, and they don't need to be at 90' angles. When 'stretch' is used, the FA (freeze aspect) setting is turned off.

Pattern To Boundary Examples



Squeeze: CS will reshape the pattern to fit the boundary if possible, regardless of how many boundary points there are. Not all patterns work well with this method. Really irregular boundaries can give some unpredictable results too.



Exit Setup mode by closing the Settings dialog box or changing to a different quilt group (tab). The individual patterns can now be edited in the Preview area as needed. Click on any image in the Preview area to edit it.

* The Preview area is focused on the pattern most recently used.

To see all patterns and boundaries, click View All icon. 

Save the project.



3.4.2.4 Step 4: Adjust Pattern

Step 4: Adjusting (resizing) Patterns.

* Click on the pattern within the [preview area](#)^[60] and resizing handles appear surrounding the pattern. The size and rotation of this pattern is now displayed in the [Selected Pattern Properties](#)^[53] area (framed in magenta) and the title bar says specifically "Selected Pattern Properties". If more changes are made to the original pattern details (framed in cyan), they would not affect the pattern already moved into the preview area (framed in magenta). They will only affect patterns moved into the preview area from that point forward, never retroactive.

Designed Pattern properties are set by the designer.

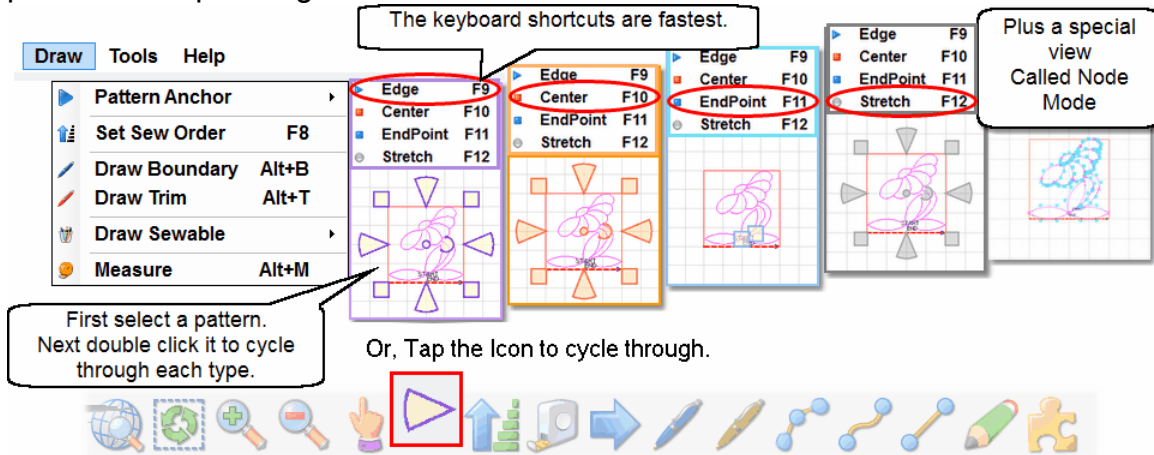
Designed Pattern Properties	
Pattern Name	button daisy 2
Stitches Per Inch	10
Pattern Speed	50
Tie Stitches Per Inch	23
Tie Stitches	4
Pattern Width	8.47
Pattern Height	9.59
Freeze Aspect	Off
Designer Notes	
Margin	0.25

Selected Pattern Properties are AFTER being moved into the preview area.

Selected Pattern Properties	
Stitches Per Inch	10
Pattern Speed	50
Tie Stitches Per Inch	23
Tie Stitches	4
Selected Pattern Width	4
Selected Pattern Height	4
Freeze Aspect	Off
Selected Pattern Rotation	0
Designer Notes	

When a pattern is highlighted in the Preview area, the shape can be changed by using the re-sizing handles. The handles have different colors and shapes, depending on the [Pattern Anchor](#)^[146]. The default is 'edge' anchor. Double click the

pattern to step through all of the choices.



If working with a touch screen, the  Cycle Pattern Anchor Type Icon will cycle through each anchor type in order.

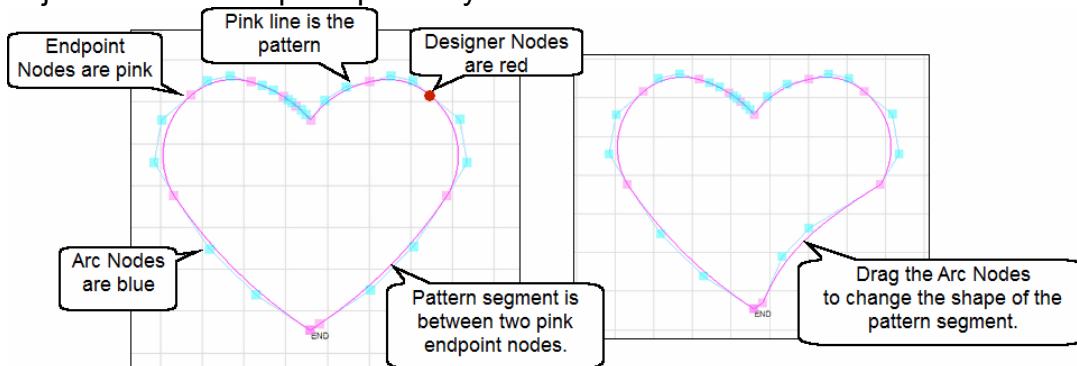
When Pattern Anchor is 'Edge' - the **re-sizing handles are purple**. When any handle is moved, the opposite handle is anchored in place.

When Pattern Anchor is 'Center' - the **re-sizing handles are orange**. When any of the handles are moved, the center of the pattern is anchored in place.

When Pattern Anchor is 'Endpoint' - the **handles are blue boxes**, at the Start and End points. Endpoint Anchor is not a choice for a [block pattern](#)^[75] when the start and end points are the same.

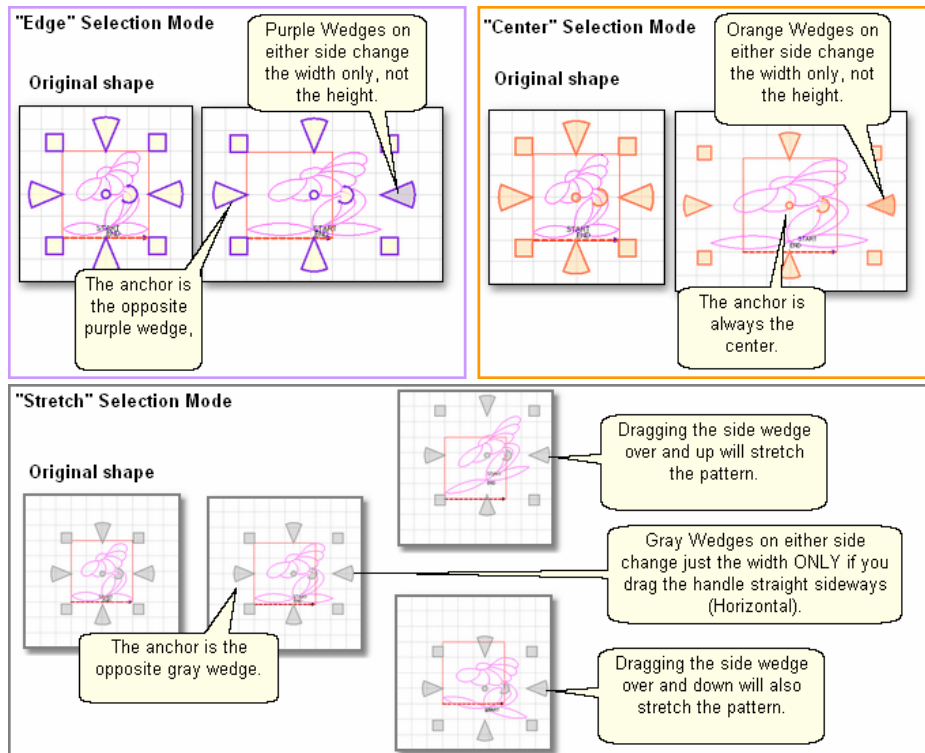
When Pattern Anchor is 'Stretch' - the re-sizing handles are **gray**. When any handle is moved, the opposite handle is anchored in place. The Stretch Pattern Anchor is special because it allows portions of the pattern to be stretched. This essentially warps the pattern, and sometimes that is needed when seam lines are not accurate.

When all the little nodes appear, the pattern is in [node mode](#)^[116] and can be manipulated one node at a time. This takes longer, but allows the pattern to be adjusted to fit the space perfectly.

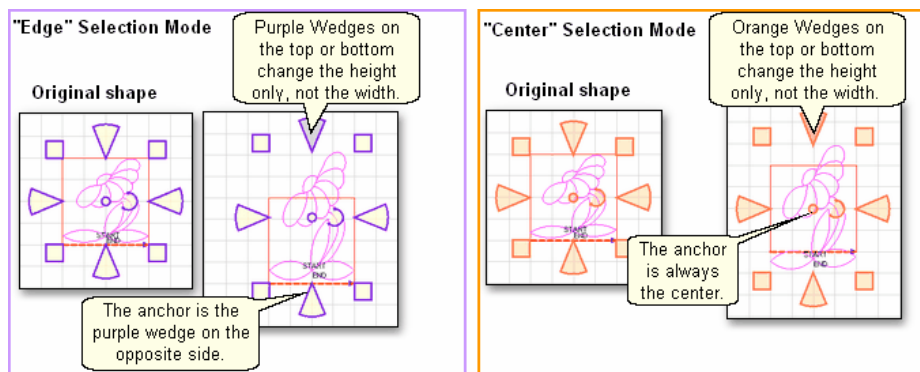


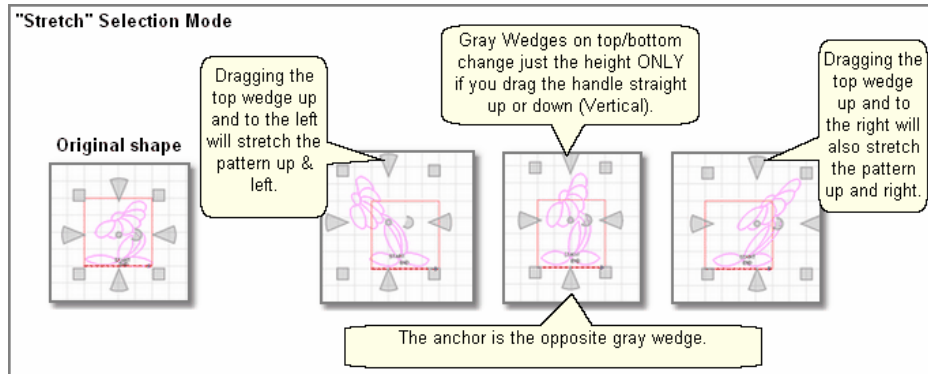
The nodes are pink (endpoint nodes) and blue (arc nodes). Patterns can only be divided at the pink endpoint nodes, but either one will allow the pattern segments to be modified.

Resize Pattern Width - The wedge shaped handles on the sides of the pattern control the width. Move the cursor over the left side or right side wedge and press down on the left button; the center of the wedge turns darker (purple or orange). Hold the left mouse button down and move the mouse to resize the pattern.

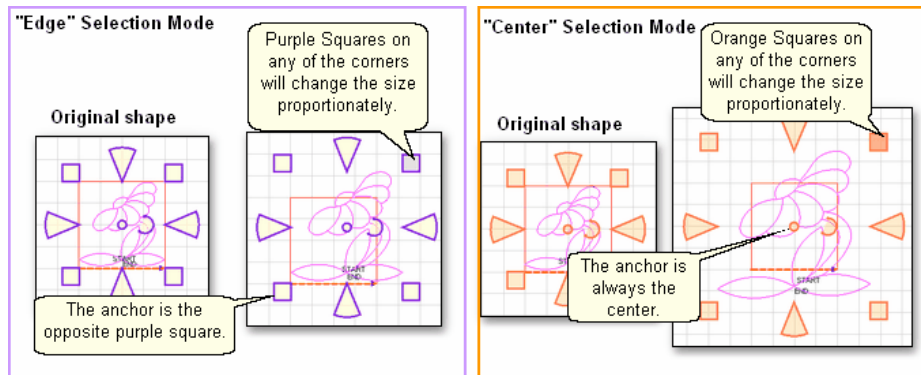


Resize Pattern Height - .The wedge shaped handles on the top and bottom of the pattern control the height. Move the cursor over the top or bottom wedge and press down on the left button; the center of the wedge turns darker (purple or orange). Hold the left mouse button down and move the mouse to resize the pattern.

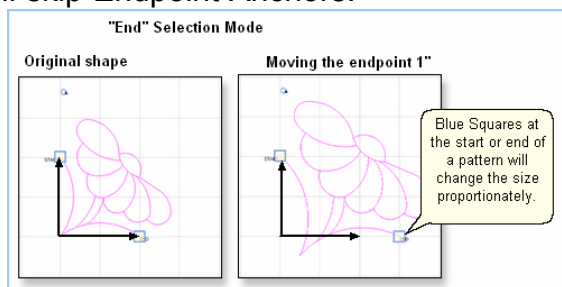




Resize Pattern Proportionately. With the exception of the Stretch Pattern Anchor, the square handles at the four corners will change both dimensions proportionately (also known as Freeze Aspect). Move the cursor over one of the corner squares and press down on the left button; the center of the square turns darker (purple or orange). Hold the left mouse button down and resize the pattern.

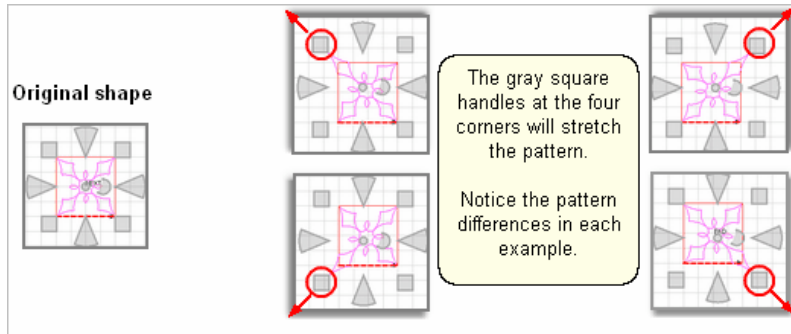


The Endpoint Pattern Anchor doesn't have handles at the four corners, but by moving either of the blue boxes (at the beginning or end of the pattern) the opposite endpoint stays anchored and the pattern changes size proportionately. Endpoint Pattern Anchors will not appear on block patterns because the start and end points are the same. Double clicking a block pattern to cycle through the pattern anchor choices will skip Endpoint Anchors.



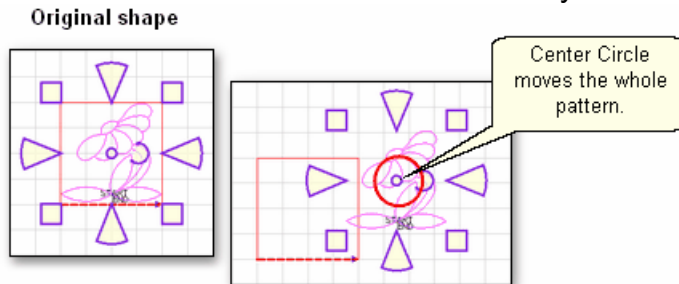
To move the entire pattern using Endpoint Pattern anchors, press and hold the Ctrl key (or the Alt key) and use the keyboard arrows. If nudging the pattern is too slow, use one of the other pattern anchor choices.

The Stretch Pattern Anchor has handles at the four corners, but they do not move the pattern proportionately. Instead, they stretch that corner of the pattern, allowing a pattern to fit an imperfectly pieced block very nicely.



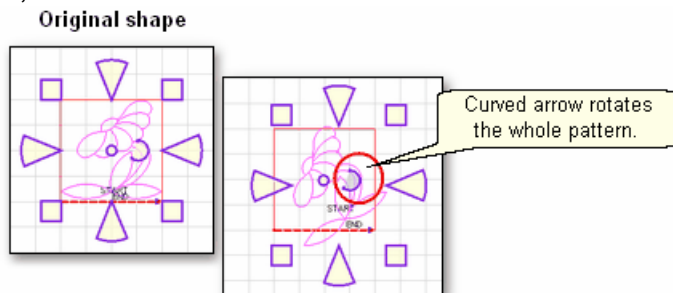
TIP: The Stretch Resizing Handles are very powerful so small movements work best. Use Ctrl Z (Undo) to return to the original shape.

Reposition Patterns by grabbing the center circle and dragging the pattern. When the cursor is over the center circle, it becomes a '+'. Hold the left mouse button down and drag the pattern to the new location. Edge anchor, Center anchor and Stretch anchor will function the same way.



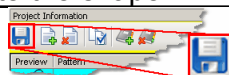
Design It Yourself: To 'Nudge' a pattern (move it just a tiny bit) hold the Alt key (or the Ctrl key) down and press the directional arrow buttons (↓ ← →)

Rotate Patterns using the curved arrow. Move the cursor over the curved arrow and press down on the left button; the center of the curved arrow turns darker (purple or orange). Hold the left mouse button down and rotate the pattern. Edge anchor, Center anchor and Stretch anchor will function the same way.



TIP: Rotating a pattern works best if the cursor stays away from the center circle. So, click the curved arrow, drag the cursor away (to the right) and then rotate the shape.

Save the project.



3.4.3 Repeat Patterns

Repeat Patterns is the second most common method of quilting. Repeat Patterns uses measurements to determine pattern sizes. Boundaries are still used, but they are for reference rather than resizing patterns. After repeated patterns are placed on the CAD screen, they can still be changed using the resizing handles in the Preview area on the right side of the screen.

Feature: Repeated Blocks

Assumptions: CS has been turned on and the Origin has been set. The quilt is loaded, bobbins wound, machine threaded. You (or your customer) know which patterns will be used. A new project has been started (click File, click New Project).

Steps to follow:

Step 1. Choose a pattern

Step 2. Measure

Step 3. Change the Pattern details

Step 4. Change the Repeat details

Step 5. Adjust the pattern in the boundary.

3.4.3.1 Step1: Choose pattern

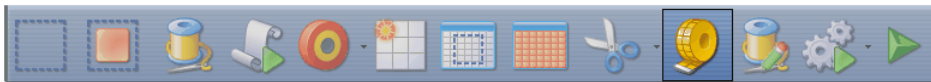
Step 1: Choose patterns using the same techniques as described in [Single blocks](#)

82.

3.4.3.2 Step2: Measure

Step 2: CS provides two Measure options. One measures the quilt, using the sewing head to identify the start and end points of the line being measured. The other measures the screen image of the quilt, using the mouse (or touch screen) to click on the start and end points of the line being measured. Regardless of the method chosen, the results can be transferred easily to the details in the Property window.

To measure the quilt, click the Measure icon. You are now in Measure Mode, and will be able to do multiple measurements, as needed.

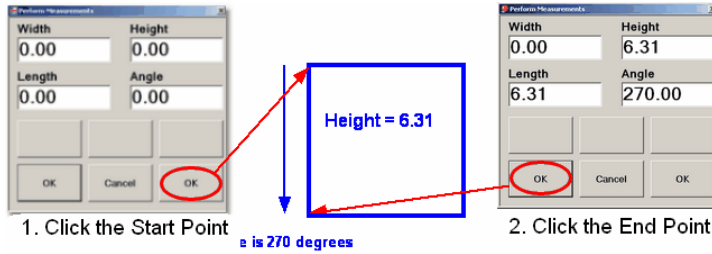


* CS shows the "Perform measurements" dialog box.

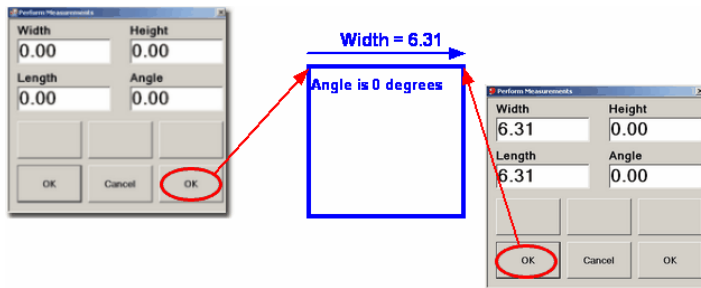
1. Move the stitcher to the start of the line and press OK.

2. Move the stitcher to the end of the line and press OK again.

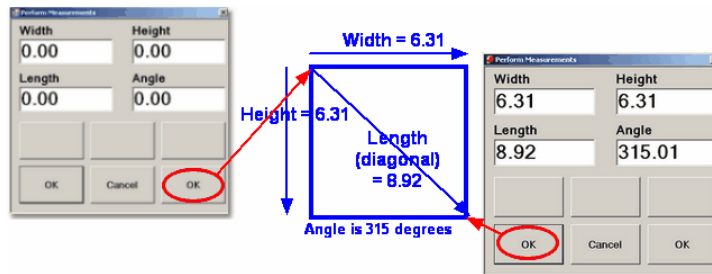
The measurement is displayed immediately. In fact, the sewing head measures dynamically - just click the start point and move the machine. The numbers change as you move the machine, and don't stop measuring until you click the end point.



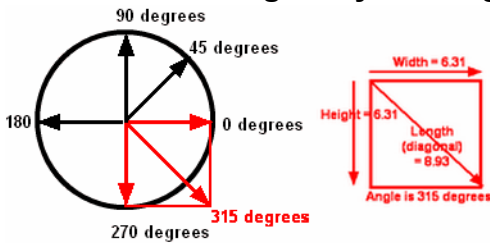
* Remember to measure in the same direction that the pattern will be sewn. The measure function calculates the angle automatically, so use that angle as the squaring angle.



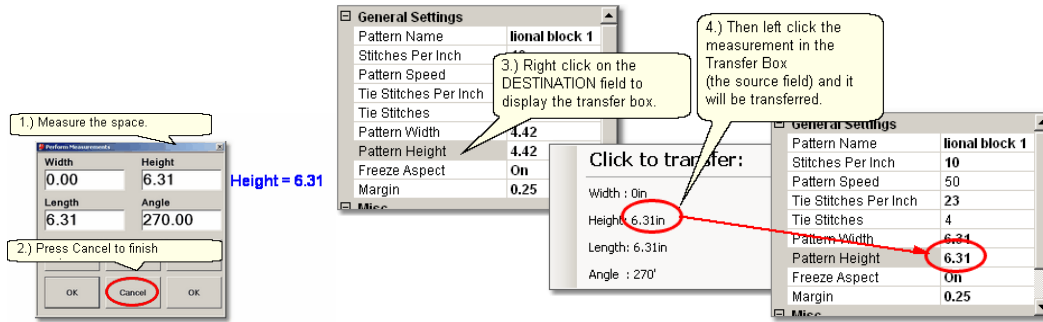
* Measuring the block diagonally will give the height, width, length and the angle of the diagonal.



* It is important to understand how the angle rotations are defined. **CS measures the angles by rotating counterclockwise.**

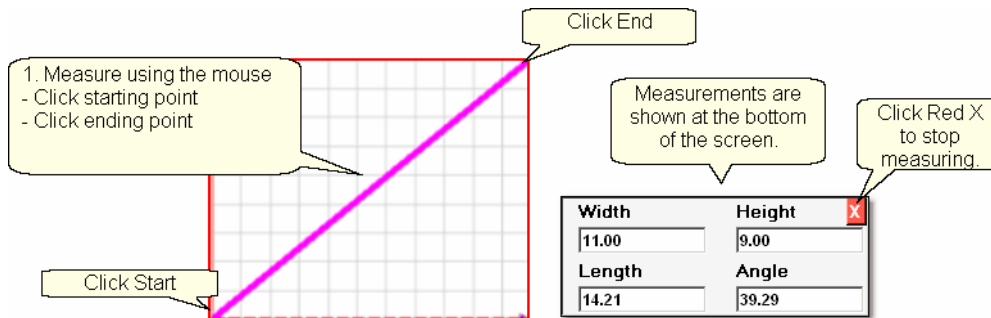


To transfer measurements to pattern details. CS remembers the four numbers (width, height, length, angle) from the last measurement made, and will transfer them for you. This 'transfer' feature is one of the many special Right Click shortcuts.



1. Make the measurement. (Be sure the destination field is not already selected.)
 - Move the machine head to the start point and click OK.
 - Move the machine head to the end point and click OK.
2. Click on Cancel to stop measuring.
3. Right click on the Destination field. The Transfer box appears.
4. Click on one of the measurements to move the number to the destination field.

To measure the image of the quilt, click on the Draw Measure icon, or click the commands (Draw, Measure) or use the Alt+M keyboard shortcut. This uses the screen to take measurements of the items (boundaries and patterns) you have moved to the preview area. These are approximations and not the real quilt block measurements.



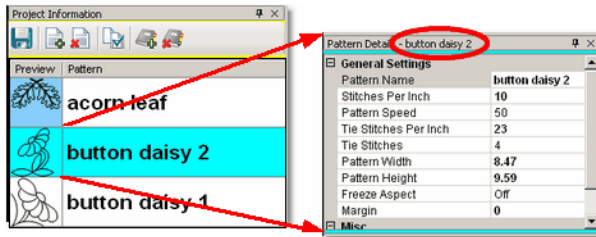
CS is ready to make as many measurements as needed - just keep clicking start & end points. Press Esc or click on the Red "X" on the dialog box when done measuring.



3.4.3.3 Step3: Pattern Details

Step 3: Change the Pattern Details to reflect your measurements before moving patterns into the preview area.

* Click on the pattern to be used. The pattern image and filename are highlighted in cyan and the details below are framed in cyan. If you make your changes now, the new values will be used every time this pattern is used in the current project (from this point forward). The new values will not affect any patterns that are already in the preview area (CAD screen). Nor do they change the original pattern in the Patterns folder.



General Stitcher Settings^[52] - The first several settings refer to how the pattern will be stitched. These settings are based on the current CS default settings.

Pattern Name - the name of the pattern highlighted in cyan.

Stitches Per Inch applies to this pattern.

Pattern Speed is measured as a percentage of maximum motor speed. '65' means 65% of the maximum speed.

Tie Stitches Per Inch is the size of the stitches taken when doing tieoff stitches.

Tie Stitches is the number of stitches taken when doing tieoff knots.

General Pattern Settings^[52] - The remaining settings refer to the pattern size and placement. If the pattern needs to be a specific size, now is the time to change it. The same holds true for the Freeze Aspect setting and the Selected pattern Rotation.

Pattern Width is the width of one pattern, measured at the widest point.

Pattern Height is the height of one pattern, measured at the tallest point.

Freeze Aspect^[91] - 'ON' means the ratio of Height:Width remains the same when the size changes. So, if one of the dimensions is changed, CS will change the other automatically to keep the ratio the same. 'OFF' means CS will allow the ratio to be distorted.

Designer Notes - are notes you can input and edit.

Margin is the distance between the pattern and the boundary line. It is not recognized in Repeat Patterns or in E2E. It is intended only for the Pattern To Boundary function.

Save the project^[67].



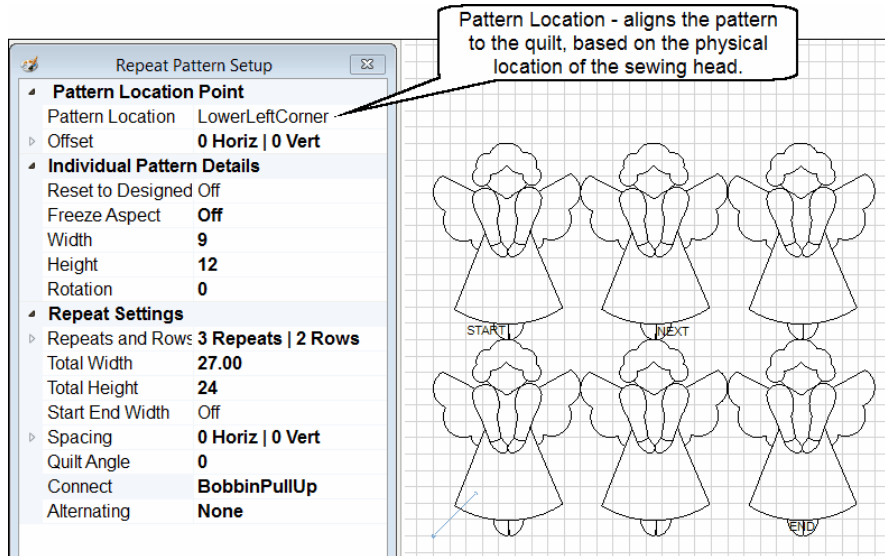
3.4.3.4 Step4: Repeat Details

Step 4: Click on Repeat Patterns icon. CS asks for a reference point, and it displays a box on the left which contains the settings for quilting repeat patterns. You can either decide for yourself how many repeats and rows you need, or you can provide the measurements of the total size, and CS will do the calculations for you.

Pattern Location Points help position the repeated patterns on the quilt top.

Pattern Location is a specific point on the quilt that is used for placing patterns.

Offset is used if the repeated patterns need to be positioned some distance from the initial pattern location (reference) point. As an example, the reference point may be the upper left corner of the quilt, but the repeated patterns are intended for an inner area, which starts some distance away. This distance is measured in two directions, moving Horizontally and Vertically.



Individual Pattern Details

Reset to Designed - this choice allows the original pattern dimensions to be reset.

Freeze Aspect - 'ON' means the ratio of Height:Width remains the same when the size changes. So, if one of the dimensions is changed, CS will change the other to keep the ratio the same. 'OFF' means CS will allow the ratio to be distorted.

Width is the width of one pattern, measured at the widest point.

Height is the height of one pattern, measured at the tallest point.

Rotation - is the angle of each pattern.

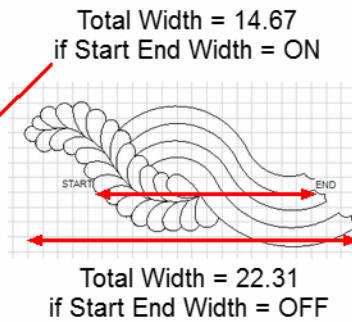
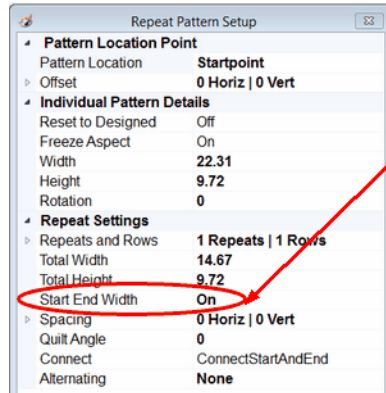
Repeat Settings show how many repeats and rows are needed to fill the space.

Repeats and Rows are the counts of how many patterns to place across the area (repeats) and down (rows).

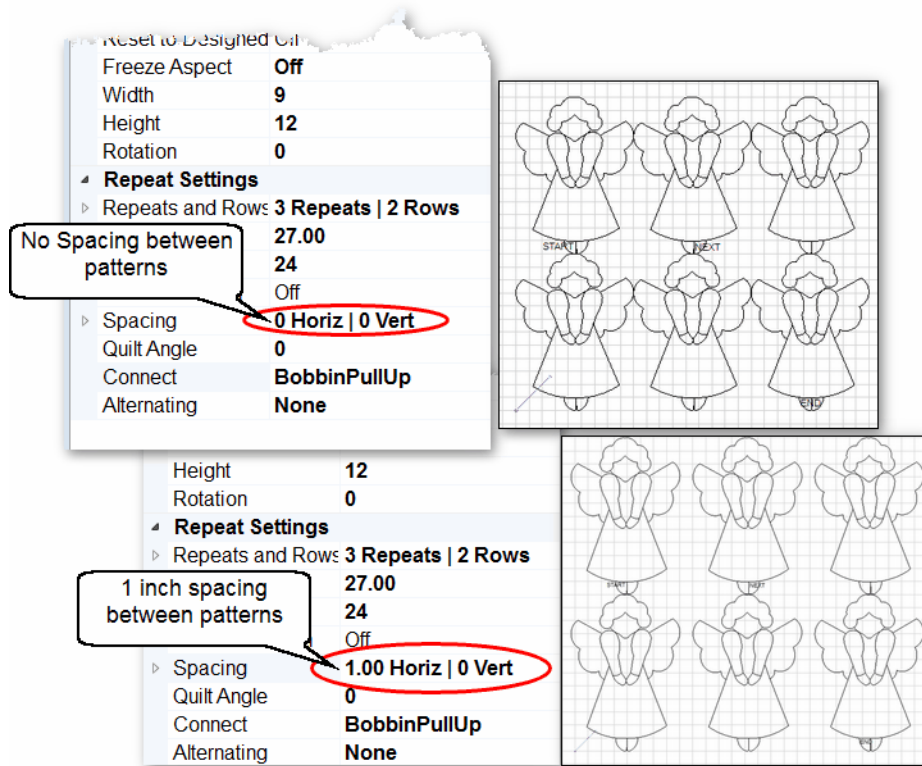
Total Width and Total Height are calculations based on the pattern size and the number of repeats/rows. It is possible to modify the total size, and let CS adjust the pattern size, repeats and/or rows. Several of the settings below have an impact on the layout of the patterns which also affects the total size calculations.

Start End Width - The width of a pattern is usually the widest part of the pattern.

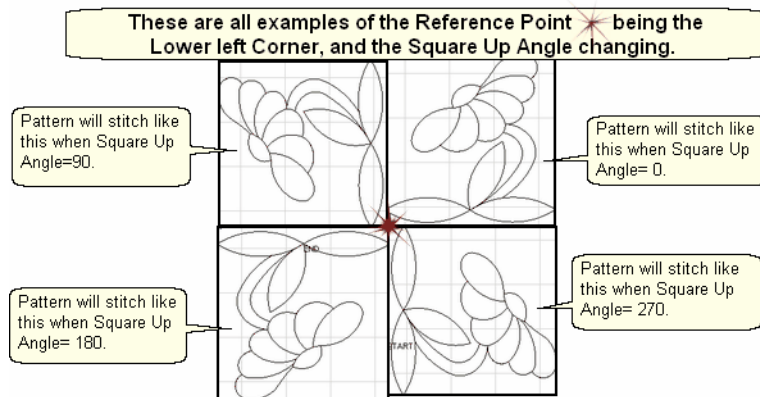
However, when patterns nest together, the distance between the startpoint and the endpoint is less than the total width. By default, StartEnd Width = ON, so CS will use the distance between the startpoint and endpoint as the width for repeat calculations. If StartEnd Width = OFF, CS will use the widest part as the width for repeat calculations.



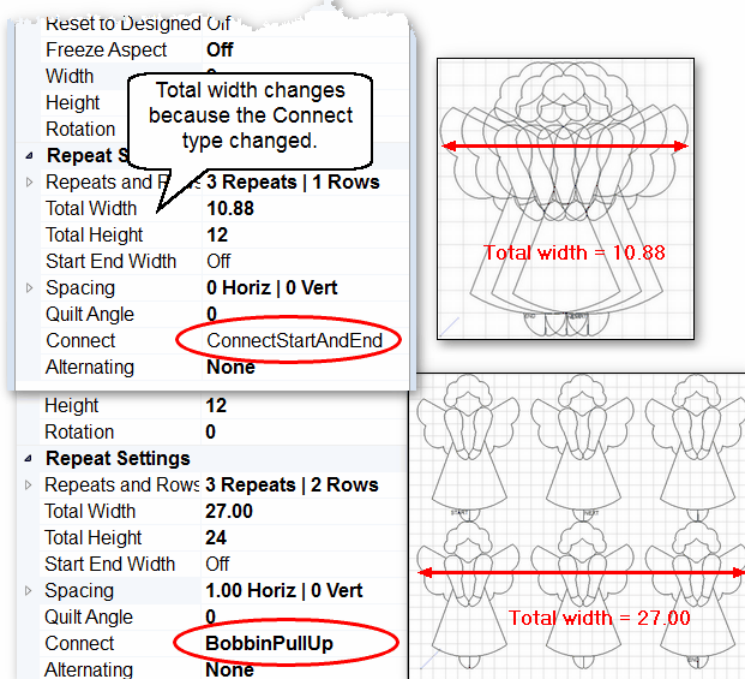
Spacing - The pattern placement can be adjusted as desired. The Horizontal spacing affects the space between the repeats. The Vertical spacing affects the space between rows. Space can be increased (positive spacing) or decreased (negative spacing). CS automatically includes the spacing adjustment when it calculates the Total Width and Total Height of the area to be quilted.



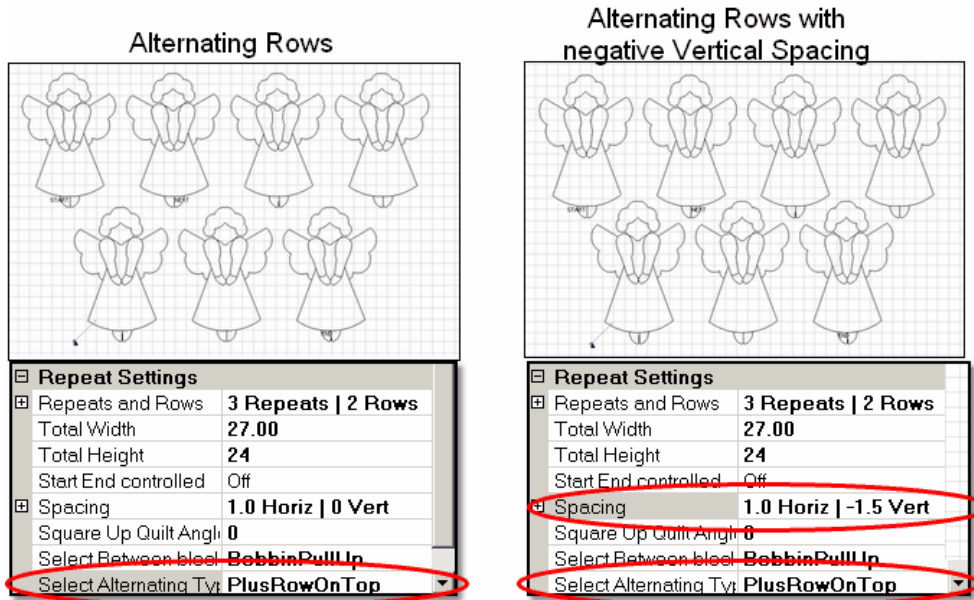
Quilt Angle - is the number of degrees that the set (1 or more) of repeated patterns is angled.



Connect... affects how CS connects the patterns. Bobbin PullUp means patterns are placed side by side and CS stitches them individually - the best choice for block designs. Connect means CS places them so the end point of one pattern connects with the start of the next pattern, and CS stitches them as one continuous row - the best choice for E2E. Naturally, this affects the total width calculation.



Alternating ... - allows the rows to be staggered. This is done by adding an extra repeat to every other row. The choices are None (default), Plus Row on Top (the first row gets the extra repeat) and Minus Row on Top (the second row gets the extra repeat). Alternating patterns are often nested to eliminate the gap between rows. This is done using a negative Vertical spacing, as shown below.

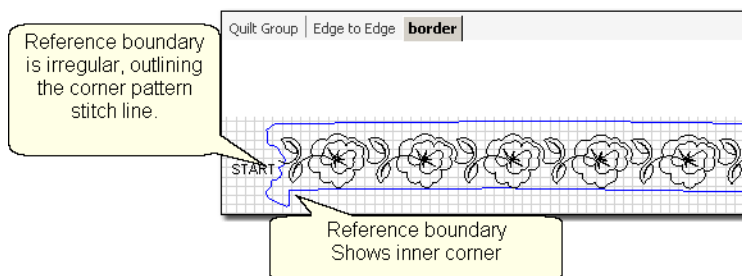


3.4.3.5 Step5: Adjust and Quilt

Step 5: Adjusting (resizing) Patterns.

The previous section explained in full detail ['How To' adjust](#) the patterns. But, why do you need to? CS will plan the quilt patterns and will stitch them with absolute perfection. Unfortunately, quilts won't ever be that perfect, so this is the time to create reference boundaries.

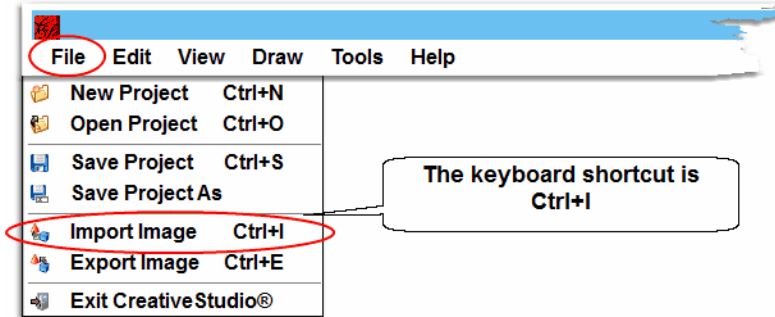
It is a fact that borders and blocks are rarely square, so by creating a reference boundary around them, you will see an image on the screen which enables you to adjust the pattern to fit the 'real' quilt, as defined by the reference boundary. In the following example, the reference boundary shows the border space, the inside corner location, and the stitch line of the patterns already stitched in the corner. The reference shows us the border patterns need to be moved up so they don't stitch on the seamline.



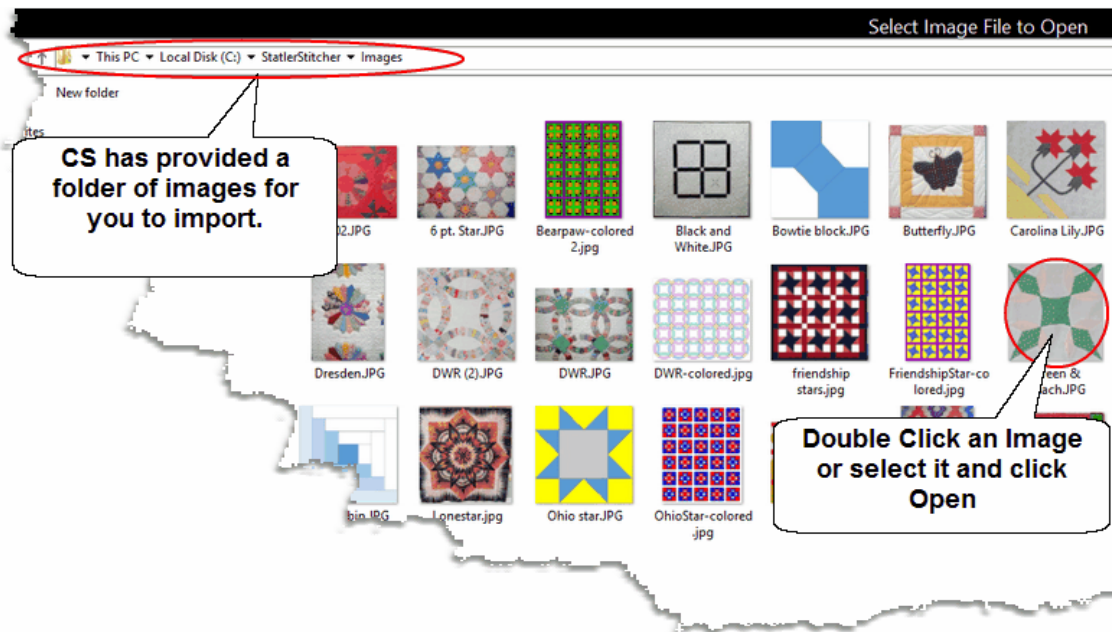
The quilting process causes shrinkage, so it is wise to create reference boundaries as you work, not all at once. It is also worth noting that reference boundaries can / will be used every time the quilt is rolled because that can cause the layers to shift.

3.4.4 Import - Creates a Design Group

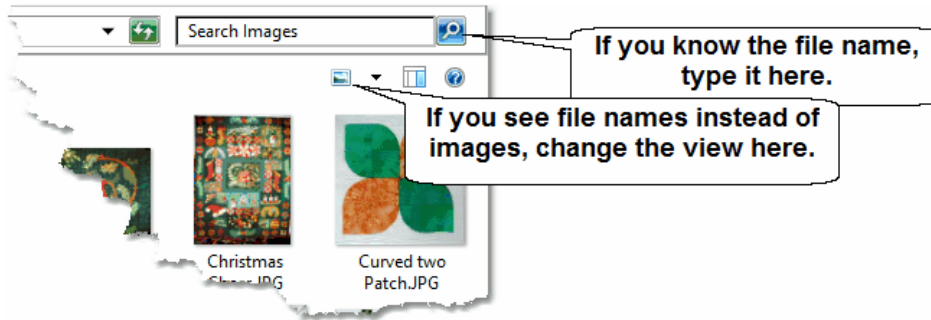
Images of quilt blocks can be imported into a project. CS will create a new quilt group for each imported image, called a Design Group. To import an image, click or tap on the command File, and then Import Image.



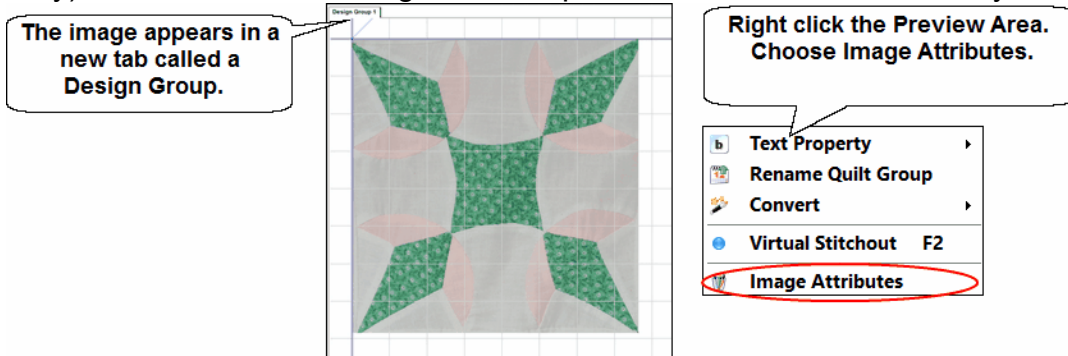
CS will open the File Explorer screen, showing the path for the images. The folder that CS provides is: C:\StatlerStitcher\Images. Each of the images is a picture in .jpg format, which is the most common photo format. Choose an image by double clicking it, or clicking the "Open" button.



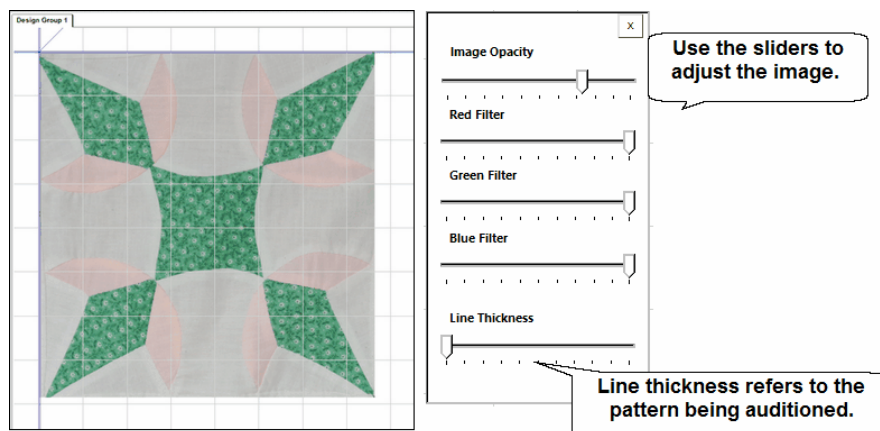
CS has provided images of numerous quilt blocks for you to use, but you could also take a photo of your quilt block, and import that. The import Image feature helps by offering a Search option (in the upper right of the screen). If you import your own photos, you should use descriptive names.



Import will only work with pictures (.jpg). Each image has its own design group and although the photos can't be resized, the image characteristics (color filters and opacity) can be modified enough to allow patterns to be auditioned easily.

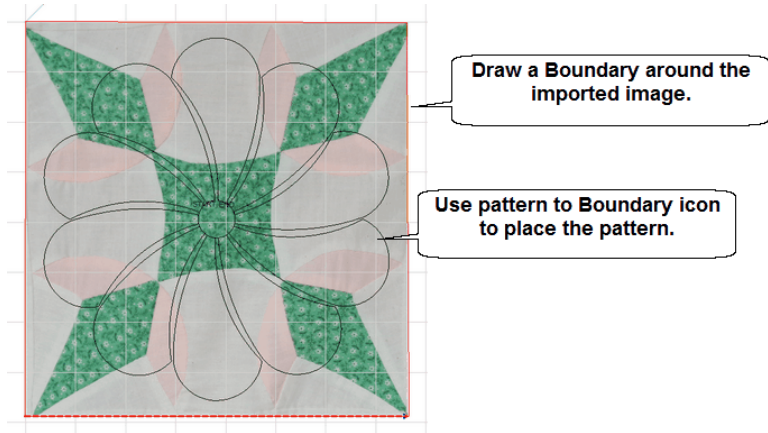


Right click in an open space in the Preview area to find the Image Attributes feature.



Bright, high contrast fabrics sometimes need to be toned down, and Image Opacity will do that. Or, sometimes one of the fabrics in the block is too bold, so the color filters (red, green and blue) can reduce the intensity of that color. The last setting applies to the patterns being auditioned. Sometimes the line thickness needs to be increased so the block and design can be matched more easily.

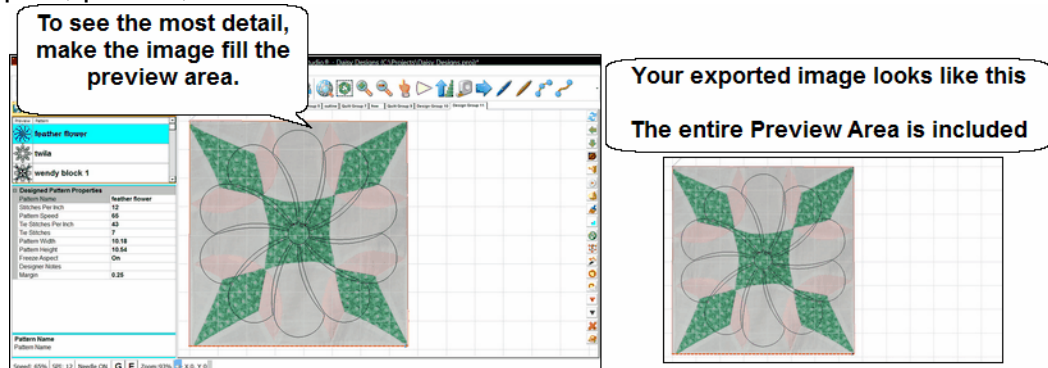
To audition a pattern, you must first select it, so it appears in the pattern list for your project. Use Draw Boundary (Alt+B) and click around the edges of the block image in the preview area. Then, move the pattern into the boundary.



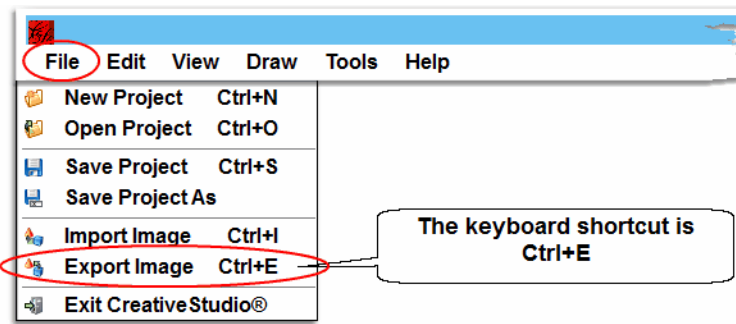
Resize and reposition the pattern as needed, using any of the available tools, even the draw commands. CS only allows one image on the design group at a time, so choose several patterns, audition them one at a time, and export an image of each.

3.4.5 Export - Sharing the images

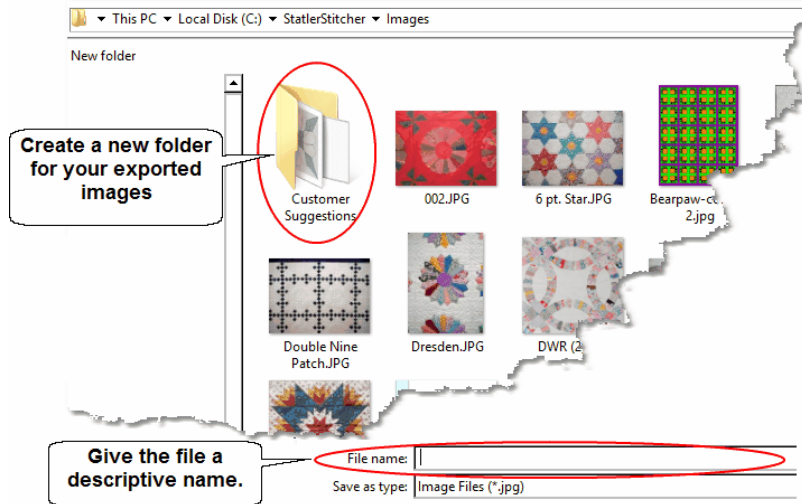
Using Export, the images can be exported to a folder where they can then be copied, printed, emailed or faxed to the customer.



When an image is exported, a snapshot of the preview area is taken, so adjust the zoom perspective to fill the space. This allows you to see the details and not include empty white space. When you have the right perspective, export the image.

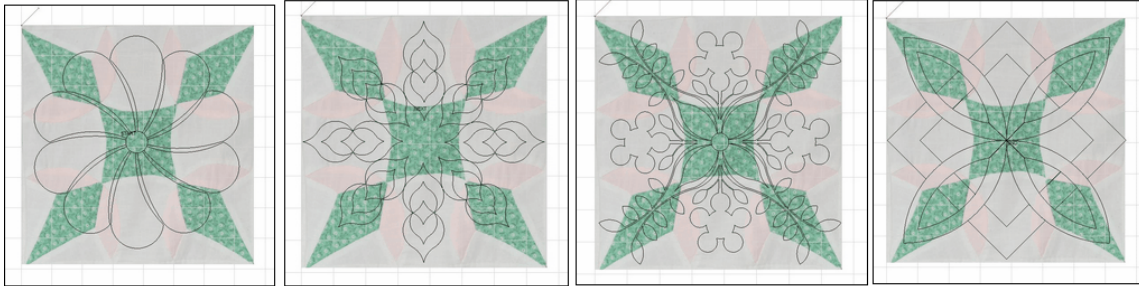


To export an image, click or tap on the command File, and then Export Image.



It is helpful to create a folder to hold the images you export. This keeps them together until they are used. It is always a good idea to give descriptive file names.

Here is an example of four designs being auditioned. All four were exported individually, then combined side-by-side in a different software program.



Each of the images was exported to a .jpg
From there they can be moved and shared with the customer.

3.5 Quilt Pattern Creation

It is a good idea to become familiar with the basic operation of CS before beginning to create your own original patterns. If you are a novice quilter, you will LOVE the ability to synchronize the designs on the computer screen with your quilt top. The Preview Area Grid and the Crosshairs will make this even easier.

If you are an experienced CS quilter, you are going to LOVE the the ability to create your own designs. CS comes with hundreds of patterns but sometimes it would be nice to easily modify the patterns to fit an unusual block on a special quilt without having to learn another software program. CS now has many options that can modify existing patterns, create new patterns, and combine features to create custom quilting patterns. Plus, there are features that check your newly created patterns, making sure all the pieces are connected and will stitch in the correct sequence.

There are several ways to access these features, depending on your computer, screen resolution and your own preferences. Sometimes icons appear at the right side of the screen and you can tap the icon with your finger. If you don't have a touch screen computer you will need to use the mouse to click on an icon, or to drill down from the command bar. Throughout this text, you will see "**Click or Tap**" which means **use your method of choice** to select and execute one of the features.

* [Right Click Options](#)¹⁰⁶ are the icons along the right side of the screen, which can also be accessed by Right Clicking (patterns, boundaries or open space) in the Preview area. The dialog box choices allow patterns to be stitched, restitched, repositioned, rotated, reversed, mirrored, stretched, squeezed, copied, converted, deleted, divided, echoed and exported, all of which essentially create new patterns. They can be customized to suit one unique quilt project, or they can be created so they will be valuable in many future projects.

* [Draw Options](#)¹⁴⁵ allow patterns to be created from scratch or from other existing patterns, using the mouse. Start with a clean screen or start with an existing pattern, and modify it to suit the quilt. Draw capabilities include the ability to create boundaries, and measure them. Define your own geometric designs using arcs, curves and lines. You can draw them on the screen using a background grid for accuracy, and stitch them out. Even P2P patterns can be drawn on the screen, previewed to see if the results are appealing. Check your newly created patterns using F2-Virtual Stitchout, which identifies breaks in the stitching path that would result in jump stitches.

* [Record Options](#)¹⁶⁰ allow the quilter to create a pattern by recording the motions of the sewing head. Not only will it record free motion quilting, but it can be used to trace things - like designs in the fabrics used to make the quilt. Imagine being able to create a completely new quilting design that mimics the fabric design. Now, that is custom!

* [Text Options](#)¹⁴¹ allow standard Windows fonts to be used as templates for creating new patterns. Now it is possible to easily personalize a quilt with a monogram, a date, an occasion or a name. Each line of text is an individual pattern

instead of each letter, which makes quilting soooo much easier.

* [Add Text Fonts](#)²⁴ (described in Utility Functions) explains how to install new fonts. The internet has hundreds of free fonts, many of which have themes, decorations, designs, figures, etc. and although they won't all stitch out smoothly, it is worth a try! There seems to be no limit to the number of free fonts available on the internet, even the simple pictures included in the Wingdings font will work.




3.5.1 Right Click Options

Right Click Options can transform quilting patterns for a truly custom design. There are several ways to access them, depending on your computer, screen resolution and your own preferences. Here are the choices:

1. Right-Clicking a pattern in the Preview Area.
2. Click on the icon listed on the right side.
3. Touch and hold a spot on the Preview area until a rectangle appears. Release and the Right Click Options appear.

These are very important, and many work together, making the quilting process much easier, accurate and more creative.

**Right Click a Pattern
to choose a function**

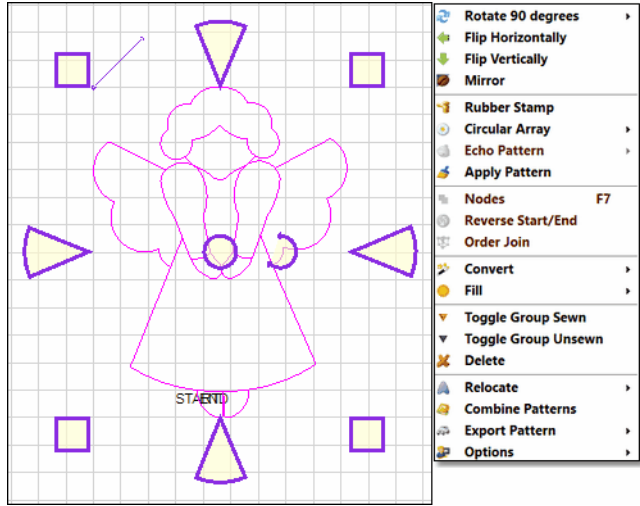
Reposition Pattern Options	<ul style="list-style-type: none"> Rotate 90 degrees Flip Horizontally Flip Vertically Mirror 	
Create New Patterns	<ul style="list-style-type: none"> Rubber Stamp Circular Array Echo Pattern Apply Pattern 	
Change stitching path	<ul style="list-style-type: none"> Nodes F7 Reverse Start/End Order Join 	
Modify Pattern	<ul style="list-style-type: none"> Convert Fill 	
Change Stitching Status	<ul style="list-style-type: none"> Toggle Group Sewn Toggle Group Unsewn 	
Synchronize	<ul style="list-style-type: none"> Delete 	
Pattern Design Options	<ul style="list-style-type: none"> Relocate Combine Group Export Pattern Options 	

**OR - use the
Right-Click icons on
the right side of the
screen.**

If the Right Click Icon bar is grayed out, right-click on any open space in the preview area to refresh it.

TIP: Throughout this text, you will see "**Click or Tap**" which means **"use your method of choice"** (mouse or touch screen) to select and execute one of the features.

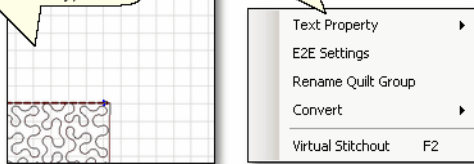
Right clicking a pattern or group of patterns displays a list of choices in a dialog box. These choices will vary depending on the sewing status and/or number of patterns selected.



Right clicking the Preview area in an open area displays a list of choices.

Right Click any open area of the CAD screen (not a pattern or boundary)

Choices are:

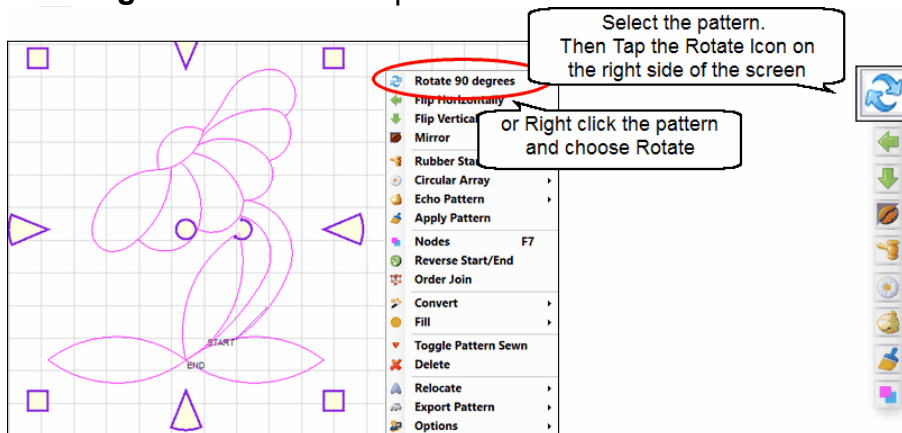


Note: Some selections do not appear for some CS functions.

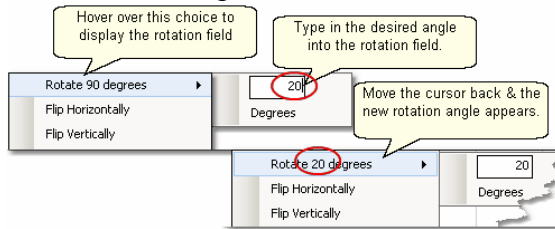
Not all of the choices shown above will appear every time. Some CS choices (like E2E Settings) appear only if CS is performing that function (Edge-to-edge).

3.5.1.1 Rotate Pattern

Rotate xx degrees - rotates the pattern counterclockwise.

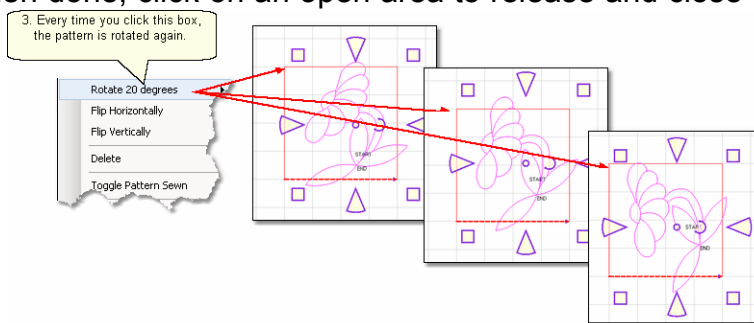


The default is 90° degrees, but this can be changed to any number.



With the mouse pointer, hover over the 'Rotate xx degrees' choice in the Options dialog box and an additional pop-up box will appear.

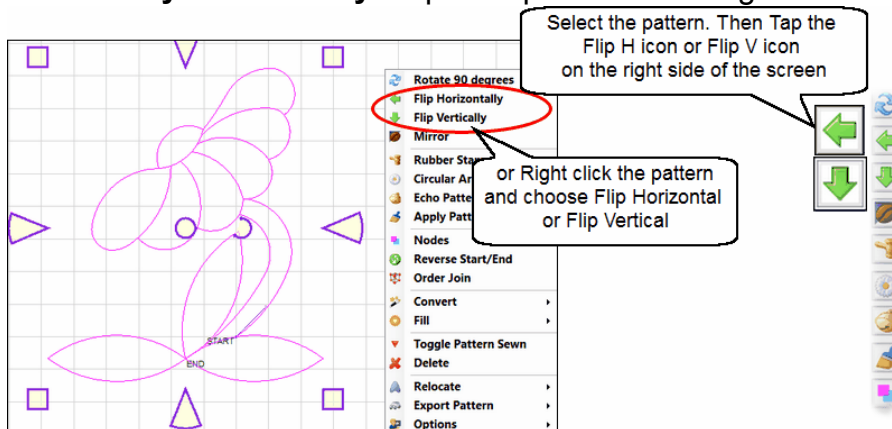
- * Type in the degrees of rotation needed, but don't press 'enter' yet.
- * Move the cursor back to hover over the 'Rotate' choice and the new rotation number will appear.
- * Click the 'Rotate' choice and the pattern will be rotated.
- * The Options dialog box remains active so click 'Rotate' as many times as needed.
- * When done, click on an open area to release and close the Options dialog box.



TIP: To rotate the pattern clockwise, enter a negative rotation angle. To nudge the angle rotation just a bit, enter a tiny number, like +/- .05 and click Rotate.

3.5.1.2 Flip Horizontal or Vertical

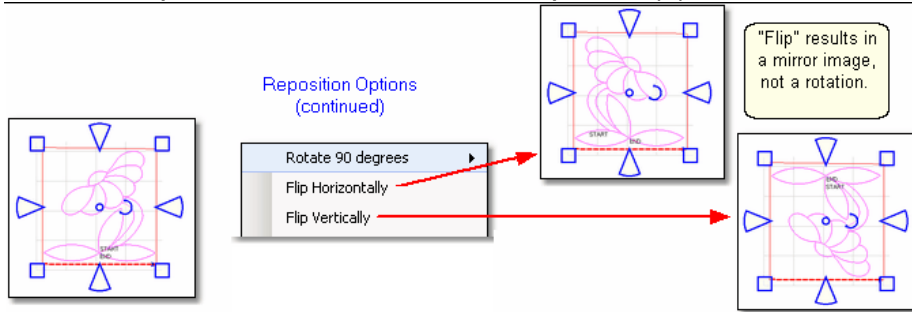
Flip Horizontally or Vertically - flips the pattern to change the orientation.



Flip Horizontally - replaces the original design with a mirror image, as if the mirror

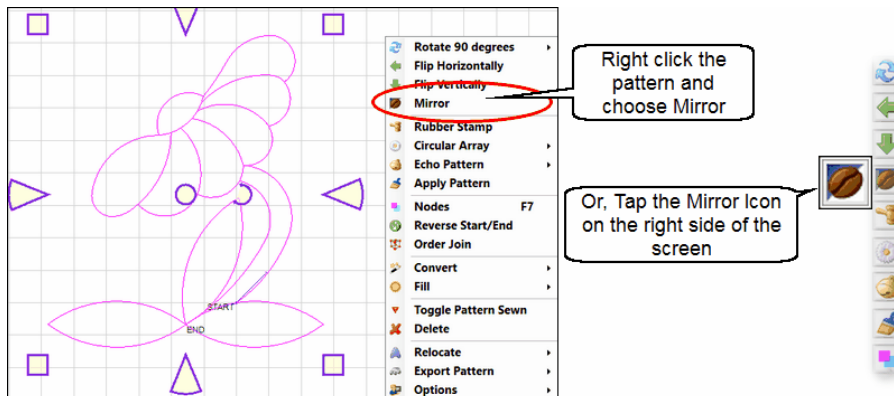
is held at the right or left side of the selected pattern(s).

Flip Vertically - replaces the original design with a mirror image, as if the mirror is held at the top or bottom of the selected pattern(s).

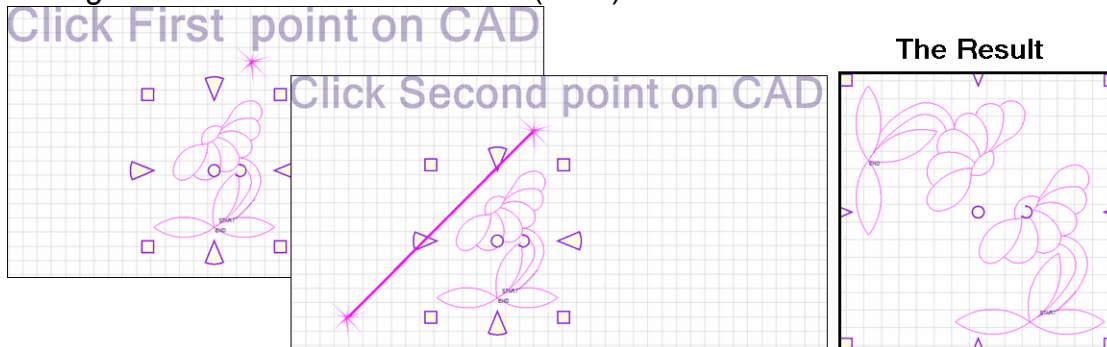


3.5.1.3 Mirror

Mirror - creates a new pattern which is an exact replica of the original, except for the orientation. This process uses any line as the rotation axis.



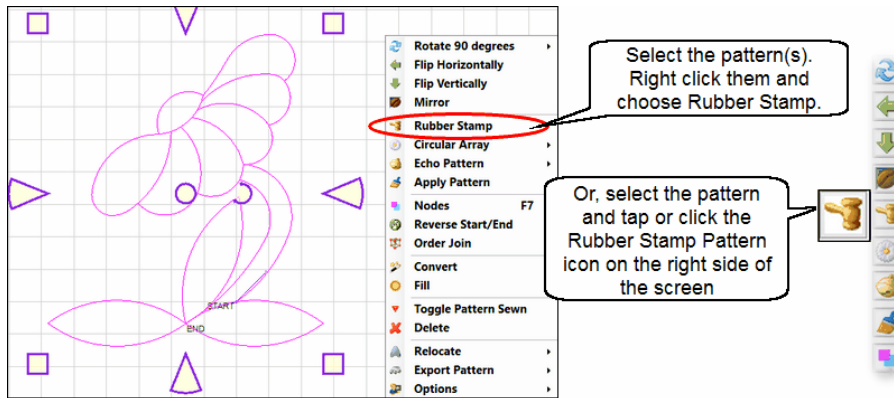
First select the pattern(s) to mirror. Then tap the Mirror Icon, or right click the pattern and choose Mirror. Screen prompts appear, telling you to click the beginning and the ending of a line on the Preview area (CAD). This is the 'mirror' line.



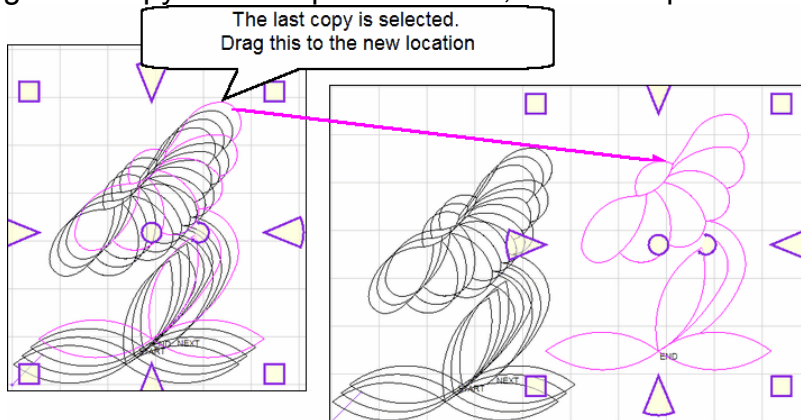
This duplicate copy can be edited just like any other pattern. If two or more patterns are selected together (to be mirrored), CS will combine them before performing the Mirror operation. Similarly, the resulting copy is also combined.

3.5.1.4 Rubber Stamp

Rubber Stamp - makes an exact copy an existing pattern or group of patterns. If a group of patterns are selected, CS will treat the rubber stamped copies as combined group patterns. The original patterns remain individual; only the copies are grouped.



- * Select the pattern(s) to be duplicated.
- * Right click the selected pattern(s), or tap the Rubber Stamp icon.
- * Click on 'Rubber Stamp' as many times as needed.
- * Drag each copy off the top of the stack, to its new position.



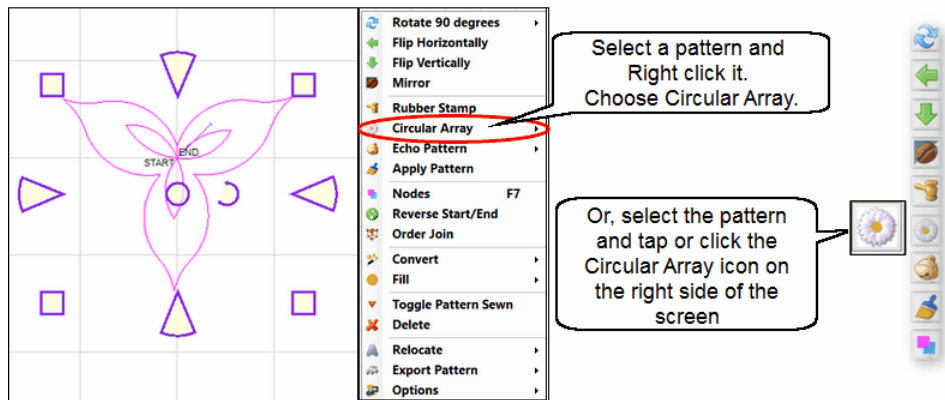
When you click on a stack of patterns, CS will only highlight the first or second patterns in the stack. To select one of the other patterns in that stack, click on the stack once, and then use the > (greater than) key to step through the stack, selecting the next pattern(s) in the stack. Use the < (less than) key to go backwards.

TIP: Every Rubber stamped copy of a pattern is automatically tagged as being 'unsewn'.

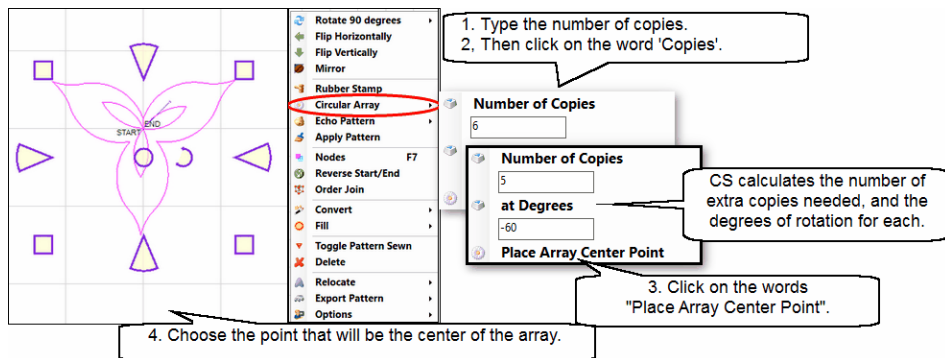
3.5.1.5 Circular Array

Circular Array uses one pattern to make a completely different composite pattern. It begins with a single design then repeats and rotates it for a completely different look. CS only needs to know which pattern to use, how many repeats are needed (or how many degrees between each repeat) and where the center should be placed. Begin with a single pattern image in the preview area.

TIP: Choose a design that is simple and will fill a circular space evenly because dense quilting at the center can make the quilt pucker.



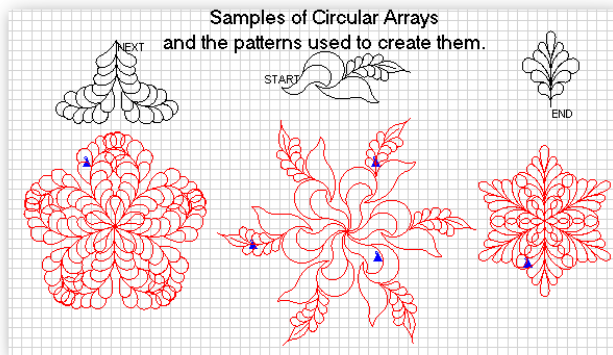
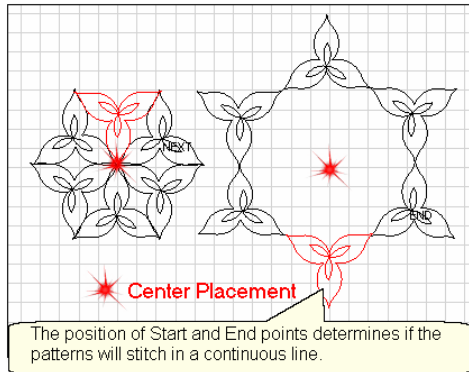
- * Click the pattern to select it.
- * Right click the pattern and choose Circular Array or tap the Circular Array Icon.



- * There are several ways to determine the number of copies and/or the number of degrees of rotation between them:
 - If you know both the number of copies and the degrees, just type in both of those numbers. CS will use your numbers, even if that means they don't add up to 360 degrees.
 - If you know the number of total patterns you want but not the degrees, just type in the **Total** Number, then click on the word 'Copies'. CS will subtract 1 from your total number, and use that for the number of copies. It will also calculate the number of degrees to use.
 - If you know the number of degrees between the patterns but not the number of copies, just type the number of degrees, then click on the word 'Degrees'. CS will

automatically calculate the number of copies to use.

- * Click on the words "Place Array Center point" and the cursor changes to a small crosshair.

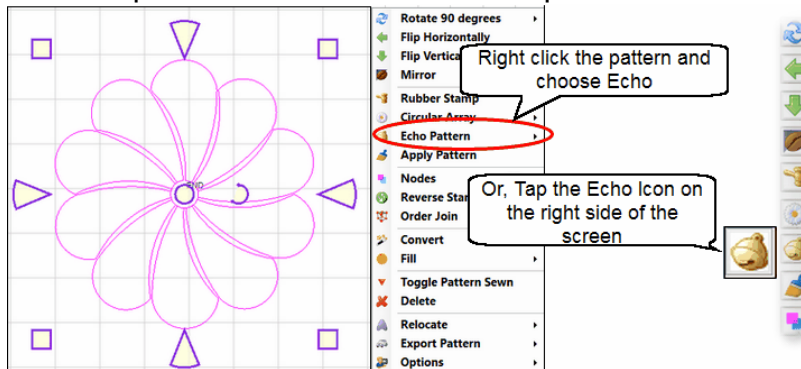


In the preview area, click where you want the center of the circular array to be placed. The center point does not need to touch the original pattern - in fact, the results are remarkably different!

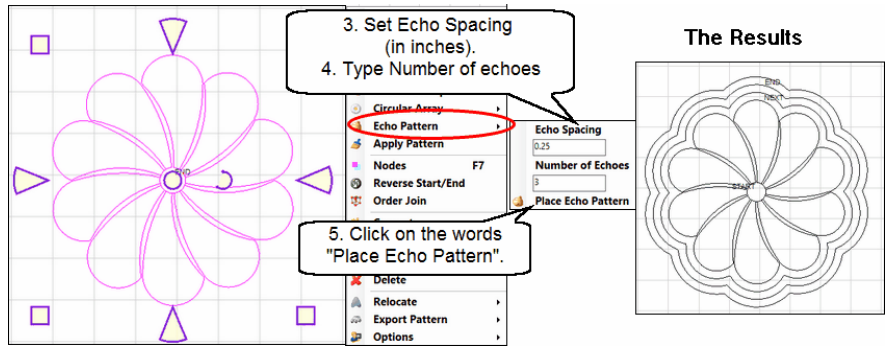
3.5.1.6 Echo Pattern

Echo Pattern - means to quilt an outline of a pattern, keeping a consistent spacing between the pattern and the echo. Choose the spacing and the number of copies to create a great look. Echos can also be done inside a pattern section.

To Create an Echo pattern on the outside of the pattern:



1. Right Click the pattern in the Preview Area to select it. Only one pattern can be used at a time for the Echo command. If multiple patterns are required, they must be connected, and must be combined as a group first.
2. Click on 'Echo Pattern' from the Options.

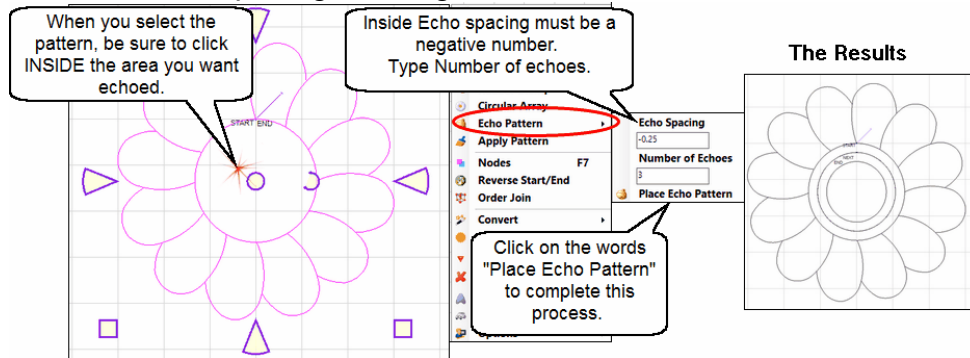


3. Type in the 'Echo Spacing'. This is the distance between the pattern and echo.
 4. Type in the number of copies.
 5. Click on the flower icon or the words 'Place Echo Pattern'.
- An hourglass will appear while CS creates the echo pattern. Be Patient because it might take time. The larger the Echo pattern, the longer the process takes.

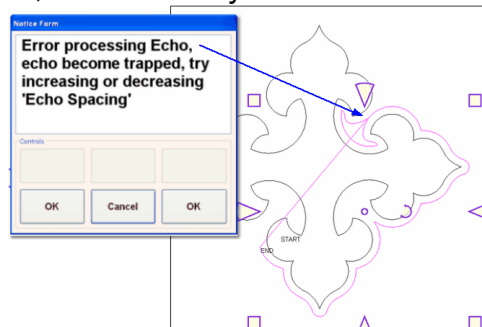
Inside Echo:

The process of creating an inside echo requires two unique steps:

1. To select the pattern, click in the center of the area you want echoed.
2. Be sure the spacing is a negative number.



Echo needs enough extra space so it won't cross over itself, creating an enclosed area. Here is an example of an outside Echo getting trapped. If this happens, just try different spacing or a simpler pattern. This warning does not appear for inside echoes, because they are intended to be enclosed.

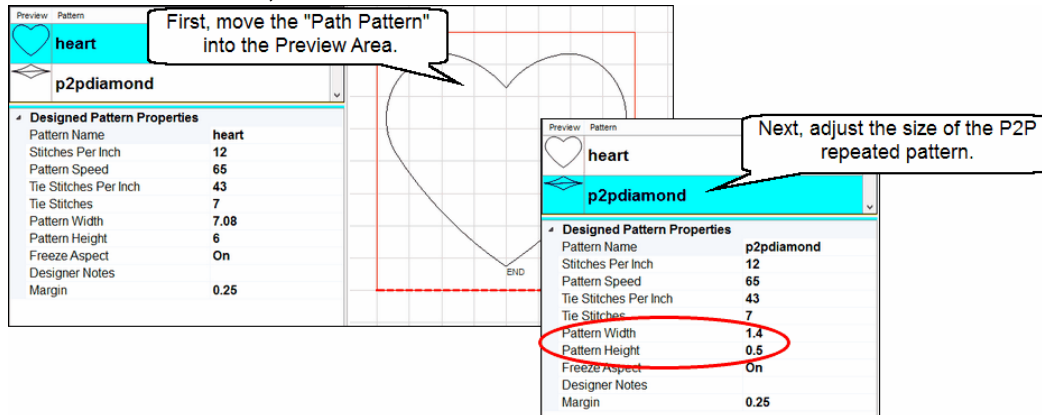


Echo only works on one pattern at a time, so if you need to echo a border area, group the border patterns together first. Echo copies can be divided, so if the border area needs to be done in 2 or more sections, the overlapping parts can be divided and deleted.

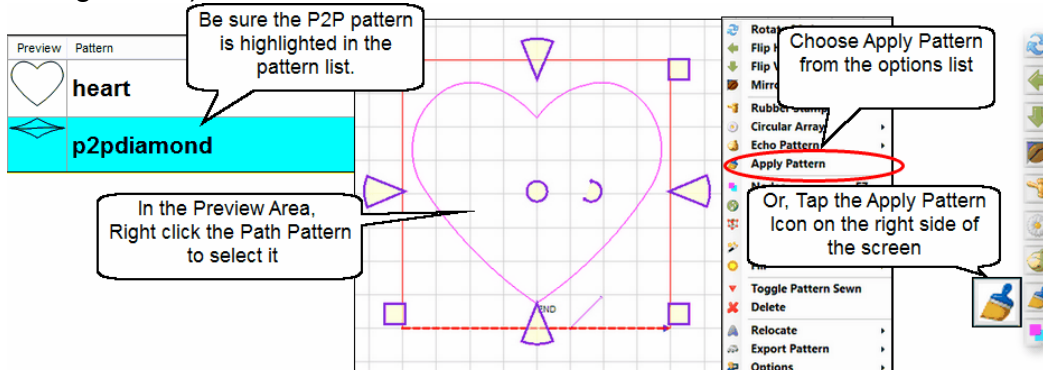
3.5.1.7 Apply Pattern

Apply Pattern - means to use one pattern as a path, and a second pattern as a repeated design that will be stitched along that path. Choose a 'path pattern' that is simple and choose a '**P2P**' pattern^[77] for the repeated design.

Resize the patterns as needed. The Path pattern should fit the quilt space. The P2P size should be small, but not less than 0.09 inches.

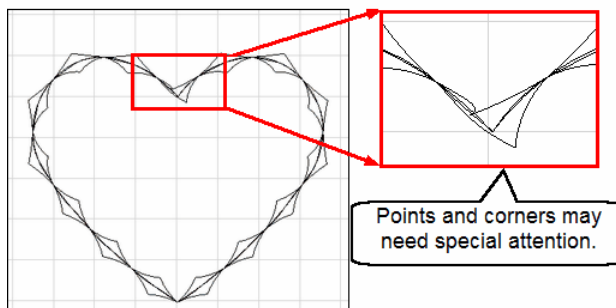


Have both patterns selected. Highlight the P2P pattern in the pattern list and select the Path pattern on the Preview Area. Choose Apply Pattern (using the icons or the dialog boxes).

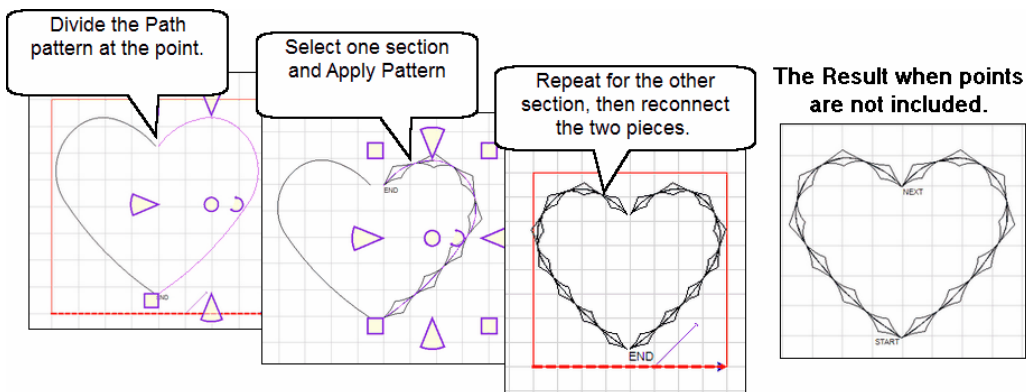


Multiple repeats of the P2P pattern are placed along the Path pattern.

The Result



Pay attention to how this meets at points and corners.



An option for this heart pattern is to divide the path pattern into two segments. 'Apply' the P2P pattern to each half and reconnect the parts.

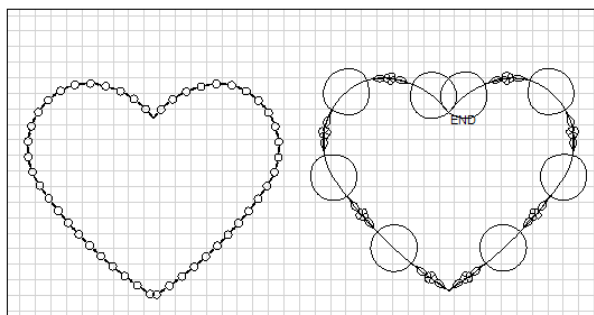
Each part of this new pattern will stitch out in the order it was placed on the Preview area. So, the original path pattern will stitch first, then the applied pattern. Delete the original Path Pattern if it would look better without it.

Since the patterns being applied to the path are P2P formats, it is possible to concatenate the P2P patterns, and use that sequence in the Apply Pattern feature. Be careful which patterns you choose together since their widths must be the same. Here is an example of choosing the wrong patterns.

Designed Pattern Properties	
Pattern Name	P2PCircle
Stitches Per Inch	12
Pattern Speed	65
Tie Stitches Per Inch	43
Tie Stitches	7
Pattern Width	0.5
Pattern Height	0.5
Freeze Aspect	On
Designer Notes	
Margin	0.25

Designed Pattern Properties	
Pattern Name	p2pflower
Stitches Per Inch	12
Pattern Speed	65
Tie Stitches Per Inch	43
Tie Stitches	7
Pattern Width	3
Pattern Height	0.78
Freeze Aspect	On
Designer Notes	
Margin	0.25

Be careful choosing the first pattern because that determines the sizes.



The P2PCircle was chosen first, then the P2Pflower, so the circle's Pattern Properties (sizes) were used.

The P2Pflower was chosen first, then the P2PCircle, so the flower's Pattern Properties (sizes) were used.

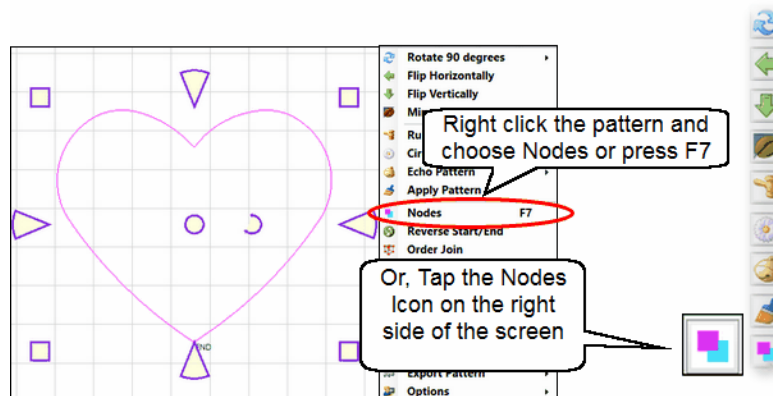
3.5.1.8 Node Mode

Nodes are an integral part of every pattern and can be displayed when needed. Every pattern is made up of segments (lines or arcs) and nodes. The beginning and ending of each segment is a node. Two contiguous segments share a node (the ending node of the first segment is the beginning node of the next segment). When a pattern is divided, it is at a node. When a pattern changes shape it is done using nodes. Designers can alter the stitching settings using designer nodes.

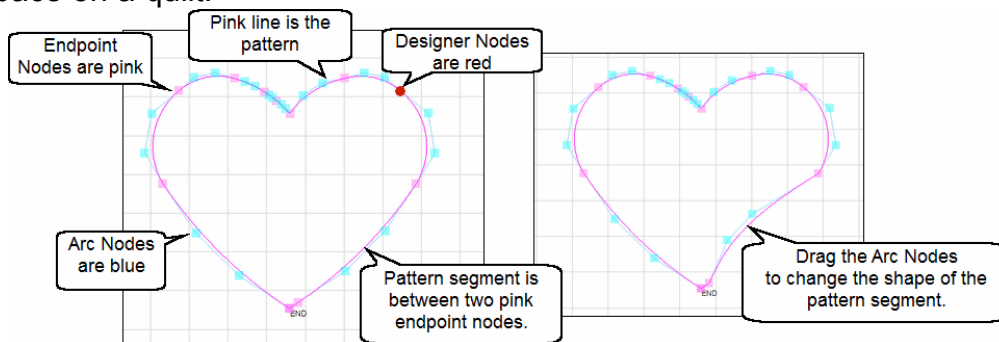
Node Mode (F7) displays the pieces of each pattern, showing all nodes. One (and only one) pattern must be selected before starting Node Mode.

- Endpoint Nodes are pink squares and are used when moving, dividing or combining pattern segments.
- Arc nodes are blue squares and they are used to reshape the pattern segments, but not for dividing or combining pattern segments.
- Designer nodes are red dots and can be used by designers to change some of the pattern attributes.

Changing the pattern shape requires changing the segments and that is done using the Nodes.



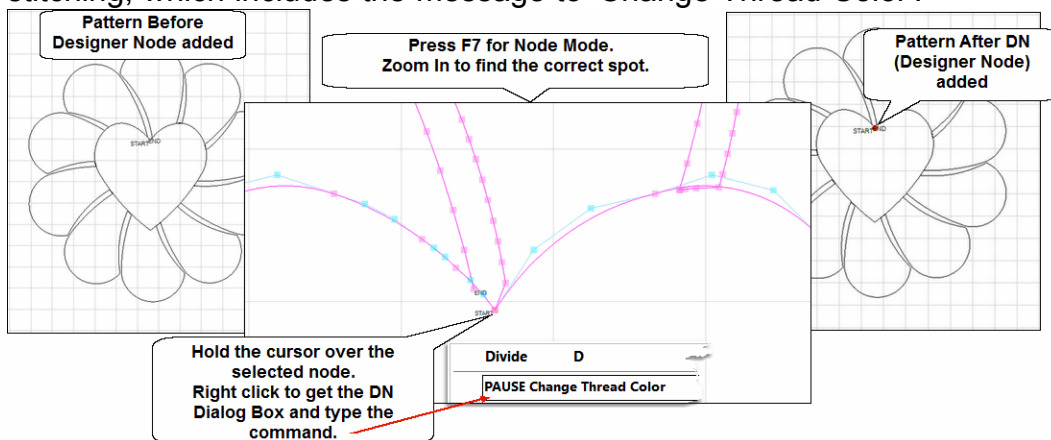
Having the ability to change the shape of a pattern makes it easy to fit a pattern to a space on a quilt.




Nodes are not technically [pattern anchors](#)³⁰, but they are included when a pattern is selected, and the quilter is cycling through the different types of pattern anchors. Double clicking a selected pattern will cycle through each of the relevant anchors. Deselecting the pattern will hide the nodes.

Designer Nodes are a special type that allow changes to the stitching settings. They can be used to change the stitch length (SPI), the stitching speed, or can force a pause in the stitching process, perhaps to allow a thread color change. There are three keywords which cause the settings to change, and they **MUST** be typed in capitals. The keywords are PAUSE, SPEED, and SPI.

The first Designer Node keyword is PAUSE. In the following example, the pattern needs to have the heart shape stitched in one color thread, and the surrounding feathers stitched in a different color. The Designer Node will force a pause in the stitching, which includes the message to 'Change Thread Color'.



1. Choose the pattern, and place it on the Preview area. If any changes need to be done to the pattern, do them first.
2. Select the pattern, Click the Node Mode icon,  or press F7.
3. Zoom in and find the place where the Pause needs to be inserted.
4. Hover over that point, Right click to get the Designer Node dialog box.

Caution: Be careful not to choose Divide!

5. Type the word "PAUSE" in all capital letters, followed by a short message.
6. Press Enter. The Designer Node (a little red dot) appears on the pattern.

Deselect the pattern and the nodes disappear, except for the red dot. When the pattern is stitched, and the node is encountered, the following message will appear on the screen. When finished changing the thread, press OK and the stitching will continue to the end (or the next Designer Node PAUSE).



The second Designer Node keyword is SPEED. This keyword is followed by a number which is actually a percentage change.

- SPEED 50 changes the stitching speed to 50% of the original pattern speed.
- SPEED 100 changes the stitching speed to its original pattern speed.
- SPEED 125 increases the original pattern stitching speed by 25%.


It is worth noting that the calculations are done based on the speed assigned to the pattern in the project. If the speed had been increased or decreased while stitching prior to the Designer node (using the buttons on the keypad) that modified rate would be ignored, and the calculation would look only at the rate assigned to the pattern in the list.

The third Designer Node keyword is an abbreviation = SPI. This also is followed by a number which is actually a percentage change.

SPI 50 will reduce the Stitches Per Inch to half, making the stitch larger
 SPI 100 changes the SPI to the original pattern size.
 SPI 200 will double the Stitches Per Inch, making them smaller.

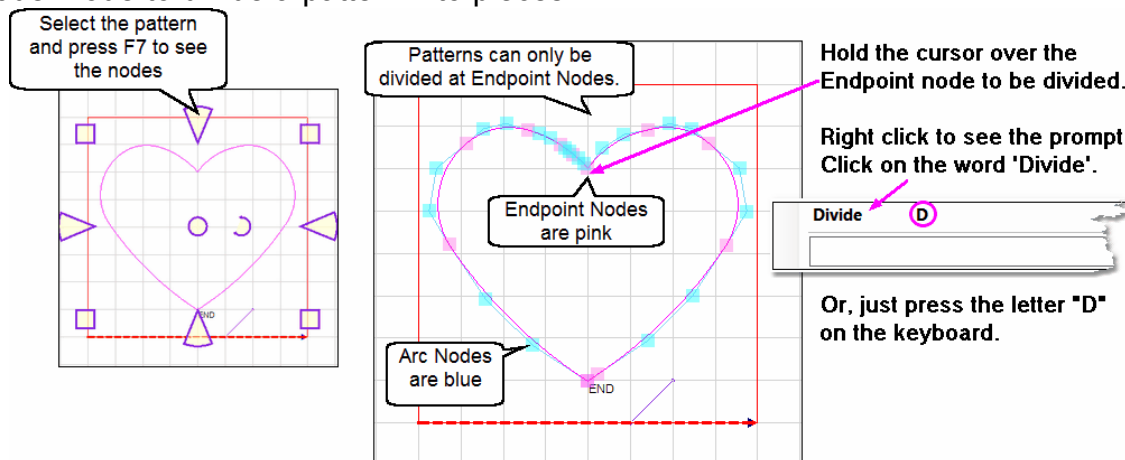
It is worth noting that the calculations are done based on the SPI assigned to the pattern in the project. If the SPI change is defined twice, the calculations are done based on the SPI of the pattern in the project, so the result is not compounded.

Dividing a pattern that has Designer Nodes will remove those nodes, so be careful to do all the structural pattern changes first, and add the designer nodes last. Designer nodes were originally developed for designers, but everyone can use them. They are especially helpful when working with a fussy thread that seems to want to break when it comes to a certain place in a pattern. Now the quilter can add Designer Nodes to slow down when going into the fussy part, and speed back up when it can.

 **TIP:** Dividing a pattern that contains Designer Pauses will remove the designer nodes.

3.5.1.9 Divide

Divide Pattern - Patterns can only be divided at an Endpoint Node (pink), so use Node mode to divide a pattern into pieces.



Dividing a pattern into 2 pieces is done with very few keystrokes:

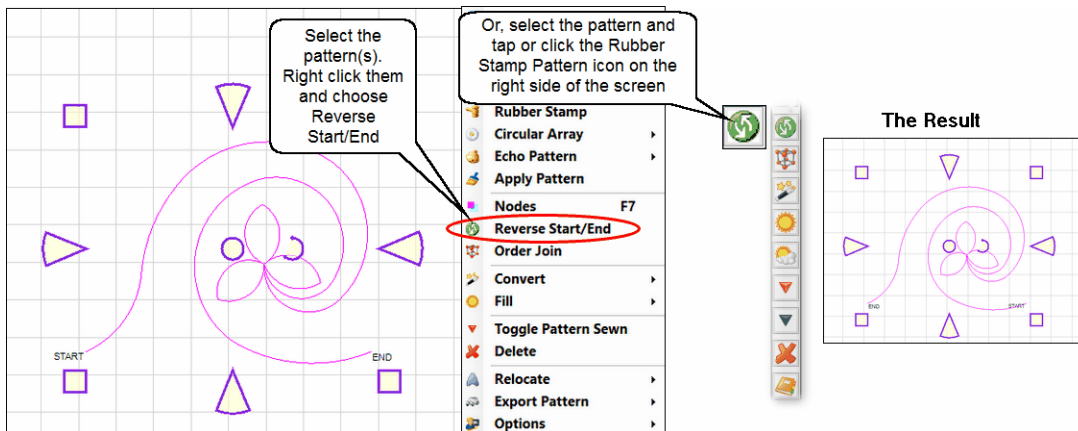
1. Click on the pattern to select it.
2. Press F7 to display the Endpoint nodes.

3. Hover over the endpoint to be divided, until the cursor shape becomes "+". Then press the letter "D" on the keyboard.
 The original pattern is now 2 separate patterns.

Tip: If the pattern needs to be divided at a specific place, and there isn't a node at that place, it is possible to add more nodes. Isolate (divide out) the segment that contains the specific place, and convert it to a curve. This adds nodes to that segment. See '[Convert - Pattern to Curve](#)'¹²¹.

3.5.1.10 Reverse Start / End

Reverse Start/End - will reverse the start and end points, essentially allowing patterns to be sewn backwards!



When patterns are rearranged to make interesting combinations, they sometimes don't stitch out in one continuous line design. It is easy to reverse the direction of a single pattern as shown. However, in more complicated pattern modifications, there are two more processes that change the sewing direction:

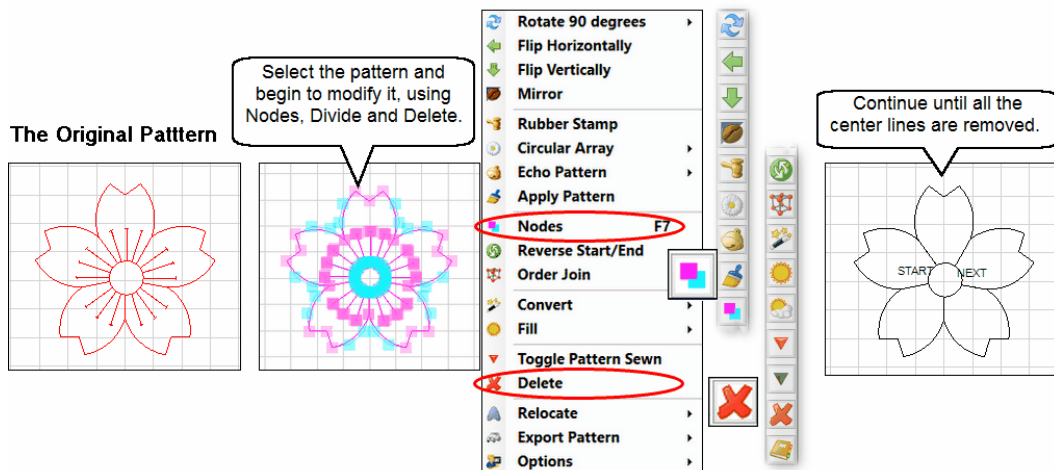
1. Set Sew Order - lets you assign the sewing sequence and reverse direction.
2. Order Join - automatically assigns the sewing sequence and reverses direction if needed.

Design It Yourself: Use keyboard function keys to check patterns.
 F2 -Virtual Stitchout will check the stitching path.

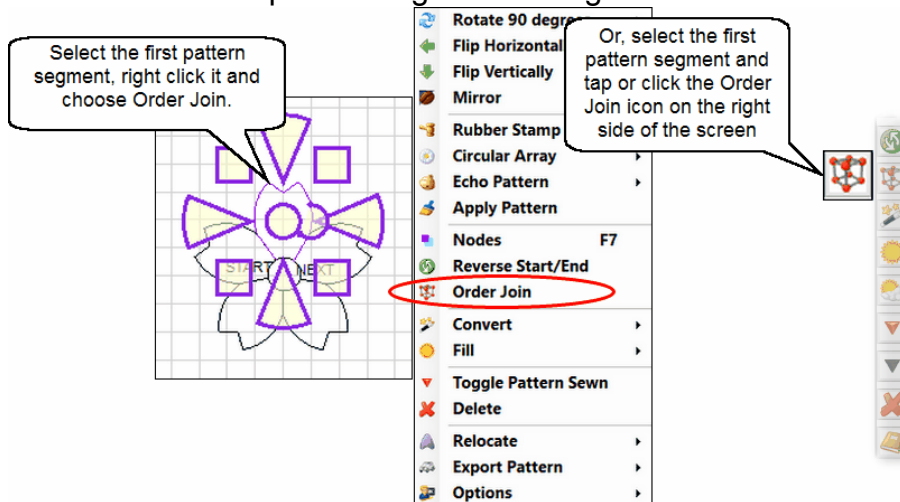
3.5.1.11 Order Join

Order Join - is a process that checks all the pattern segments on the screen and automatically makes them continuous if possible. This connection is based on their relative positions. This is especially useful when a pattern has had numerous changes to it.

In the following example, a flower pattern was chosen, but needed to be simplified to fit the space. Using [Node Mode](#)¹¹⁶, the center lines in the pattern were divided and removed. The remaining pattern segments need to be reconnected so there are no jump stitches when the pattern stitches out.



Once the pattern has been modified, select the starting segment. CS will begin here and reassemble the pattern segments using Order Join.



CS uses the following rules when reconnecting the pattern segments:

1. Begin with the selected segment and follow that path to the end of that segment.
2. If there is a pattern segment already 'snapped' to its endpoint, that will be the next segment reconnected. If there are two or more snapped to its endpoint, CS chooses the one with the lowest stitching order number.
3. If no pattern segments are snapped to the endpoint, CS looks for a segment that is within one stitch length distance from the current pattern segment. It chooses and reconnects the closest segment. If two or more are equidistant, CS chooses

the one with the lowest stitching order number.

- If no pattern segments are within 1 stitch length, CS stops joining the segments.

There are some important factors to mention -

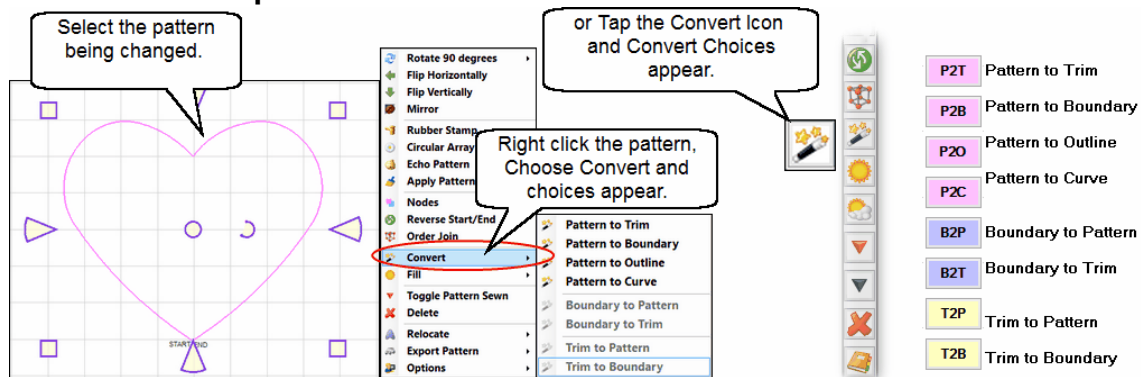
- CS ignores the original stitching direction of all component pattern segments, resetting them all based on the reconnection rules.
- It is a good idea to select the reconnected pattern, and move it to the side. Verify the new stitching path using the Virtual Stitchout function, F2.
- If any pieces are missing, it will be obvious, and changes need to be made (Press UNDO as needed). If there are any extra pieces left, they will be seen and can be deleted.

It is a good idea to use a separate quilt group for redesigning patterns. Once the pattern is modified, it can be exported, and used in the current project as well as in any future project.

3.5.1.12 Convert Pattern

Convert will change the characteristics of patterns, boundaries and trims. This saves time by eliminating the need to define objects multiple times.

Convert Pattern Options:

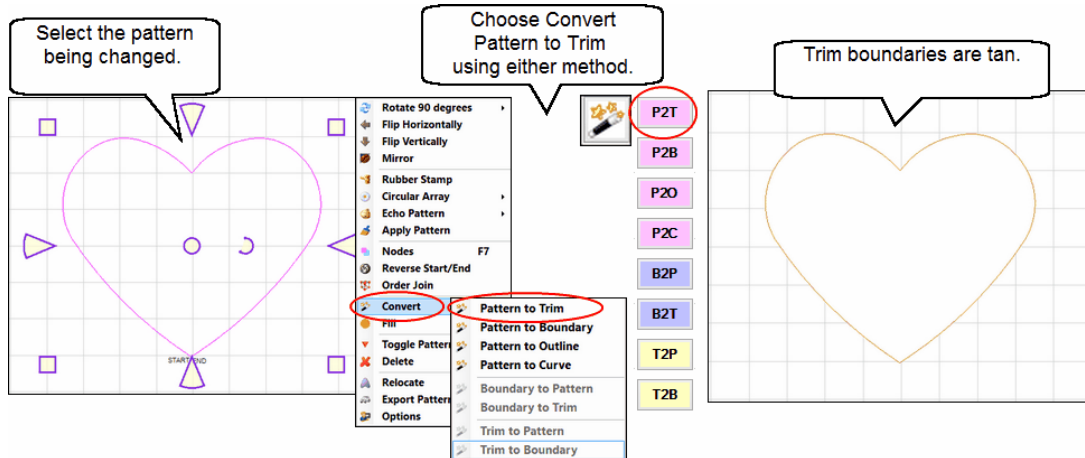


Select any pattern (or pattern segment) in the Preview Area and choose 'Convert' and more choices are displayed. Notice that some choices are grayed out in the dialog box. This means that the choice is not available for the item selected.

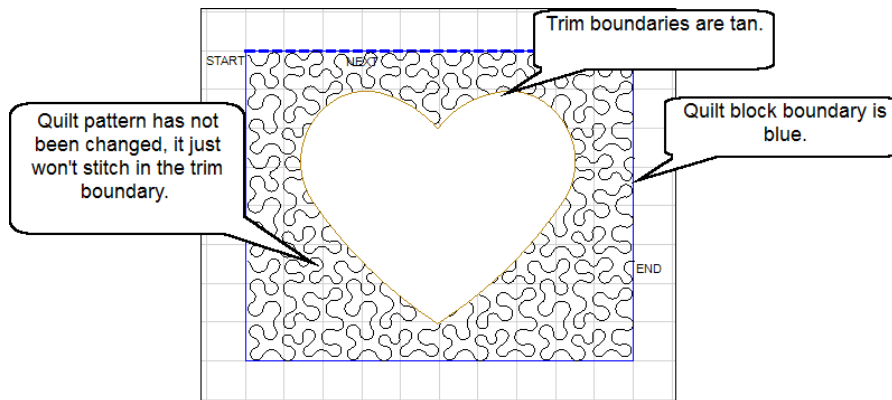
Pattern to Trim - This choice is useful when a pattern has been chosen and stitched, and there is another pattern to stitch in the background behind the original pattern. Why is this useful? A background pattern can be trimmed to fit around the Heart, without stitching over it.

In the following example, the heart pattern is stitched in the block, and a background filler pattern will be stitched behind it,

1. Draw a boundary around the perimeter of the quilt block.
2. Place the heart pattern in the boundary, resize if needed and stitch.
3. Select the heart pattern, Choose "Convert", "Pattern to Trim".



4. Place the background filler pattern(s) in the block boundary. Notice how the area inside the heart does not show as part of the stitching. CS will stitch up to, but not over, the heart.



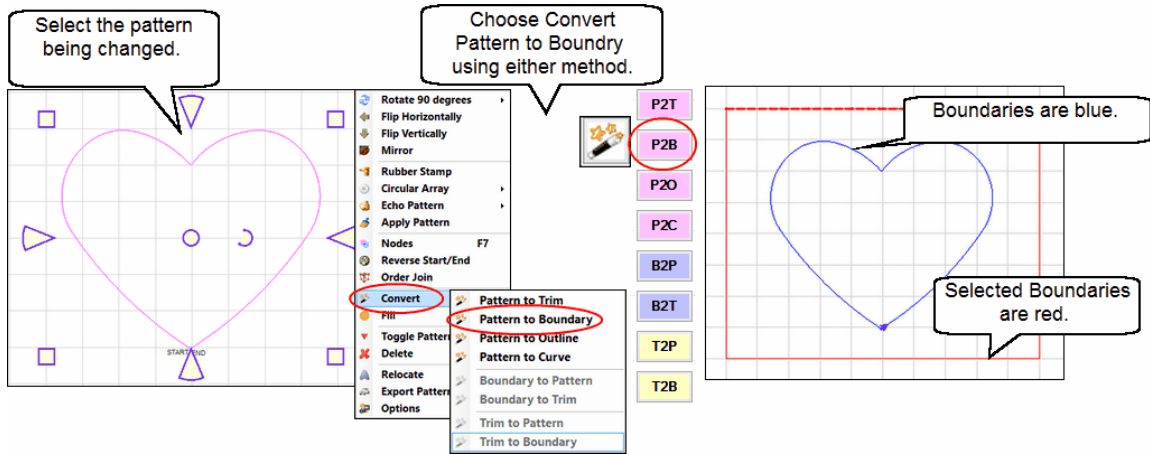
When the stitch line reaches the trim boundary it stops. Tieoff stitches are taken (if desired) and CS does a jump stitch (moves to the next stitchable part of the pattern) to resume stitching the background.

Note: The starts/stops may or may not include tieoff stitches. People who do competitive quilting often use trim boundaries so they can use the Competitive Tieoff stitches, which are virtually invisible. People who prefer to hand-tie their threads and bury them with a needle also prefer this method because it allows them to pause at each start and stop to pull up the bobbin thread and prepare to bury the threads. To avoid tie-offs completely, use the 'Fill Patterns' option, described in the next section.

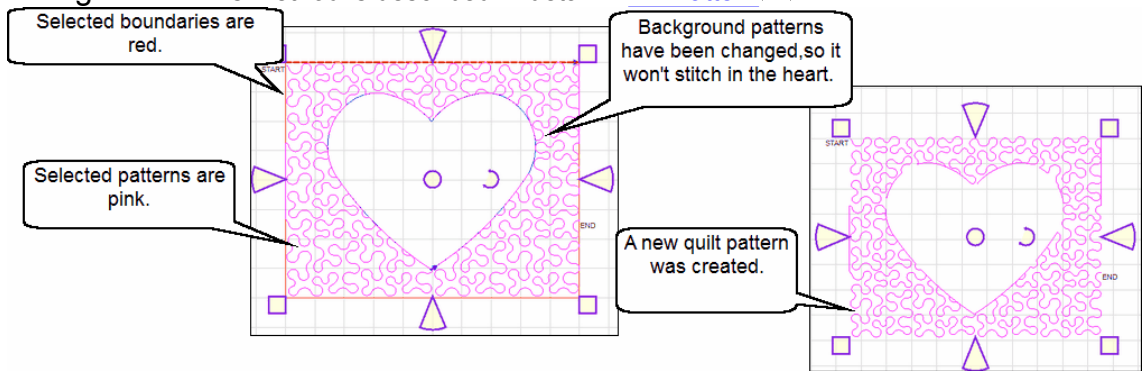
Pattern to Boundary - This choice is useful when a background fill pattern is preferred (because there are no tieoff stitches). The 'Fill pattern' feature uses two boundaries, so converting the heart pattern to a boundary provides one of them.

In the following example, the heart pattern will be stitched in the block, then converted to a boundary. The Fill feature will use this boundary to create a new pattern that will stitch in the background without stitching over the heart and without tieoff stitches.

1. Draw a boundary around the perimeter of the quilt block.
2. Place the heart pattern in the boundary, resize if needed and stitch.
3. Select the heart pattern. Choose "Convert", "Pattern to Boundary".

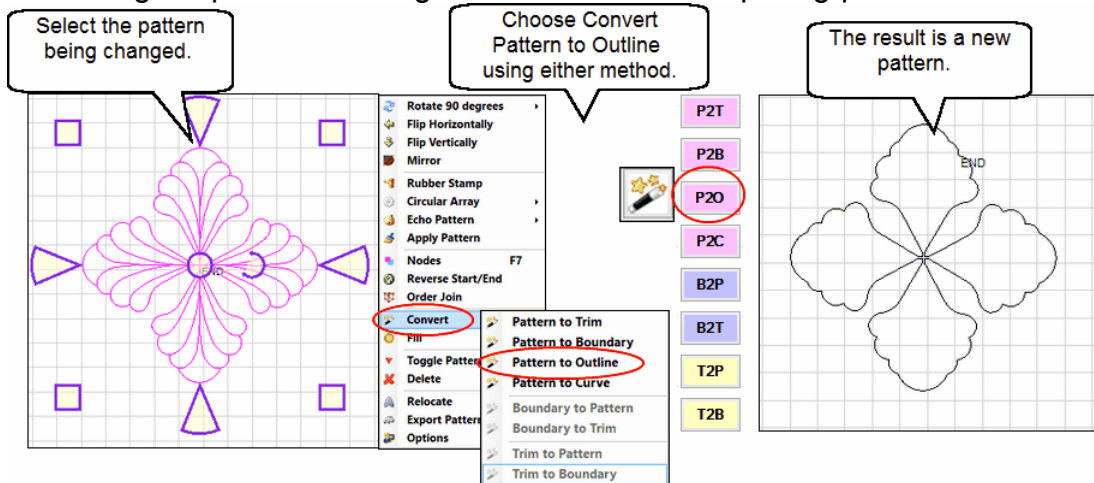


4. Place the background filler pattern(s) in the block boundary. Resize as needed so they fill the space between the two boundaries. Now use the Fill Feature to add the background. This method is described in detail in [Fill Pattern](#)¹²⁶.



By placing 1 or more background patterns in the block boundary, these patterns can be selected together and converted to a new pattern that 'fills' the space and does not start or stop during stitching, so there are no tieoff stitches.

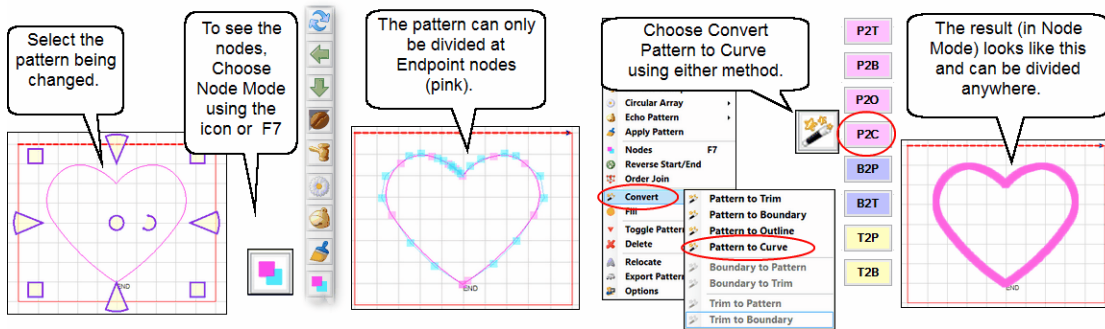
Pattern to Outline - This choice is useful when creating quilting designs that silhouette a previously stitched design. This is a great option when multiple repeats of the original pattern would generate too dense a quilting pattern.



1. Move the pattern to the Preview Area (any method).

2. Right click the pattern, Choose "Convert", "Pattern to Outline".
An outline is a stitchable pattern that is derived from the original pattern.

Pattern to Curve - This choice is useful when using one pattern to create a derivative pattern. Patterns can only be divided at the Endpoint nodes. If the original pattern needs to be divided at a place where there is no endpoint node, this is a good method adding nodes to the pattern.



1. Move the pattern to the Preview Area (any method).
2. Choose [Node Mode](#)¹¹⁶ to see if the nodes exist where you need them.
3. If not, Choose "Convert", "Pattern to Curve".
4. Choose Node Mode again to see that many nodes have been added.

Note: Once a pattern has been converted to a curve, it can not be adjusted using the blue Arc Nodes, only the pink endpoint nodes.

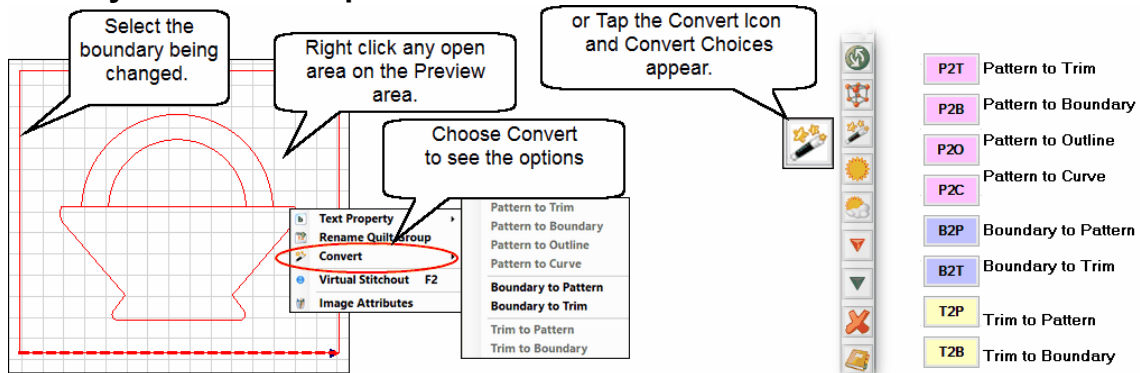
Tip: The process of Converting a pattern to a curve takes time and resources. To avoid the wait, it is best to subdivide the pattern first, into segments. Convert only the segments where a Divide is necessary.

3.5.1.13 ConvertBoundary

Convert Boundary allows a boundary to be changed to a new function.

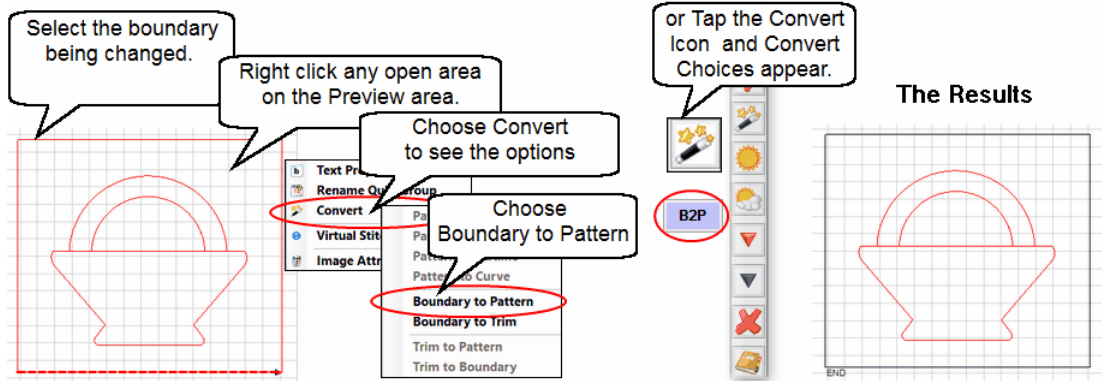
Click on the boundary to select it, then right click to see the choices. Boundaries can be converted to patterns or trims.

Boundary Conversion Options:



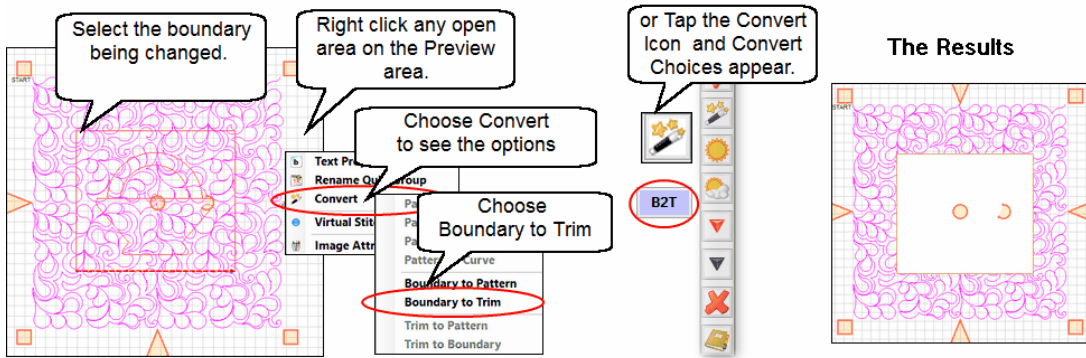
Boundary to Pattern - In this example a boundary was created for placing the basket pattern. The basket pattern was sewn (it is red indicating it has been sewn). An easy way to outline the basket pattern is to convert the boundary to a pattern,

and stitch it.

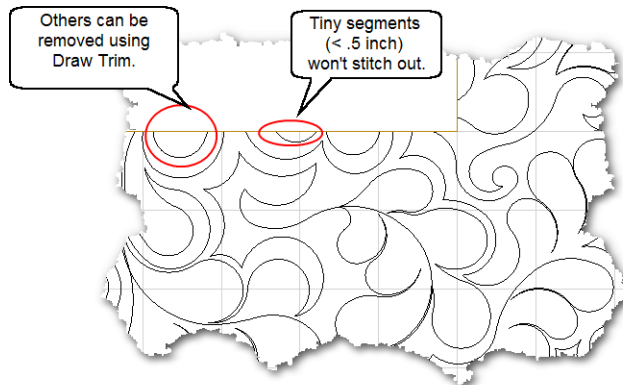


If the boundary was created using the four corners of a block, it may be tempting to use this for Stitch-in-the-Ditch finishing. If you do, go slowly and carefully because seams are rarely ever straight.

Boundary to Trim - In this example a background fill pattern will be used. The boundary around the basket pattern can be converted to a trim, which prevents the background from stitching inside the block.



It is not uncommon for small fragments to show after an area is trimmed.

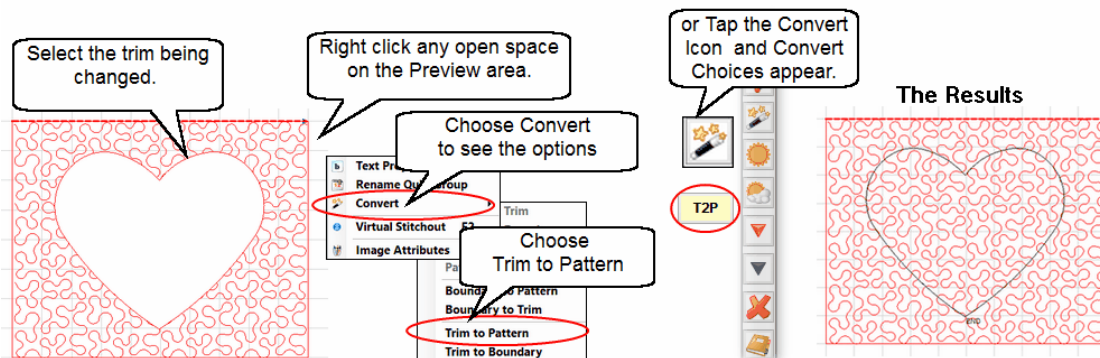


Some of them will not be stitched out because they are so small. Others can be removed using the [Draw Trim](#)¹⁵⁴ feature.

3.5.1.14 ConvertTrim

Convert Trim allows a trim boundary to be changed to a new function.

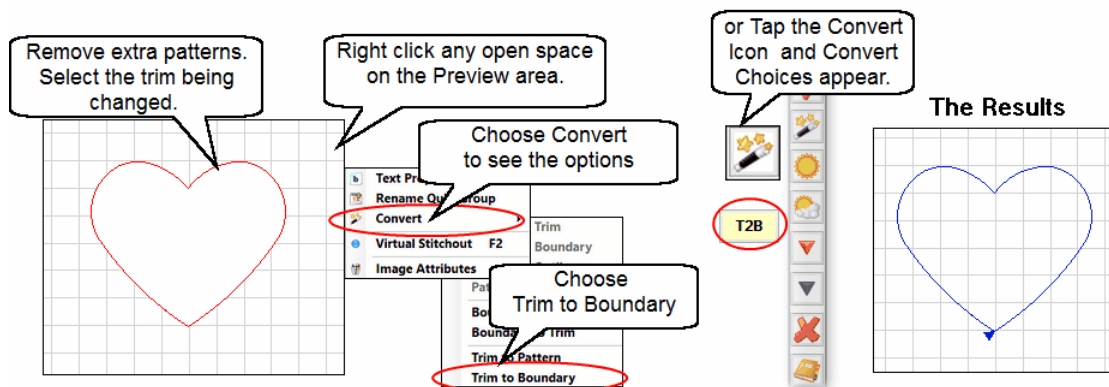
Trim to Pattern - This choice was designed for people who choose to trim away some part of a pattern, and then go back and outline stitch the trimmed boundary. This hides the tie-off stitches that are sometime visible to the discerning eye. The result is a nice, clean outline.



In this example, the meander pattern has been stitched up to the trimmed edge of the heart applique. There will be tieoff knots along the trim boundary. One easy way to hide them is to do an outline stitch along the trim boundary.

1. Select the Trim boundary.
2. Right click any open space on the Preview area.
3. Choose Convert, Trim to Pattern.
4. Stitch. The new pattern will stitch along the trim boundary.

Trim to Boundary - This choice was designed for allowing a Fill design to be used inside the trim. Fill requires boundaries, so the ability to convert a trim to a boundary eliminates the need to re-trace the shape of the area.



1. Remove other patterns and boundaries if needed.
 2. Select the Trim boundary.
 3. Right click the open space outside of the trim, click Convert.
 4. Choose Trim to Boundary.
- Now, the boundary is ready to be filled with a background pattern.

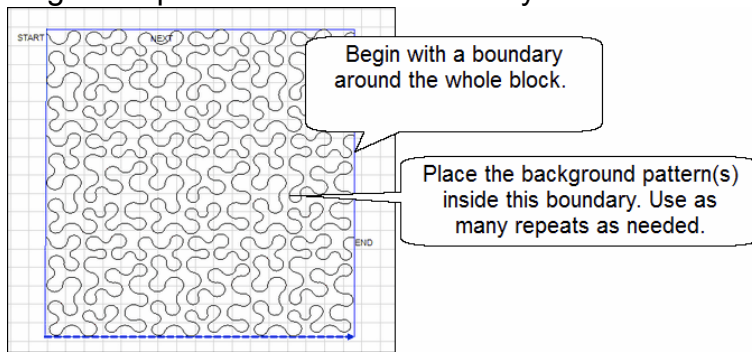
3.5.1.15 Trim Pattern

Trim Pattern - is a feature that allows a pattern to avoid stitching on a particular section, which is defined by a trim boundary. The trim boundary can be created using the sewing head (as explained here) or created on the computer screen in the Preview area, using the mouse or touchscreen capabilities (described in the [Draw - Trim](#)^[151] section).

Trimmed patterns appear to have had parts removed. This is a temporary change to the copy of the pattern(s) on the screen. It does not permanently affect the originals, it just prevents the trimmed portion of the pattern from stitching out.

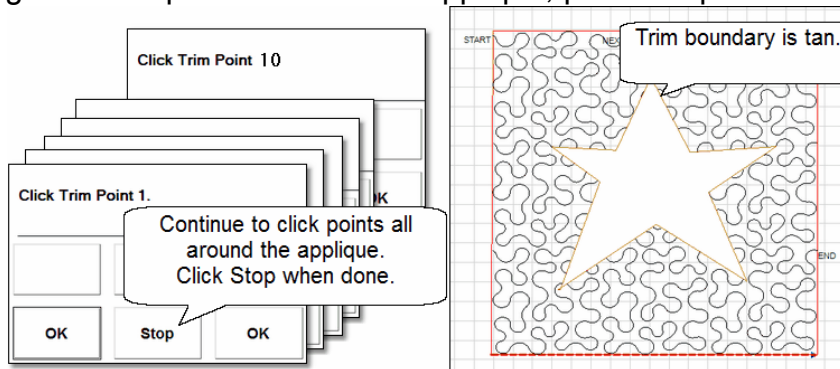
The most common use of the Trim function is for stitching around an applique.

1. First define a boundary around the quilt block that contains the applique.
2. Place background patterns into this boundary. Use as many repeats as needed.



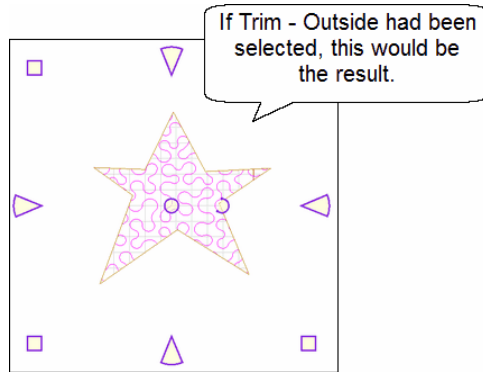
3. Choose Trim Inside

4. Begin to click points around the applique, press Stop when done.



CS will hide everything inside the trim boundary, leaving the filler pattern in the background. Zoom in closely and look for any unnecessary pattern fragments in the background. Some of these may not be stitched because of a default setting in the [Controller Definitions](#)^[232] (Trim Skip Length = 0.5). The larger segments are easily removed with the mouse by using the [Draw/Trim](#)^[151] method, which allows additional trimming of the pattern in the Preview Area.

Trim-Outside is another option for a trim boundary. It will remove all pattern images outside of the trim boundary. Consequently, there can only be one trim-outside per quilt group. There is no limit of trim-inside boundaries for a quilt group.



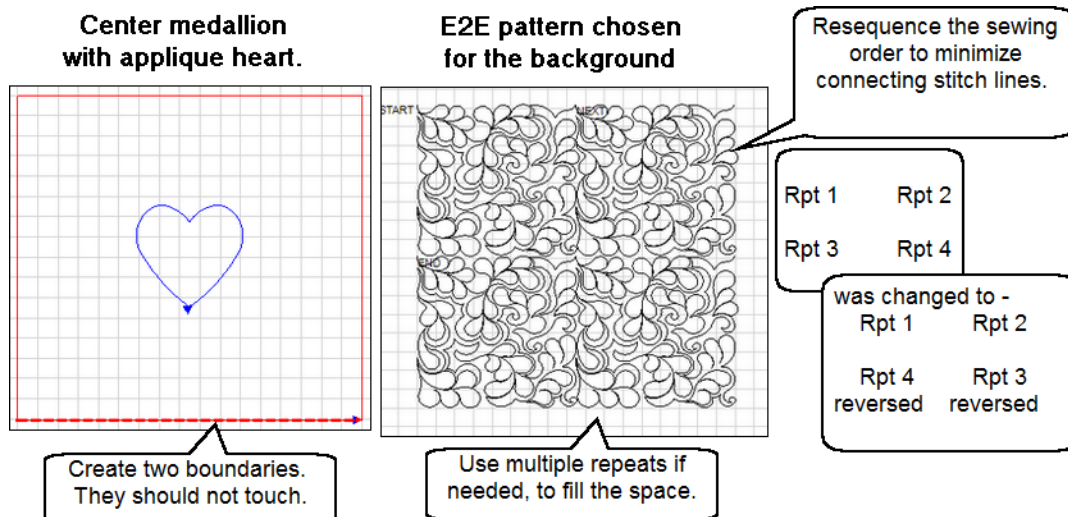
Tip: If tieoff stitches are being used, make them tiny and use the competitive Tieoffs. For people who prefer to hand tie knots and bury threads, change the Controller Definition form to uncheck 'tieoffs', and check 'Bobbin Stitch' and 'Stop at Jump Stitch'. Now CS will stop and you can leave longer thread tails to hand tie and bury.

3.5.1.16 Fill Pattern

Fill - is a special feature that uses 1 or more repeats of a pattern and 1 or more boundaries to create a new pattern that stitches a background filler. It will stitch the background patterns without stitching beyond the defined boundaries. The sample steps below refer to an applique, but it can be used with any part of the quilt that should not be stitched on.

Fill Inside is very useful for stitching a background design behind an applique. There is one boundary along the block perimeter, and one boundary around the applique. The background pattern can have 1 or more repeats as needed to fill the block.

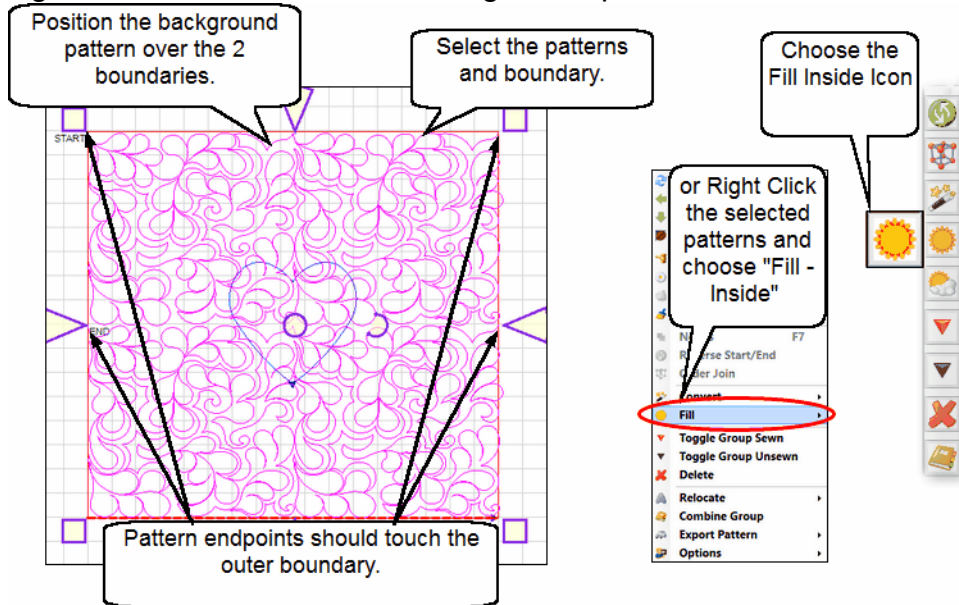
The patterns are selected and modified to provide a customized fit for that block and applique, without any jump stitches and/or tie-off stitches. Instead, the pattern follows the boundaries, stitching along that path until it reaches the next sequential piece of the background pattern.



To begin,

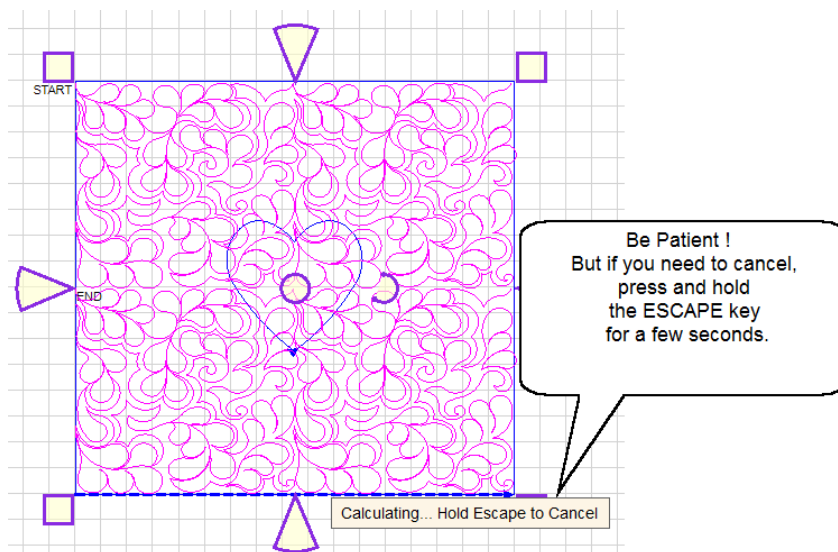
1. Define a boundary around the quilt block.
2. Define a boundary around the applique.
3. Choose a background pattern and resize it to fit the block.

Resequence the sewing order if needed. This minimizes the number of extra stitching lines needed, when connecting one repeat to the next.

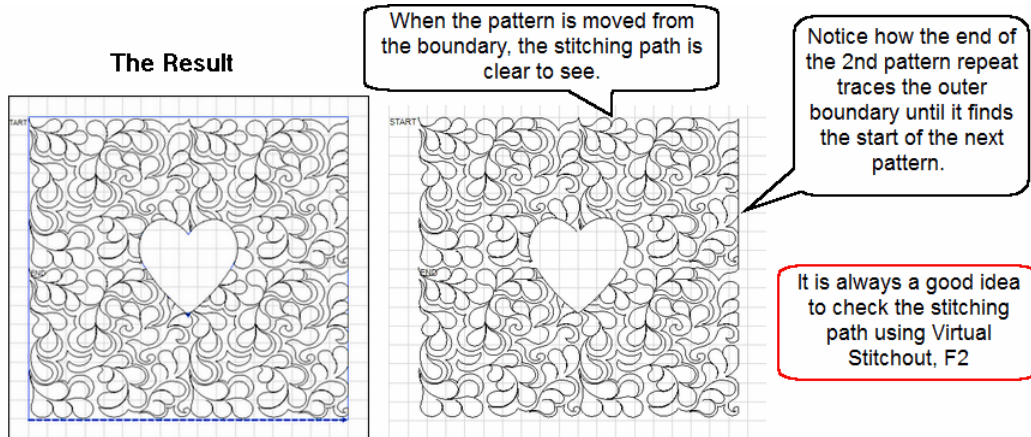


4. Move the background pattern over the block boundaries.
5. Select the background patterns.
6. Choose "Fill - Inside" and Be Patient !

CS is creating a new pattern that stays within the boundaries defined.

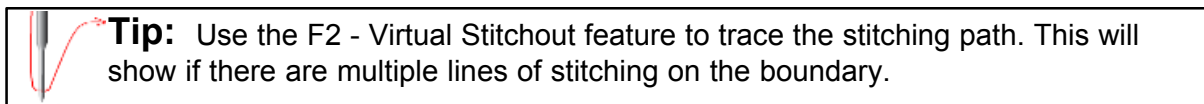


To view the new pattern, move it away from the boundaries as shown.

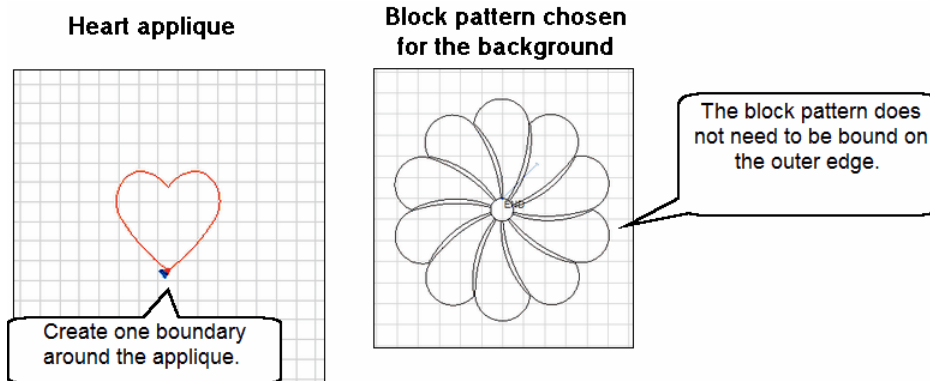


Notice that the excess pattern (outside the block boundary) is gone. Similarly, the pattern that would have stitched over the heart applique is gone. The remaining pattern segments are connected with new segments that follow the boundaries, and connect the segments in the same order they would have been stitched.

It is important to note that this method does not stitch along the entire perimeter of either boundary. Plus, in some cases, there will be multiple lines of stitching on a boundary due to the path of the background filler.

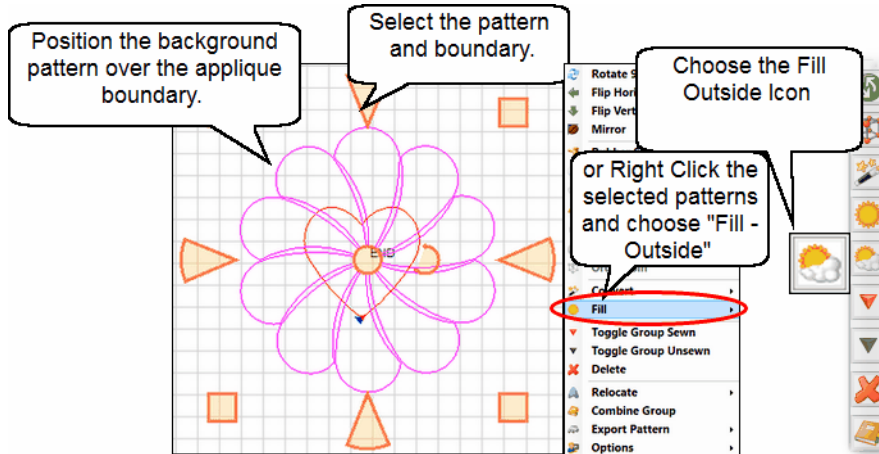


Fill Outside is also useful for stitching a background design behind an applique, if the background design doesn't need to be bound. There is only one boundary needed for the applique.



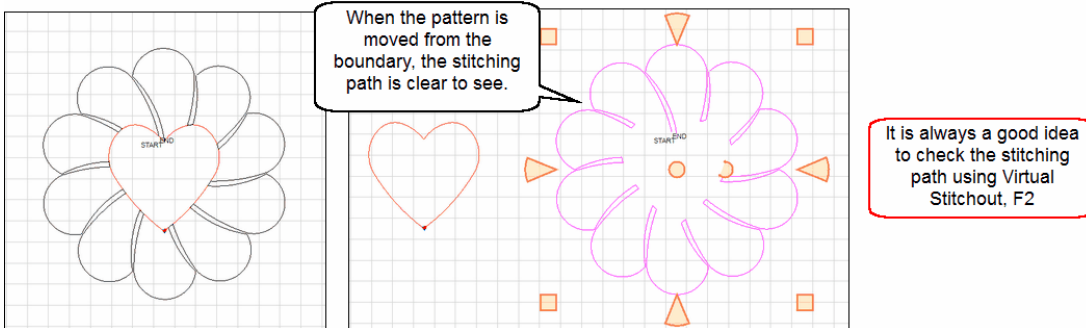
To begin,

1. Define a boundary around the Applique.
2. Choose a complementary pattern and resize it to fit the space.



3. Move the background pattern over the applique boundary.
 4. Choose "Fill - Outside" using either method.
- Be Patient ! CS is creating a new pattern.

The Result



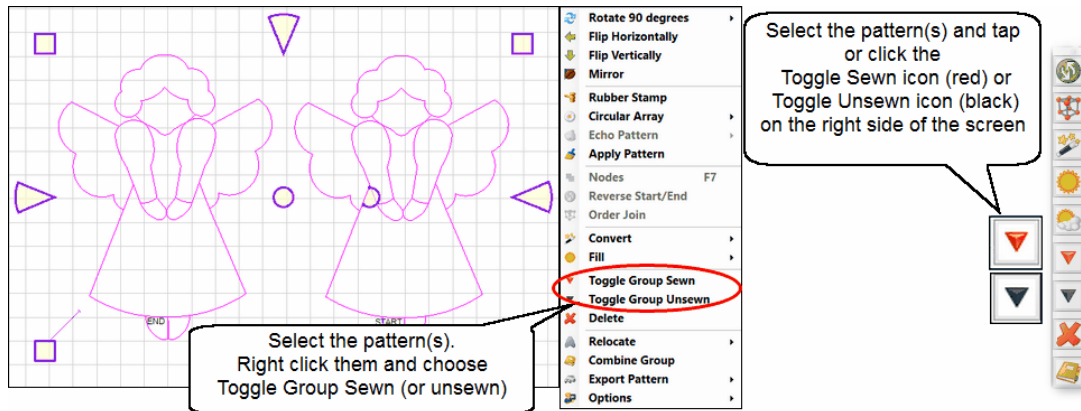
Notice that the pattern parts that would have stitched over the heart applique are gone. The remaining pattern parts are connected with new segments that follow the applique boundary, and connect the segments in the same order they would have been stitched.

Tip: Once a fill pattern has been created, it can not be modified using the blue Arc Nodes (Node Mode F7).

3.5.1.17 Toggle Sewn or Unsewn

Toggle Pattern Sewn (or Toggle Group Sewn) means it won't stitch out.

Toggle Pattern Unsewn (or Toggle Group Unsewn) means it will.



- * Select the pattern(s)
- * Right click them.
- * Choose 'Toggle Pattern Sewn (or Unsewn) for an individual pattern.
- * Choose 'Toggle Group Sewn (or Unsewn) to a group.

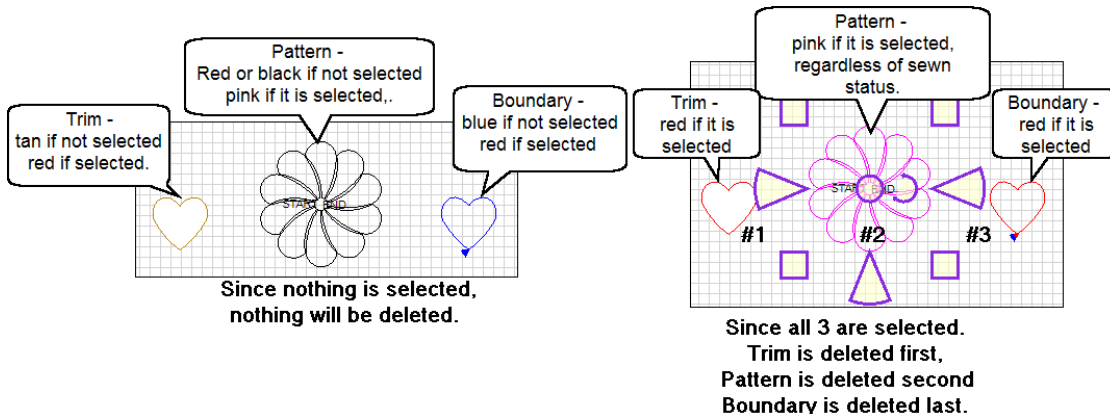
When a selected pattern is changed using "Toggle Pattern Sewn", it does not look like anything happened until you deselect the pattern by clicking anywhere else in the preview area. Then, the pattern color is red indicating it has been sewn (versus black which is unsewn).

TIP: Sometimes the last pattern sewn will appear red, but CS wants to stitch it again. This happens when the 'Stop' button was pressed instead of 'OK' after the pattern was stitched the first time. To fix this, click the pattern, then right click it and choose 'Toggle Pattern Sewn'.

3.5.1.18 Delete

Delete function seems obvious, but there is a hierarchy regarding which objects will be deleted, and in what order, which is:

1. Selected Trims (sometimes called trim boundaries).
2. Selected Patterns.
3. Selected Boundaries.



It is important to remember:

- Only 1 boundary can be selected at one time (it will be red). All other boundaries are not selected and will be blue.
- Only 1 trim can be selected at one time (it will be red and nothing will be visible on the inside). All other trims are not selected and will be tan.
- One or many patterns can be selected at one time (they will be pink and have anchor handles around them). All other patterns will be black (if unsewn) or red (if sewn).
- Nothing will be deleted if nothing is selected.
- The delete command will delete selected items in order.

3.5.1.19 Relocate

Relocate - means correcting the alignment between pattern(s) shown on the screen preview area and where it will be stitched on the quilt. Sometimes it is necessary to realign patterns, especially when recovering from a problem.

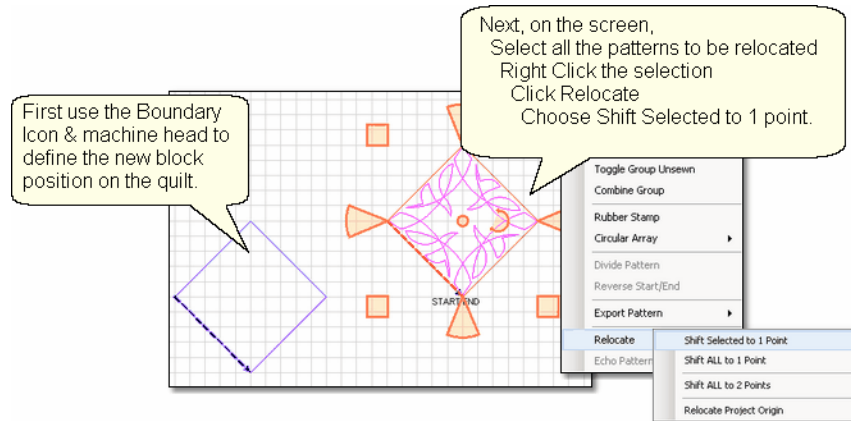
There are four ways to relocate a pattern and all of them use 1 or 2 Known Points. These are points that can be precisely identified on the screen (using the mouse) and on the quilt (using the machine head).

Relocate has no impact on any of the sewing functions except on Edge-to-Edge Automatic (using the E2E icon) which needs to control all the patterns and the positioning. When the Relocate feature is chosen for an Edge-to-Edge (using the E2E icon), a dialog box appears with a warning explaining that the E2E process will be modified from E2E automatic to E2E Repeat Patterns. This is not a problem - in fact Relocate works very well for E2E Repeat Patterns.

When using any of the Relocate options, it is always a good idea to use the crosshair or the boundary feature to confirm that the patterns moved as expected. If they did not, you can use the relocate tool again.

3.5.1.19.1 Shift Selected

Shift Selected to 1 point - will relocate the selected pattern(s) only. It uses one point called the Known Point. In our example, the block on the right shows the original placement of the pattern. The block on the left shows the new placement. Here are the steps to realign a pattern to the new block placement.



Step 1 - Mark the boundary of the new block location.

Step 2 - Select the patterns to be relocated.

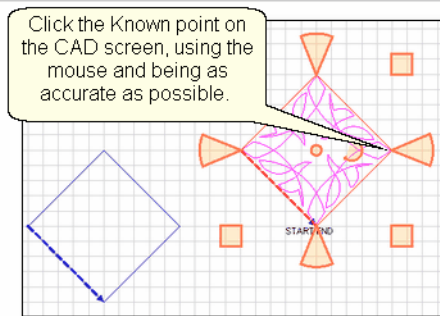
Step 3 - Right click to see the Options.

Step 4 - Click on 'Relocate'

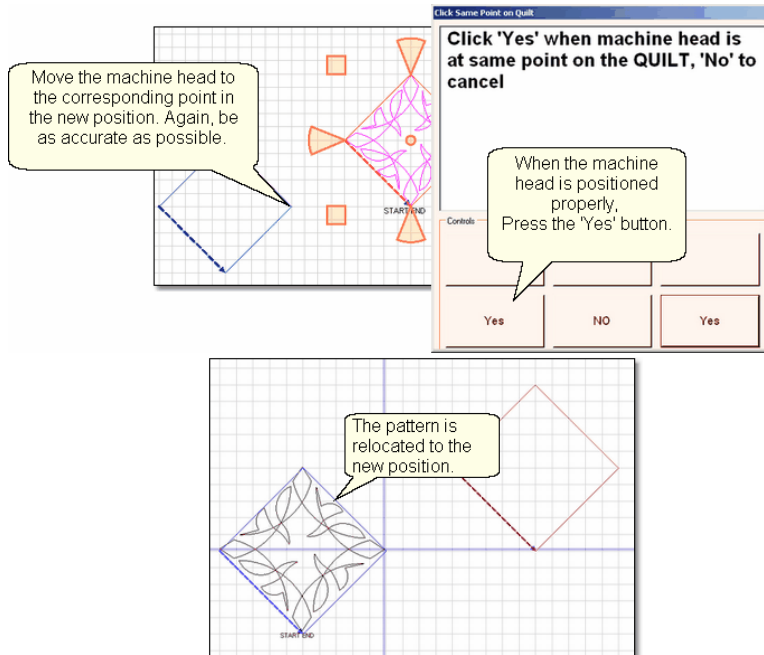
Step 5 - Choose 'Shift Selected to 1 Point'.

CS will prompt for the "Known point on CAD" screen, using the mouse. Zoom in if needed so the point is as accurate as possible.

Click Known point on CAD



CS will now ask you to move the machine head to the new 'Known' point on the quilt. Again, be as accurate as possible. Press the 'Yes' button on the keypad when the machine head is positioned precisely.



It is always a good idea to verify the accuracy of new alignment. This can be done easily by turning on the crosshairs ([View Command](#)^[30]) and moving the machine head to various points, checking the pattern alignment. Remember, 'Shift Selected' only realigns the selected patterns.

3.5.1.19.2 Shift All to 1 point

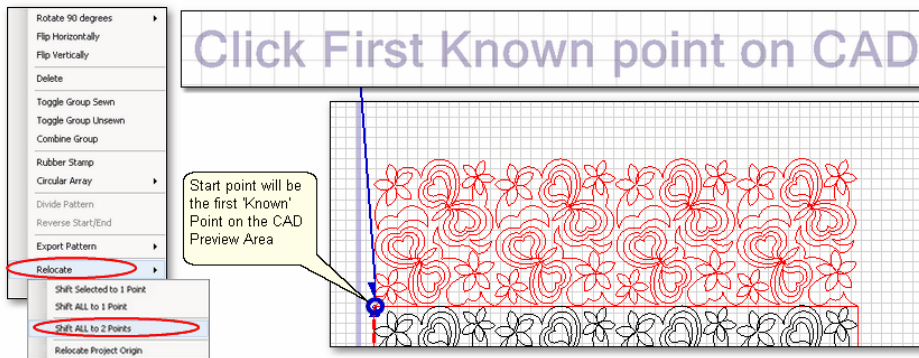
Shift All to 1 point - will relocate all of the patterns in the quilt group using one Known point. It is virtually identical to the process used above, except it impacts more than the selected patterns. When you choose to Shift All to 1 Point, all the patterns in the current quilt group will be realigned. Only the current quilt group is changed - other quilt groups are excluded from the realignment.

3.5.1.19.3 Shift All to 2 points

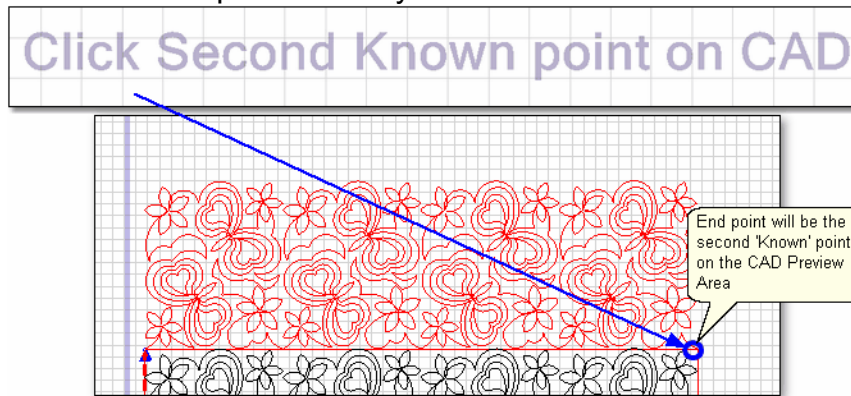
Shift All to 2 points - will relocate all of the patterns in the quilt group using two Control Points. This will affect the location and squaring of the quilt, but not the size of the patterns. This method can be used when the quilt and quilting is not square, meaning the quilting needs to slope up or down. By using Shift All to 2 Points, (on opposite sides of the quilt) CS will calculate the Square Up angle, and adjust the pattern automatically.

In the following example, the first row of the quilt has been quilted already. It is a good idea to choose known (control) points from the last row completed. In this example, the two known points will be the start and end of the last row completed because they are accessible and identifiable on both the screen and the quilt top.

- Right click on any pattern(s) to begin. The patterns selected do not need to be the same ones that contain the First or Second Known Points.

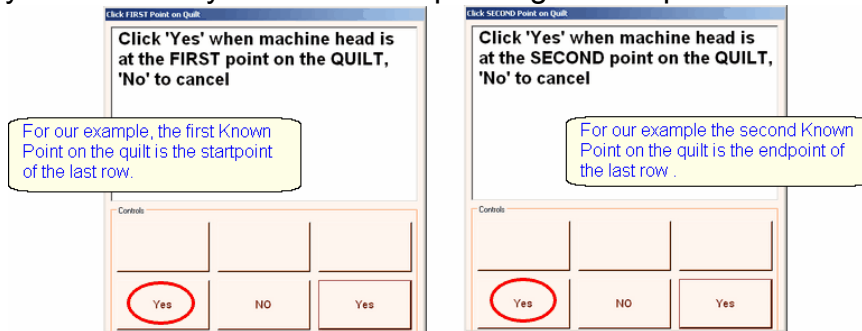


- Click on "Relocate" and Choose "Shift All to 2 Points".
- A dialog box appears, giving instructions.
 - Use the mouse to click the first Known point on the CAD screen. Because our example is using the start and end points of the pattern, [Endpoint snaps](#)^[190] can help to select these points exactly.



- Use the mouse to click the second Known point on the CAD screen.

Now you will identify the two corresponding control points on the quilt.



- Follow the instructions in the dialog box:
 - Move the machine head to the first Known point and press 'Yes'.
(in our example this is the start of the last row quilted).
- Follow the instructions in the next dialog box:
 - Move the machine head to the second Known point and press 'Yes'.
(in our example this is the end of the last row quilted)

If the 2 Known Points are not perfectly horizontal, the angle of rotation between the two points is calculated automatically. This is good for E2E quilts that aren't straight, but it means clicking accuracy is critical!

It is always a good idea to check the positioning by using the machine crosshairs. This can be done easily by turning on the crosshairs (View Command) and moving the machine head to various points on the quilt top, checking the pattern alignment on the screen.

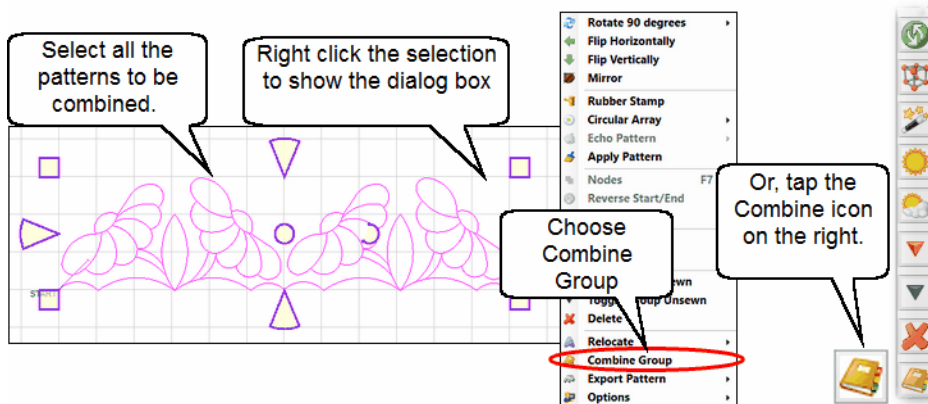
Another method is to create a reference boundary around the bottom edge of the last row stitched. Check this boundary on the screen, making sure it aligns with the patterns shown on the screen. Adjust if needed before stitching.

3.5.1.19.4 Relocate Project Origin

Relocate Project Origin - is similar to shifting pattern(s) but it shifts the [Point Of Origin](#)⁶⁷ to realign the entire project. This affects all patterns on all quilt groups for the entire project. It uses the starting stitch of one pattern and all the other patterns and quilt groups are realigned automatically.

3.5.1.20 Combine Patterns

Combine Pattern - will group together all the selected patterns, so they can be used as a single pattern for the duration of the project. If the patterns are positioned to sew in one continuous line (like repeated patterns in a border) there will not be a 'jump stitch' between the selected patterns. This is very handy for sashings and border areas. If the patterns are not continuous, there will be tieoffs (or a prompt for the bobbin pull-up sequence) at each jump stitch.



- * Select the patterns, in stitching sequence.
- * Right click the group.
- * Choose 'Combine Group'.

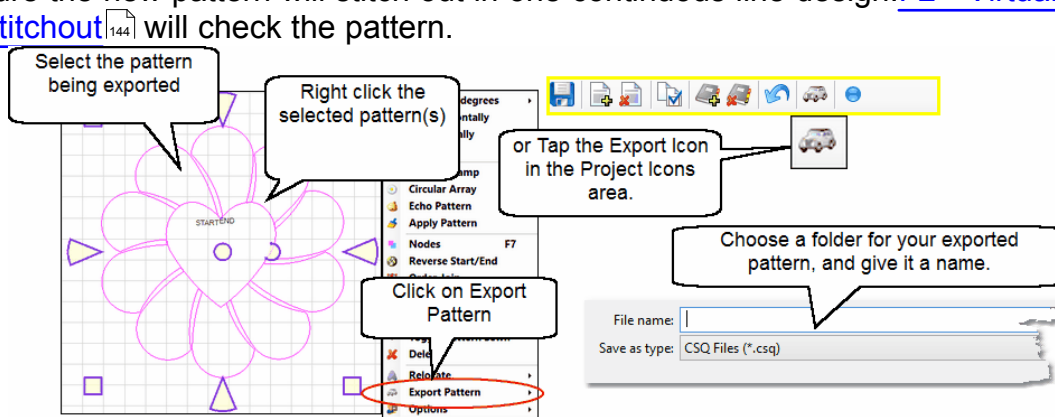
Caution: Once patterns are combined, they can not be 'uncombined' in a way that restores the individual patterns. They can be divided into pattern segments, but not back into the original patterns. The 'Undo' command (Ctrl Z) is the only way to 'uncombine'.

TIP: Patterns will stitch out in the order they were selected, so be careful to select patterns in the proper stitching order before grouping them. Use F2 - Virtual Stitchout to check the order.

3.5.1.21 Export Pattern

Export Pattern - allows a newly created pattern to be exported as a special CS file type that can be used by other CS projects (respecting all copyright laws of course!). Sometimes the new patterns are so customized that they would probably only work on the current project. Other times the new pattern could be used in many quilt projects. When an encrypted pattern is used in a project, all exported patterns will also be encrypted. CS will automatically substitute the .csq file type with .csqx.

Selecting multiple patterns and then exporting them will result in one exported pattern, not multiples. (This does not combine the original patterns, just the exported one). It is always a good idea to check the sewing path before exporting to make sure the new pattern will stitch out in one continuous line design. [F2 - Virtual Stitchout](#) will check the pattern.



Step 1 - Select the pattern(s).

Step 2 - Right click on the selection to show options.

Step 3 - Click on Export Pattern

Step 4 - Choose a file type:

To CSQ - this is a file format only CS can use.

.csq is the actual file type used for non encrypted patterns.

.csqx is the substituted file type used for encrypted patterns.

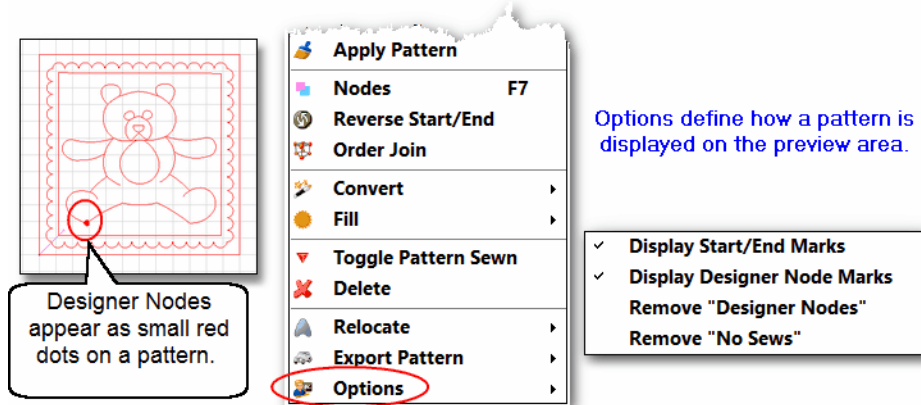
To DXF - this is a file format that some drawing programs can use but only works for non-encrypted patterns. In most situations, .dxf files must be modified before they can be reopened in CS.

Tip: Use the .csq or .csqx format whenever possible (instead of .dxf) because the .csq format is more efficient and the stitched designs have smoother curves.

When exporting patterns, it is helpful to give the pattern a descriptive name and to save it if it may be useful in the future. Derivative patterns should be named & saved in the same folders as the originals, so they are easy to find.

3.5.1.22 Options

Options - refer to how patterns are displayed or stitched. There are certain choices that a pattern designer can use that affect how the pattern is displayed on the screen, or how it is stitched out. These choices can make it easy to use the pattern as it was originally designed, but might not be helpful in derivative patterns. So, CS allows the quilter to choose which options to keep/remove as needed.



Using [Node Mode](#)¹¹⁶, Designers can 'Mark' certain areas of their patterns, which helps them visually determine how the pattern should stitch.

* Display Start/End Marks means the word 'Start' appears at the beginning of the first pattern to be stitched. The word 'End' appears at the end of the last pattern to be stitched.

* Display Designer Node Marks means a red dot will appear on a pattern if the designer has changed any of the settings using a node, included any 'pause' in the stitching sequence. This is often done on patterns where a thread color change would enhance the quilting. Although this is not used very often, it is a useful mark - How else would a quilter know the pattern is going to stop in the middle somewhere?

* Remove "Designer Nodes" means the pattern will not stop so the thread color can be changed (or any other reason). The red dot disappears from the image of the pattern on the screen, and the stitching continues past the original pause position.

* Remove "No Sew" lines means CS will ignore these lines. In a previous software system, designers would include a 'No Sew' frame around a pattern so it would fit the block better. CS is so flexible now, these are no longer needed.

3.5.1.23 Right Click Preview Area

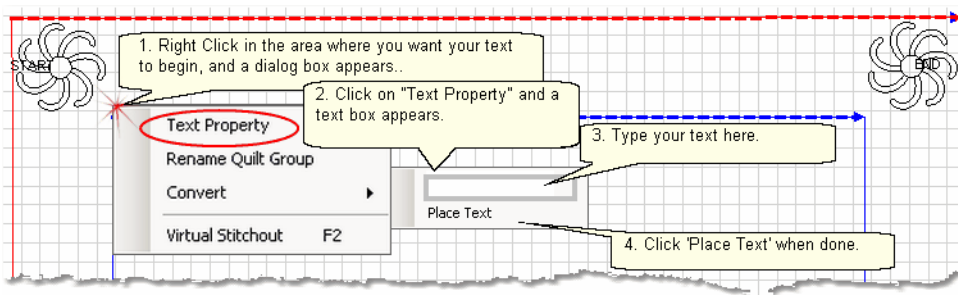
Right Clicking an open space on the Preview Area will present even more design choices.

3.5.1.23.1 Text Property

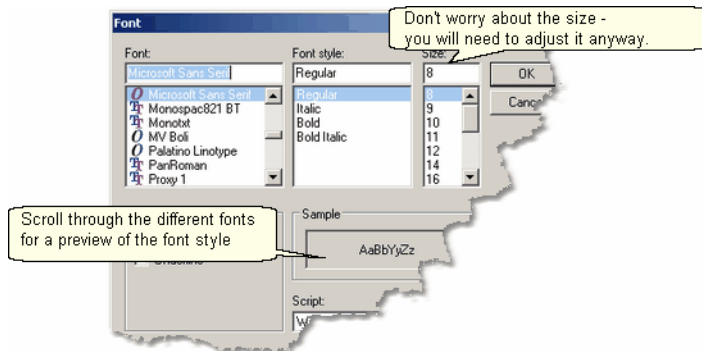
Text Patterns can be made using standard Windows fonts. Text patterns let you personalize your quilts with logos, dates, names or greetings. The text can be typed, placed, sized and stitched. This feature is done in the preview area in an open space, not on an existing pattern.

Steps to follow:

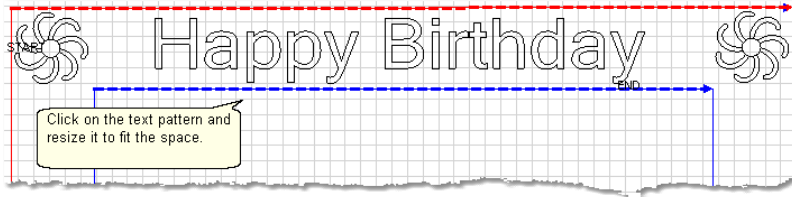
1. Right Click in an open area of the preview area. It is a good idea to have [defined a reference boundary](#) so you can size the text to fit the space on the quilt. In our example, we are using the top border.
2. Click on 'Text Property' in the dialog box that appears.
3. Click in the text box and type your message. The text box looks small, but will handle long phrases. CS will treat each phrase as a pattern. If your phrase needs two (or more) lines, you could create one pattern and divide it, but it is easier to create 2 (or more) separate text patterns.



4. Click on 'Place Text' when done, and the Font dialog box appears.



5. Choose the font style you like. By scrolling through the choices, you can see what the style looks like in the 'Sample' box. For variations, preview the font using italics, bold and bold italics styles. Choose any font size because you will need to modify it to fit your boundary anyway.
6. Click 'OK' when ready and the pattern is moved into the preview area of the screen. Resize as needed.



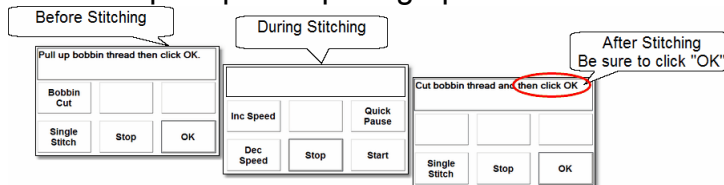
7. [Save the Project.](#)



8. Click on **Start_Quilting**



and CS moves the sewing head to the start of the pattern and prompts for pulling up the bobbin thread.

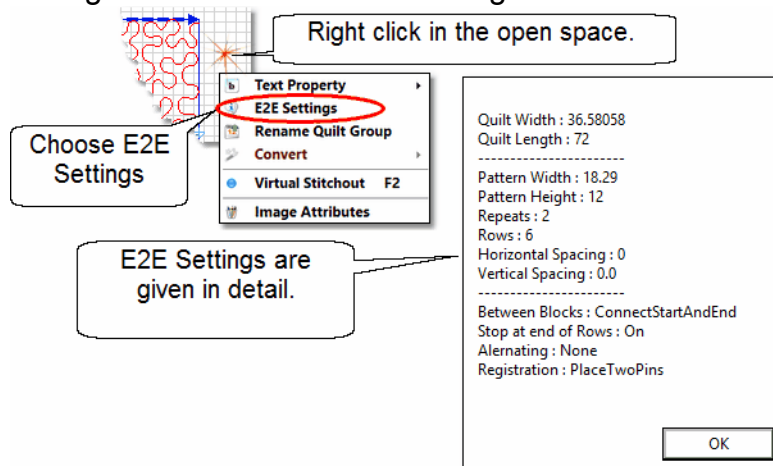


At the end of the quilting sequence, you will be prompted to pull up the bobbin thread and click OK. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

When the patterns are all stitched, the screen will display them with red lines instead of black. This is a visual reminder that they are tagged as having been sewn already.

3.5.1.23.2 E2E Settings

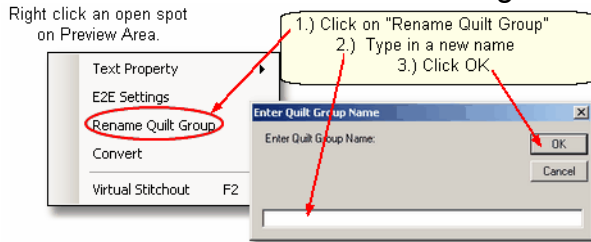
E2E Settings can be recalled during your project, if the E2E icon has been used. When setting up an Edge-to-edge quilting pattern, CS takes care of most of the measurements and adjustments automatically, which is why this process is sometimes called "E2E Automatic". The E2E Process Details dialog box contains all these details initially but often the dialog box is closed. If you ever need to review the E2E Settings, it is easy to do. Just right click on an empty space and choose E2E Settings. You can use these settings to recreate an E2E if needed.



There are times when the E2E Automatic process is converted to E2E Repeat. Once this happens, it is too late to recall the original settings.

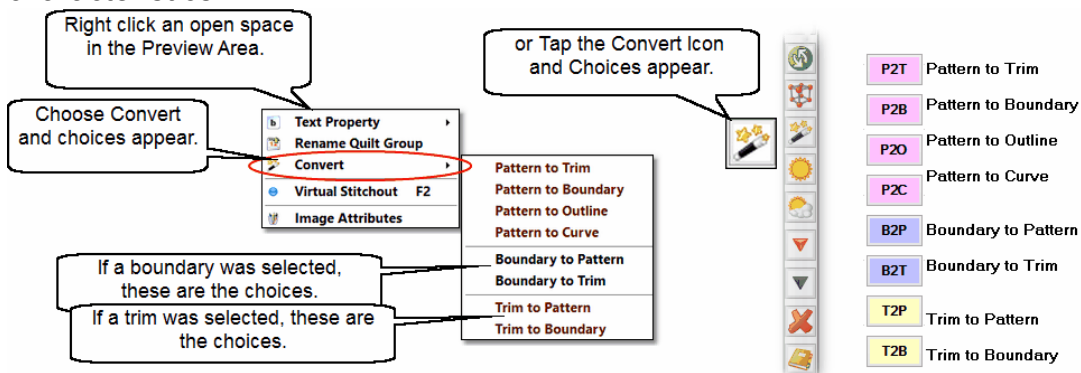
3.5.1.23.3 Rename Quilt Group

Renaming Quilt Groups is easy. Just right click on an empty space in the Preview area for that group, and one of the choices is 'Rename Quilt Group'. Click anywhere on those words, and a dialog box appears where you can type the new name. The names need to be unique and it is useful if they are descriptive. Click OK when done and the name will change.



3.5.1.23.4 Convert (boundary)

Convert is a powerful feature that changes the characteristics of objects such as patterns, boundaries and trims. When right Clicking an open space in the Preview area, the selected boundaries and trims can be converted to objects with different characteristics.



Each iteration of 'Convert' command was explained previously in this text. Click the link to see and explanation of each choice.

[Converting Patterns:](#) ¹²¹

- Pattern to Trim
- Pattern to Boundary
- Pattern to Outline
- Pattern to Curve

[Converting Boundaries:](#) ¹²⁴

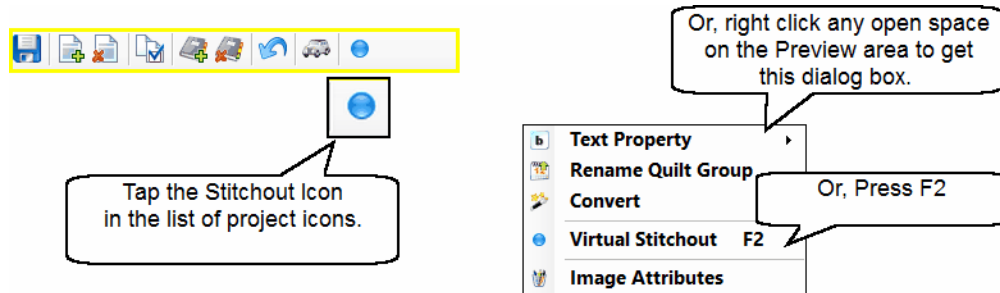
- Boundary to Pattern
- Boundary to Trim

[Converting Trims:](#) ¹²⁶

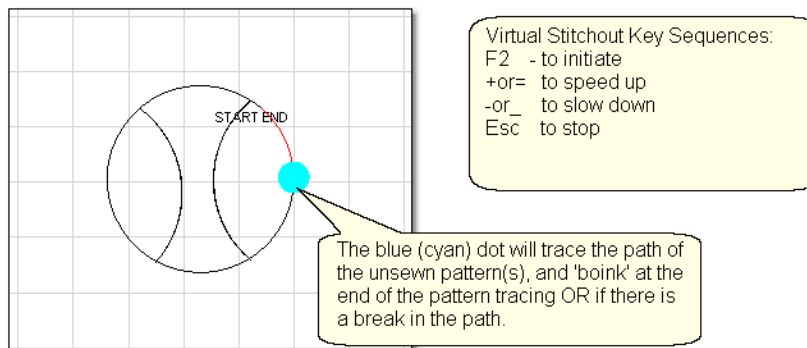
- Trim to Pattern
- Trim to Boundary

3.5.1.23.5 Virtual Stitchout

Virtual Stitchout (F2) - verifies the continuous stitching line of any/all unsewn patterns. The trace begins at the START point, and follows the stitching sequence and direction, through to the END point. No stitching will occur. Begin using any of the methods below.



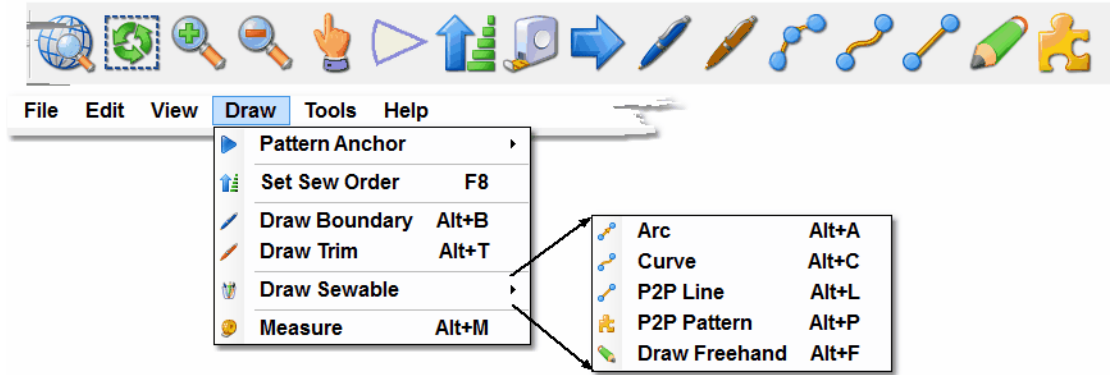
A blue circle will appear, moving along the path, in the same sequence that the pattern or pattern segments would be stitched. If there is a break in the continuous path, the machine will make a 'boink' sound, but continue to trace the path to the end. Watch the screen during this process to see where the breaks occur. If needed, use F8 [-Set Sew Order](#)^[146] or [Order Join](#)^[120] to change stitching direction and sequence.



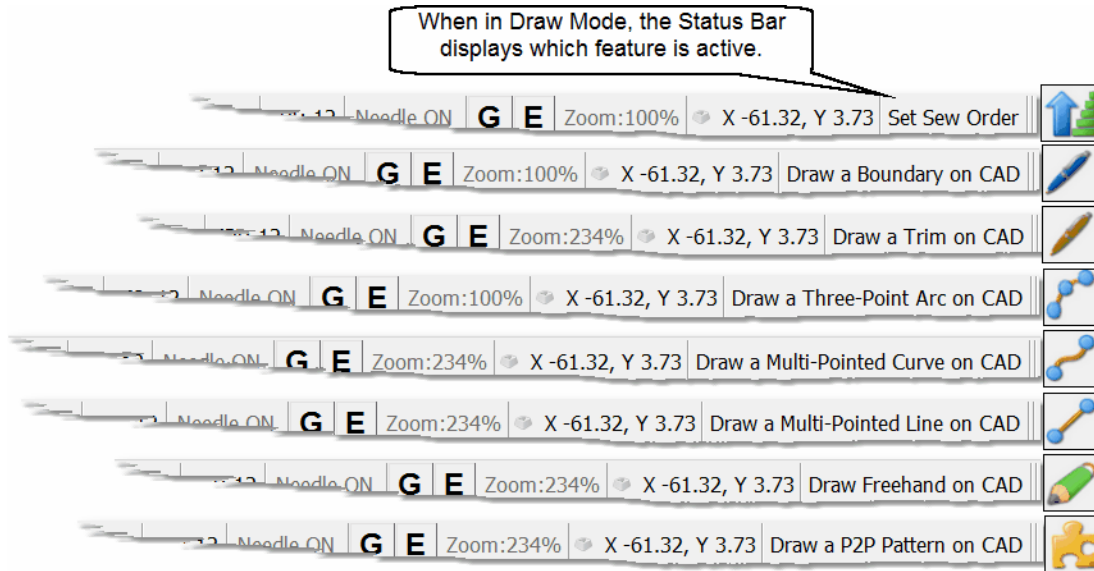
- * A 'boink' sound happens at the end of the pattern, which is not a cause for concern.
- * To stop the Virtual Stitchout process, press the Esc - escape key.
- * To change the speed of this process, press the + or = key to increase the speed and the - or _ key to decrease it. A 'boink' sound happens when maximum speed has been reached. *Note: In normal typing, the + sign requires using the shift key, and the = sign does not. For our purposes, either key sequence will work. This applies to - and _ also.*
- * Only patterns that are 'unsewn' will be checked. So, if there are many patterns on the CAD/Preview Area, but only a few need to be checked, toggle the other patterns as sewn first. Then start the Virtual Stitchout, and the unsewn pattern(s) will be checked. Remember to change back the sewn status if needed.
- * Designer Pauses and No-Sew Lines are not considered breaks in the sewing path.

3.5.2 Draw Options

Draw Options - A remarkable feature of CS is the ability to draw patterns from scratch. Each Draw feature is done on screen.

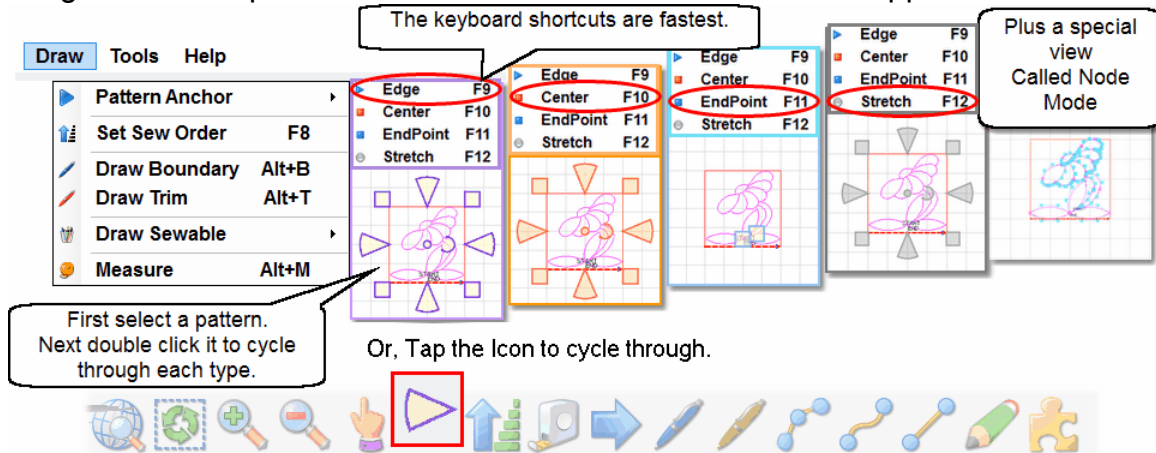


Each of these features begins a "Draw Mode", which stays active until it is terminated. The Status Bar at the bottom of the screen will include a message, telling which of the Draw commands is active. Press Escape key to exit.



3.5.2.1 Pattern Anchor

Pattern Anchor - is the first option in the Draw Command menu. This was described in detail in a previous section on [adjusting patterns](#)⁸⁸. As a refresher, the pattern anchor determines how it will behave when it is being modified using the re-sizing handles. A pattern must be selected for the handles to appear.



The Pattern Anchor choices are:

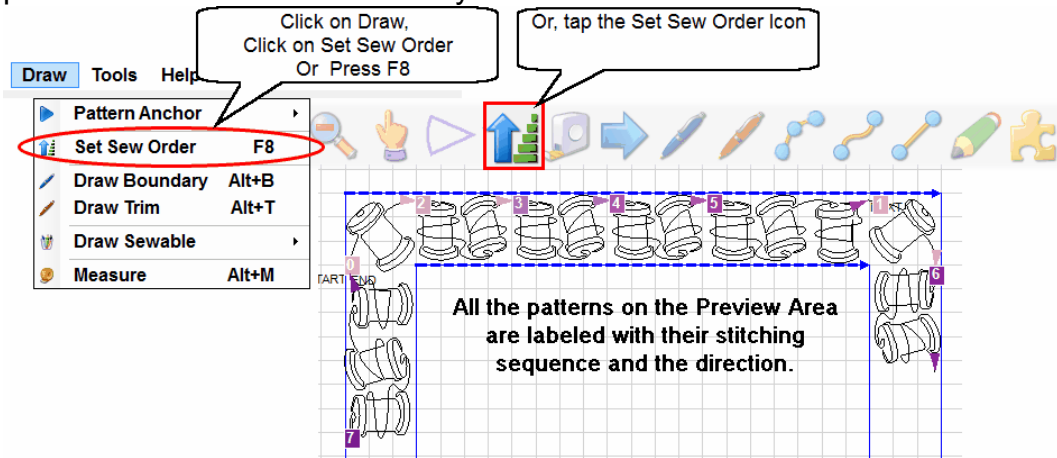
- * Edge (F9) The re-sizing handles are purple. When one handle is moved, the opposite edge (or corner) remains fixed or anchored.
- * Center (F10) The re-sizing handles are orange. When any of the handles are moved, the center remains anchored.
- * Endpoint (F11) The re-sizing handles are 2 blue squares, at just the beginning and end of the pattern. When one of the two handles is moved, the other is anchored. Endpoint anchors do not apply to block patterns.
- * Stretch (F12) The re-sizing handles are gray. When any handle is moved, the opposite handle is anchored in place. The Stretch Pattern Anchor is special because it allows portions of the pattern to be stretched. This essentially warps the pattern, and sometimes that is needed when seam lines are not accurate.
- * When all the little nodes appear, the pattern is in [node mode](#)¹¹⁶ and can be manipulated one node at a time. This takes longer, but allows the pattern to be adjusted to fit the space perfectly. The nodes are pink (endpoint nodes) and blue (arc nodes).

If working with a touch screen, the  Cycle Pattern Anchor Type Icon will cycle through each anchor type in order.

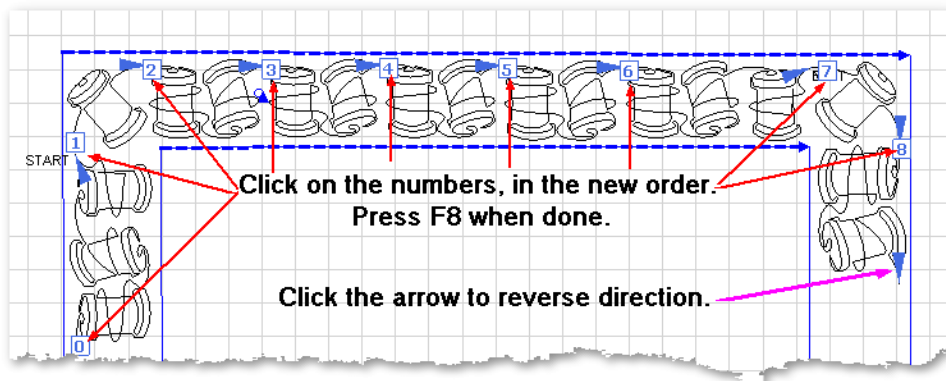
3.5.2.2 Set Sew Order

Set Sew Order - By default, CS will stitch patterns in the same order that they are moved on to the preview area. The Set Sew Order feature is used to check and change the pattern stitching sequence. This feature also allows the pattern stitching direction to be checked (and changed if needed). The following example shows how corner patterns will stitch first (if they are placed first) and repeat patterns follow.

This can cause unnecessary tieoffs, so resequencing the sew order allows repeat patterns to be sewn continuously.

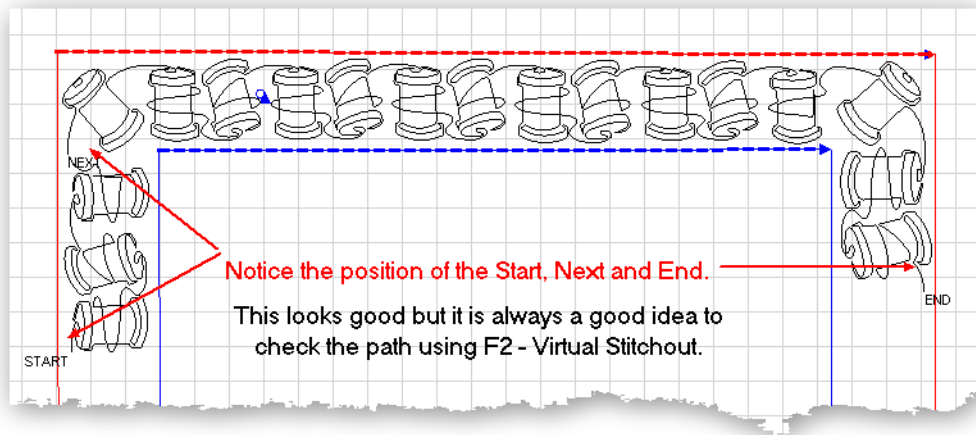


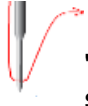
When this mode is initiated, all patterns on the Preview Area are labeled, regardless of their sewing status (sewn or unsewn). All the patterns will have numbered boxes at the beginning of each pattern that shows its stitching sequence number. They also have an arrow at the end of the pattern showing the stitching direction. The color of the pattern's number and directional arrow match, so it is clear which arrow belongs to which pattern.



To change the stitching sequence, start clicking on the number boxes in the order you want them to stitch. (The first number is 0, not 1.) The number box background color changes temporarily to white and the related arrow turns navy blue to show which patterns have already been changed.

When done, Right click any pattern or Press F8 or Press the Set Sew Order icon and the new order is saved. Or, press Esc at any time to cancel this operation.

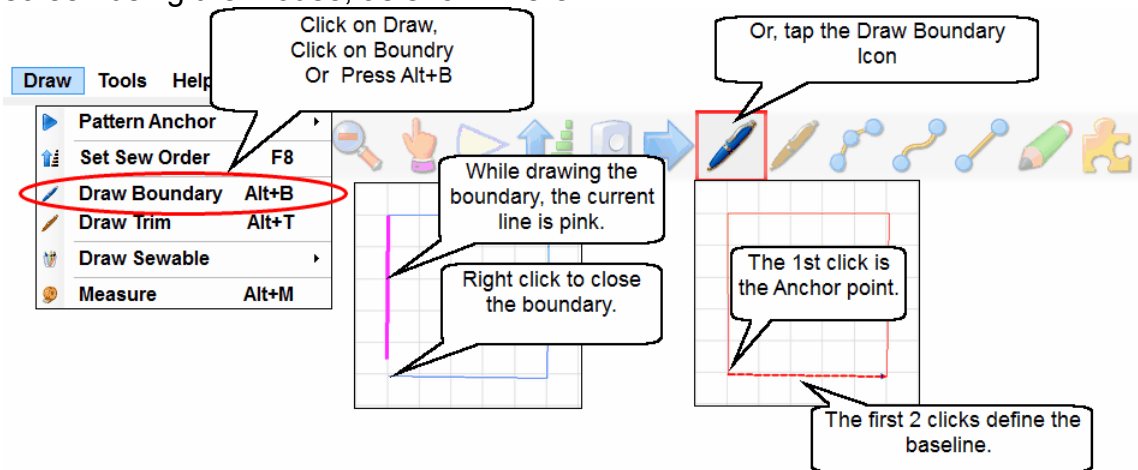


 **TIP:** Patterns (that have not stitched out yet) are labeled "Start", "Next" and "End". These labels change as needed while the patterns are stitching.

When done with any pattern manipulation, it is a good idea to double check both the sewing order and the stitching direction. Then quilt!

3.5.2.3 Draw Boundary

Draw Boundary command uses the mouse and screen to draw a boundary created for general reference and for receiving and resizing patterns. As explained earlier, [boundaries](#)^[85] are often defined using the sewing head because that is the best way to create a true image of the block. Boundaries can also be drawn on the screen using the mouse, as shown here.

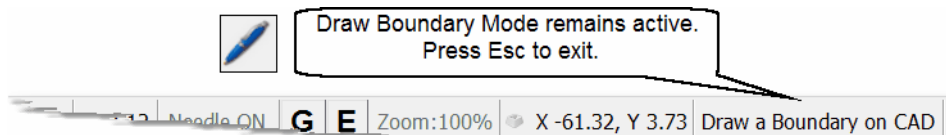


* Start clicking boundary points on the preview area of the screen. CS assumes you know the process and does not display instructions on the screen. Just like boundaries created using the [Boundary Icon](#)^[38], the first point is the anchor, the first 2 points define the baseline.

- * Click as many points as needed to define the space.
- * Press Escape to cancel the current boundary (and exit boundary mode) if needed.
- * Right Click anywhere in the preview area to complete the boundary. CS will join the last click with the first, enclosing the area. The point identified by the Right click is NOT one of the boundary points.

When in Draw Boundary mode, a message appears on the status bar and the cursor changes to a crosshair. CS assumes there will be multiple boundaries, so it stays active until you turn it off. There are several ways to exit from Draw Boundary mode:

- Press the Escape key on the keyboard.
- Press Alt+B on the keyboard.
- Click on the Draw Command, choose the Boundary option in the dialog box.
- Press the Draw Boundary icon again
- Double Right click on the screen.



TIP: If the Icon bar stays 'grayed out', you are probably still in 'Draw Boundary' mode. The Status Bar will confirm this. Press **Alt+B** (or Esc) to return to normal operation.

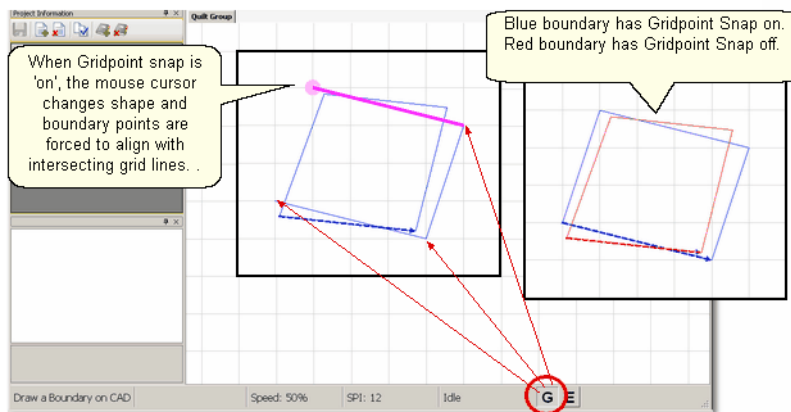
Using Snaps - The term 'snap' is used to describe a feature that forces a click point to a certain alignment. CS offers two different types of snaps; [Gridpoint](#)^[150] and [Endpoint](#)^[150]. These features can be turned on/off by clicking on the "G" or "E" button in the status bar at the bottom of the screen. *They can also be turned on/off by pressing the "G" or "E" letter on the keyboard.* The buttons on the status bar appear depressed when they are 'on'. Click the "G" or "E" button (or pressing the letter) again to turn it off. In the example above, there were no 'snaps' on the click points.

CS makes a snapping sound when the cursor crosses over a place where it could snap to. CS makes a popping sound when the boundary points are actually clicked.

3.5.2.3.1 Gridpoint Snaps

Gridpoint Snaps force a selected pattern, pattern segment or boundary point to align with the background grid.

When defining a boundary using gridpoint snaps, boundary click points are forced to align with the gridpoints on the screen in the preview area (which are the points where two lines in the background grid intersect). To activate the gridpoint snap, click the "G" button in the status bar, or press the "G" key on the keyboard. Do the same to de-activate. A pink dot appears on the screen showing where the closest grid point would be. CS makes a snapping sound as the cursor moves across the screen from one gridpoint to the next. CS makes a popping sound when the point is actually clicked.



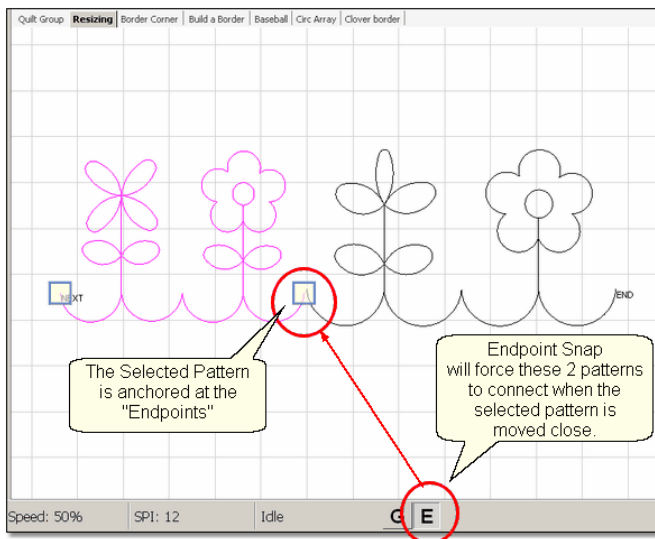
TIP: If the background grid is not already showing, CS turns it on automatically. The size of the grid can be changed by clicking on "Draw" then choosing 'Grid Size'.

3.5.2.3.2 Endpoint Snaps

Endpoint Snaps force a selected pattern or boundary to align with the beginning or ending point of another pattern. To activate the endpoint snap, click the "E" button in the status bar, or press the "E" key on the keyboard. Do the same to de-activate. A pink dot appears on the screen showing where the closest endpoint would be. CS

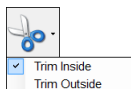
makes a snapping sound as the cursor moves across the screen from one endpoint to the next. CS makes a popping sound when the point is actually clicked.

When using some of the more advanced features to create new patterns, endpoint snaps are very useful, especially when connecting different patterns or pattern segments.



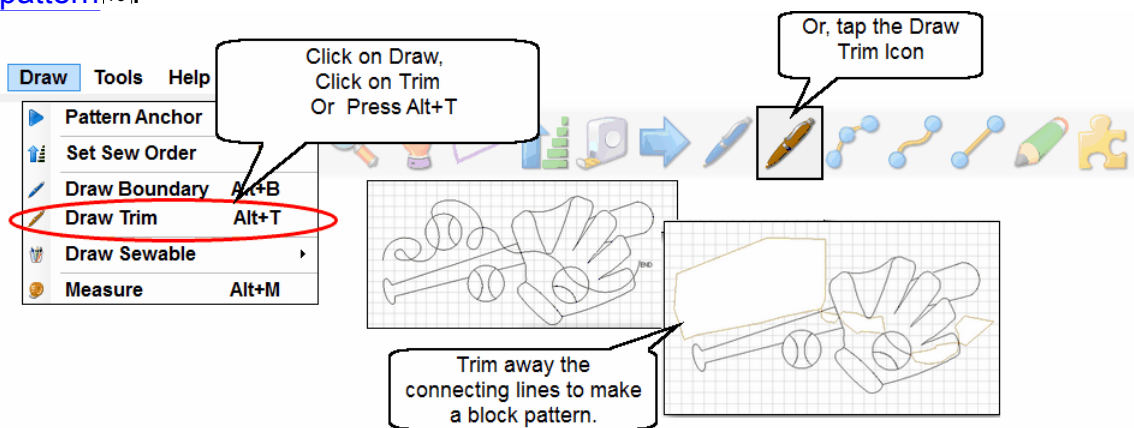
3.5.2.4 Draw Trim

Draw Trim - Trims are a special type of boundary that mark an area on the screen (and on the quilt) where no quilting should happen. It makes the patterns appear to have parts removed. This is a temporary change to the copy of the pattern(s) on the screen. It does not permanently affect the originals, it just prevents the trimmed portion of the pattern from stitching out. Patterns can be trimmed using the touch screen icons or by using the mouse.



First choose which type of trim to use:

The following shows how a [continuous pattern](#)⁷⁶ was trimmed to become a [block pattern](#)⁷⁵.



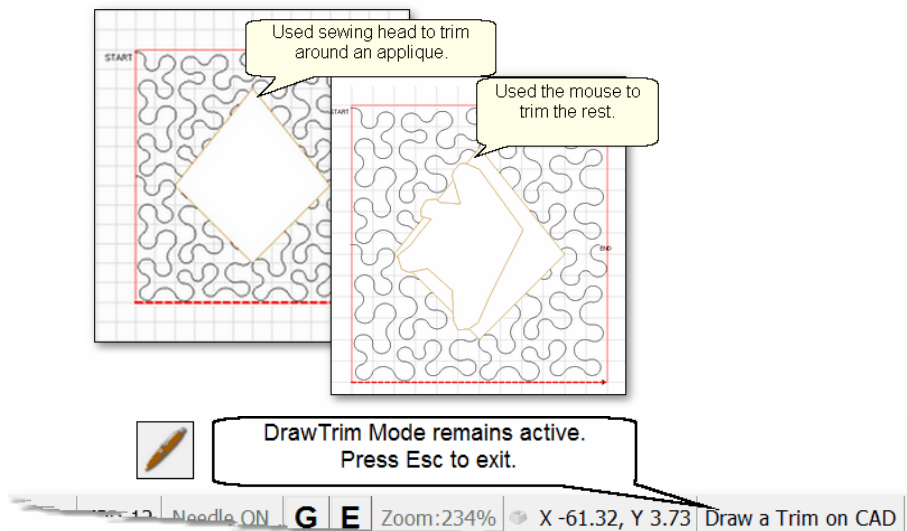
* Click Draw and choose Draw Trim (inside). (*The keyboard shortcut for drawing a*

boundary is Alt+T). This mode assumes you will be creating multiple trims so it stays active until you turn it off. The check mark on the choice indicates that it is active, and a message appears on the status bar.

- Start clicking trim points on the preview area of the screen. CS assumes you know the process and does not display instructions on the screen.
 - * Click as many points as needed to define the area to be trimmed.
 - * Press Escape to cancel the current boundary if needed.
 - * Right Click anywhere in the preview area to complete the boundary. CS will join the last click with the first, enclosing the area. The point identified by the Right click is NOT one of the boundary points. As soon as you complete the trim boundary, the results appear in the preview area.
- Use as many trims as needed to complete the task. Trims can overlap and they remain active for the duration of the project or until they are deleted. Therefore, if patterns are added and/or moved to where a trim is - even after the trim boundary is defined - they will still be trimmed.
- To exit from the Draw, Trim mode, press Escape, or Alt+T, or right click the screen.

It is possible (and sometimes necessary) to trim using both the machine head and the preview area. An example might be stitching a background area, in a block, behind an applique.

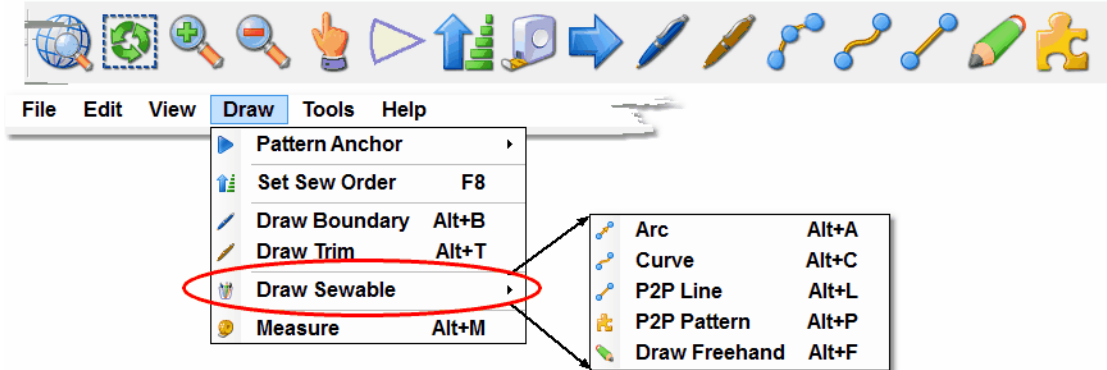
The first trim would use the [Trim Inside](#) ²²¹ icon and the sewing head to get as close to the applique area as possible. The second trim would use the mouse in the preview area to trim away the pattern segments that are too big to be ignored, but too small to add anything to the design.



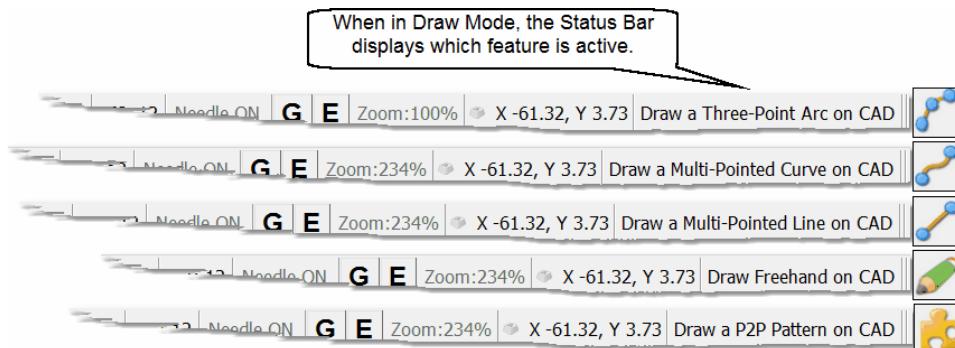
Design It Yourself: Consider using competitive Tieoffs when stitching a trimmed pattern. (See Tools/Tech Support/Configuration Form) These tieoffs can be tiny and well suited for trims, or any area that will have visible start/stop points.

3.5.2.5 Draw Sewable

Draw Sewable is probably the most powerful feature of CS for people who want to create original patterns quickly and easily. Instead of moving patterns onto the Preview area and then stitching them on the quilt, this feature will draw on the Preview area and then stitch it on the quilt. The sewable designs are all positioned using the mouse instead of the sewing head. These designs can be used with other patterns or independently. The sewable drawing choices are arcs, curves, lines and patterns.



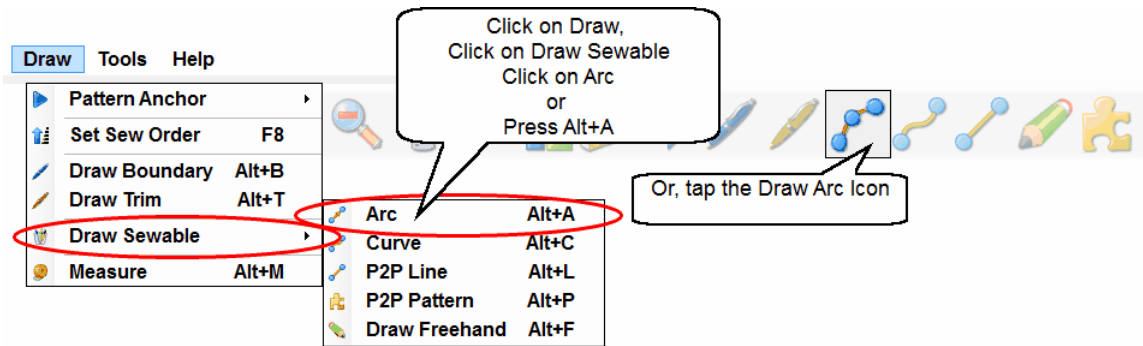
Each has a shortcut, and each remains active until it is turned off (using the Escape key or the same shortcut key sequence). Like other Draw modes, the cursor becomes a crosshair "+" when one of the modes is active.



TIP: Keyboard shortcuts for the Draw command are toggles. (they will turn a feature on and off). When one of the Draw mode features is active, the cursor becomes a crosshair "+", and the feature name appears on the status bar.

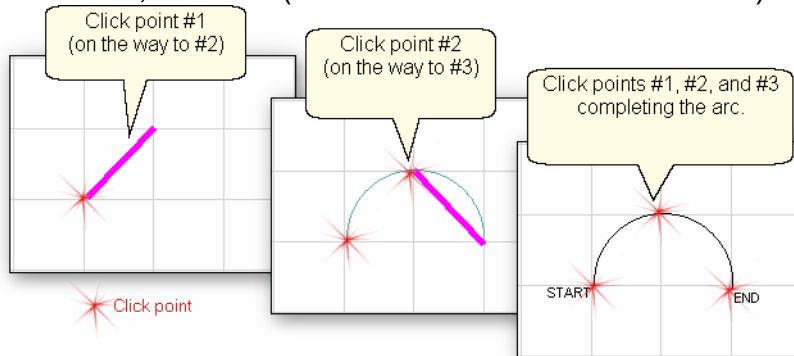
3.5.2.5.1 Draw Arc

Draw Arc - Arcs are precise curves that are drawn on the screen using the mouse or stylus. They are defined with three clicks, identifying the arc start point, the midpoint (peak) and the end point. Experienced pattern designers use arcs extensively to create new patterns. CS beginners will probably use them more often to connect existing patterns. When doing this, simple block patterns can be connected with arcs to create borders or more complex blocks.



To draw an arc,

- * Press the icon, or Alt+A (or Click Draw/Draw Sewable/Arc)



- * With the mouse, click 3 times:

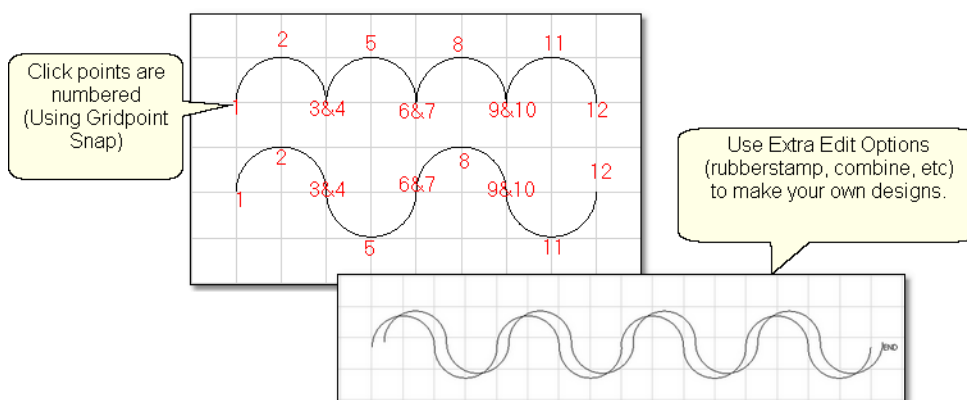
#1 is the start point of the arc.

#2 is the middle of the arc (which will be the peak) of the arc.

#3 is the end point of the arc.

- * To exit from the Draw Arc mode, press Escape, or Alt+A, or right click the screen.

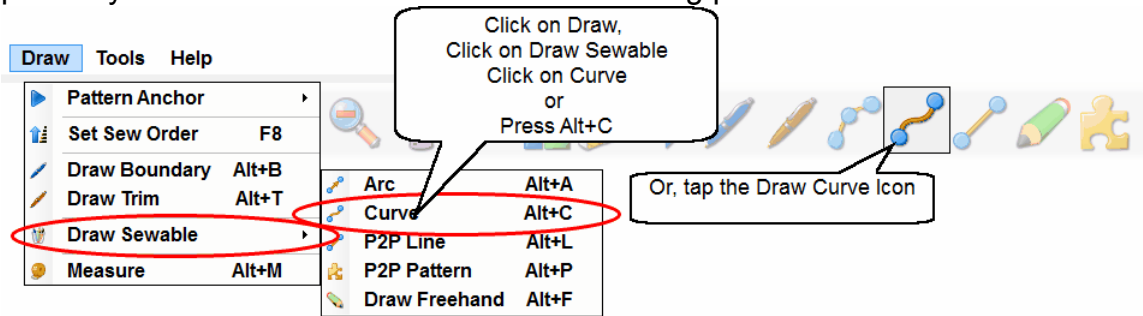
Alt+A is the shortcut for
drawing sewable 3-point arcs



This is a great choice for quilting scallops or continuous curves as shown above. Each scallop is a separate pattern, so they can be adjusted individually. Or group the curves (use as many as the quilt needs) and place them - twice - and offset a little bit, for a ribbon effect.

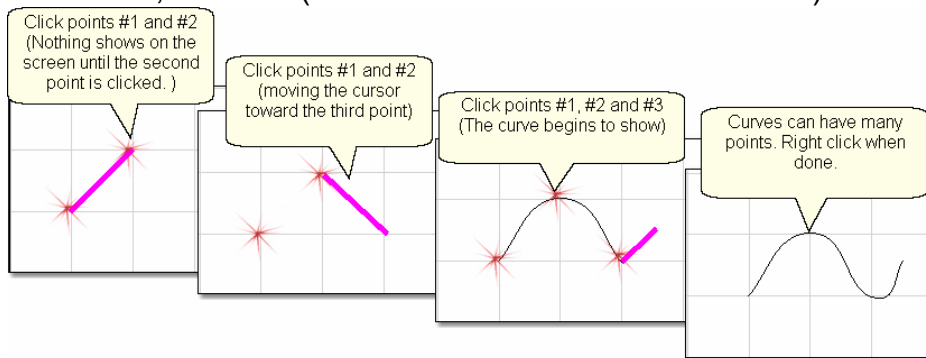
3.5.2.5.2 Draw Curve

Draw Curve - The Draw (sewable) curve feature provides the ability to create longer continuous curves using any number of clicks. The shapes will be different because they are Cardinal Splines (the position of the last 2 clicks determines the shape of the curve defined by the last 3 clicks). Sounds complicated but actually it is easier and less rigid (which means it is also less precise). Again, CS beginners will probably use them more often to connect existing patterns.



To draw a curve,

* Press the icon, or Alt+C (or Click Draw/Draw Sewable/Curve)



* With the mouse, click as many times as needed:

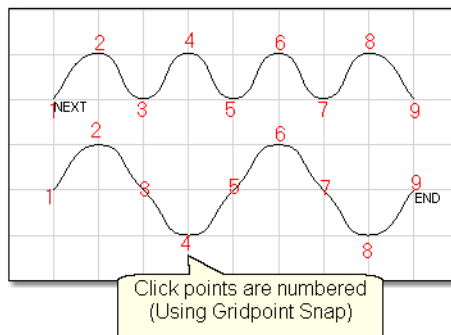
#1 will not appear on the screen immediately, but it is there.

#2 will show the location of #1, but does not begin to curve yet.

#3 will begin to show the curvature.

* To exit from the Draw Curves mode, press Escape, or Alt+C, or right click the screen.

Alt+C is the shortcut for drawing sewable curves.

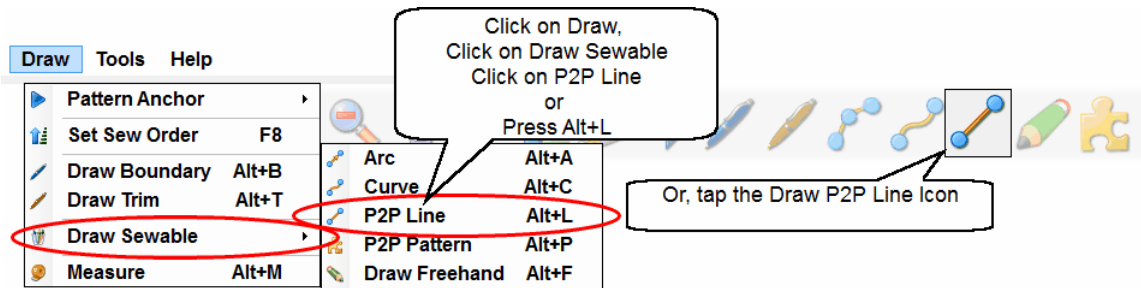


It is possible to get nice curves, if you avoid placing 3 (or more) points in a line. Notice how points (2,3,4), (4,5,6) and (6,7,8) are all in a relatively straight line - not

the best flow for quilting patterns.

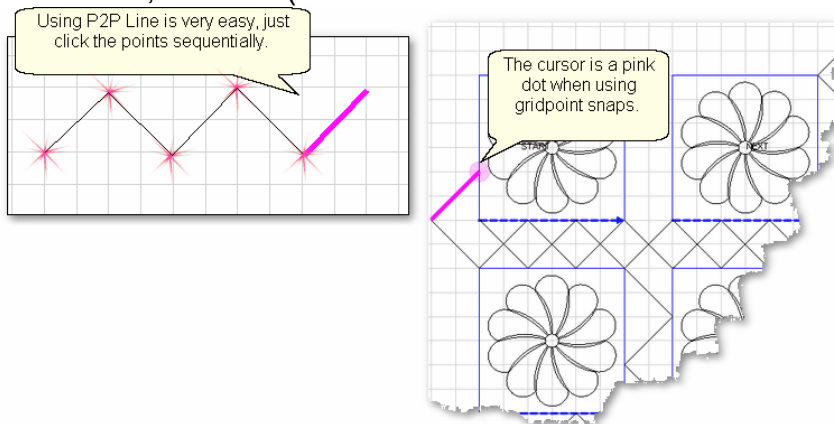
3.5.2.5.3 Draw P2P Line

Draw P2P Lines -The Draw (sewable) Line feature allows sewable lines to be drawn on the screen. Use the mouse to identify points on the screen. CS will stitch a straight line between every sequential pair of points. This is similar to [Point-to-Point Line icon](#)^[173] feature, but it uses the mouse to place the clicks instead of the machine head.

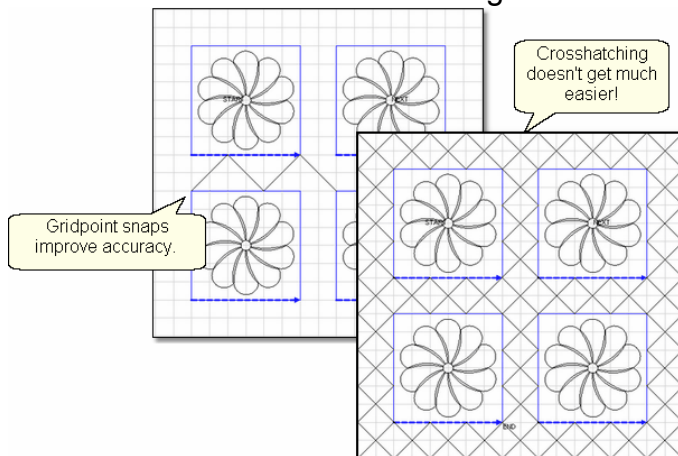


To begin the line drawing,

- * Press the icon, or Alt+L (or Click Draw/Draw Sewable/P2P Line)



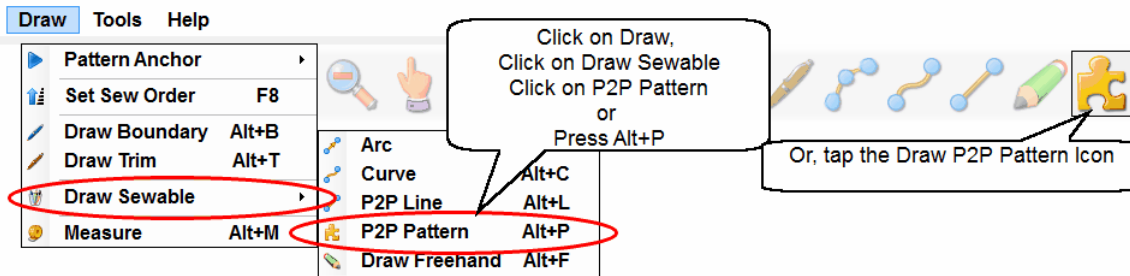
- * Click each point sequentially. Set gridpoint snaps 'on' if desired.
- * Right click to complete the design.
- * Continue to define more crosshatching lines as needed.



- * To exit from the Draw Line mode, press Escape, or Alt+L, or right click the screen.

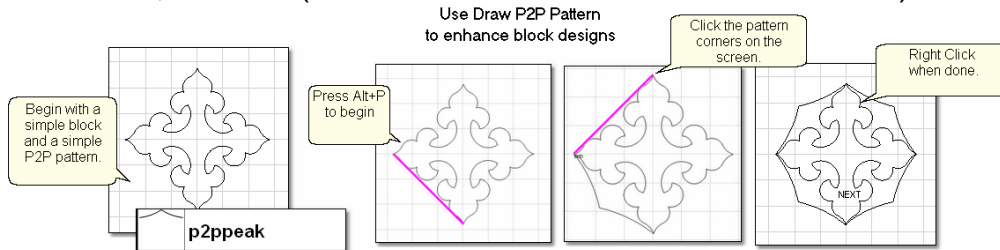
3.5.2.5.4 Draw P2P Pattern

P2P Patterns can also be used with the Draw features. Like the [Point-to-Point Pattern icon](#)¹⁹⁶ feature, clicks are used to position the pattern's start and endpoints. (The end of one pattern is the start of the next.) CS will stitch one copy of a pattern between every sequential pair of points. Instead of using the machine head, this feature uses the mouse and records the points in the preview area on the screen.



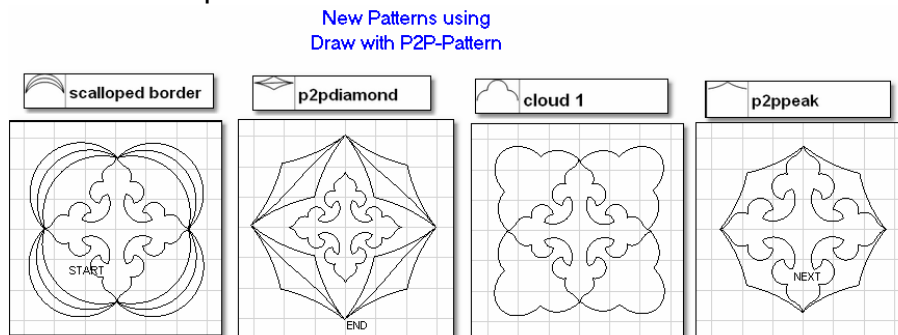
The following demonstrates how to make new patterns by enhancing existing ones using Draw - P2P Pattern.

- * Choose a simple block design & move it to the preview area.
- * Choose a simple P2P pattern (Freeze aspect = On is a good idea).
- * Press the icon, or Alt+P (or Click Draw/Draw Sewable/P2P Pattern)



- * Click each point sequentially. Set gridpoint snaps 'on' if desired.
- * Right click to complete the pattern.

The following shows some of the possibilities using the same basic design, and adding different P2P patterns to it.

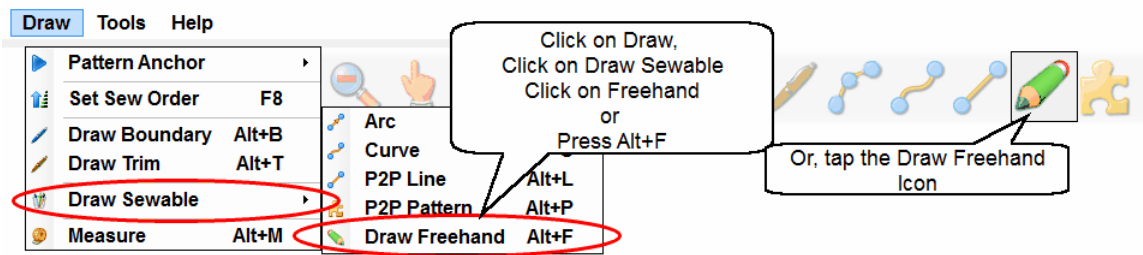


- * To exit from the Draw Pattern mode, press Escape, or Alt+P, or right click the screen.

3.5.2.5.5 Draw Freehand

The Draw (sewable) Freehand feature provides the ability to draw on the screen (using the mouse/stylus/finger), edit the new pattern and stitch it. This is very similar

to the Record function, but the drawing is done on the screen, not with the sewing head.



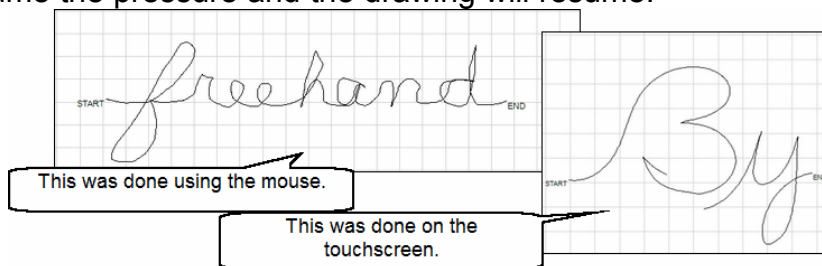
Press the icon, or

To begin the freehand drawing,

* Press the icon, or Alt+F (or Click Draw/Draw Sewable/Freehand).

If using the mouse, the cursor changes shape, becoming a "+". Press and hold the left mouse button down to begin drawing and move the mouse as smoothly as possible. Releasing the mouse button stops the drawing, but pressing it again begins the drawing again. Each of the resulting pattern sections is really a separate pattern which can be moved, edited and stitched individually.

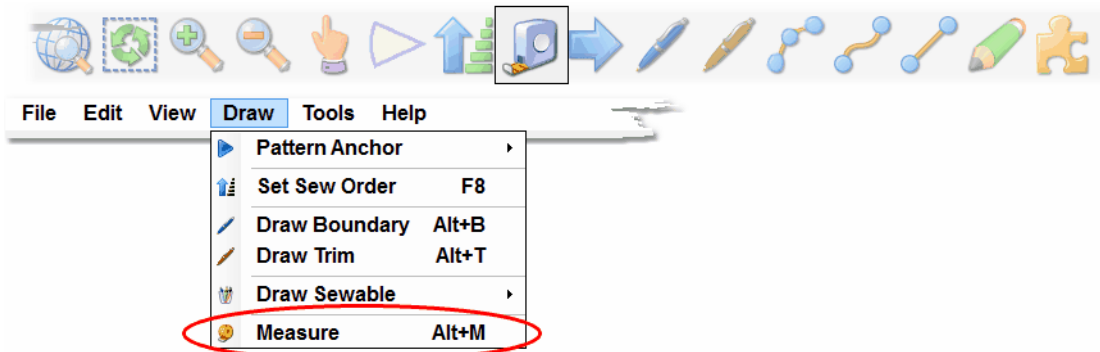
If using a touch screen, touch the screen and move along smoothly, keeping pressure on the screen. Releasing the pressure stops the drawing on the screen. Resume the pressure and the drawing will resume.



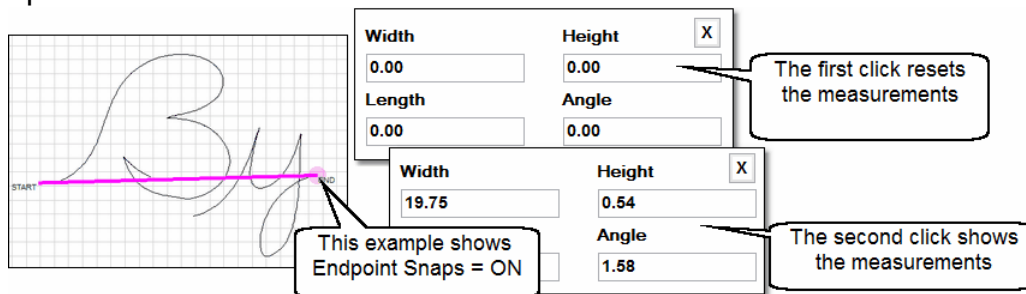
* To exit from the Draw Freehand mode, press Escape, or Alt+F, or right click the screen.

3.5.2.6 Draw Measure

Draw Measure uses the mouse to measure the image of the quilt. Using the mouse, click on Draw Command and choose Measure (or use the Alt+M shortcut). This uses the mouse and screen to take measurements of the items (boundaries and patterns) you have moved to the preview area. These are real measurements, but they are measuring approximations of the quilt, not the real quilt block measurements.



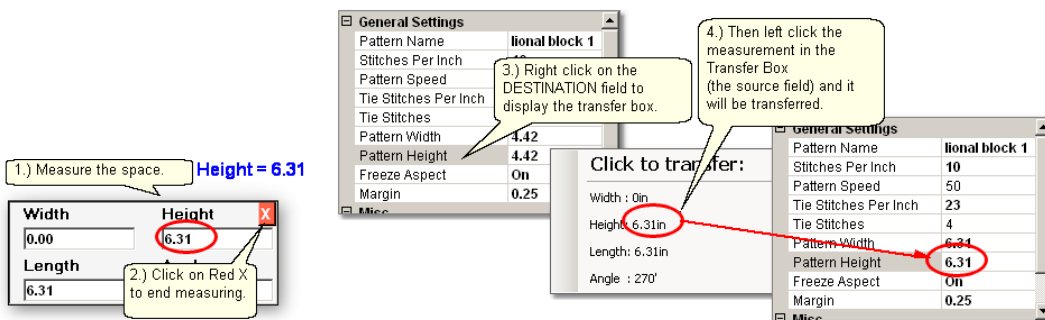
CS is ready to make as many measurements as needed - just keep clicking a series of two points - start & end.




When done, Press Esc key or click on the "X" box.

3.5.2.6.1 Transfer Measurements

CS remembers the four numbers (width, height, length, angle) from the last measurement made, and will transfer them for you. This 'transfer' feature is one of the many special Right Click shortcuts.



Be sure the destination field (where you want the measurement to go) is not selected.

To make the measurement with the sewing head, use the Measure icon 

- Move the machine head to the start point and click OK.
- Move the machine head to the end point and click OK.
- Click the STOP button to stop measuring.

To make the measurement on the Preview Area use the Draw Measure icon 

- Click or tap the start point on the Preview area.
- Click or tap the end point on the Preview area
- Click or tap the "X" in the upper right corner of the dialog box to stop.

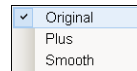
Right click on the Destination field (don't left click it first). and the Transfer box appears. Click on any of the measurements and the number will be moved to the destination.

3.5.3 Record Options

Record is another remarkable feature of CS. It is easy to create new designs by moving the sewing head and saving that motion as a new pattern. This is similar to tracing a design and saving it as a new pattern. It is easy to do because the belts do not have to be engaged to record the motions. Remember that Power Assist makes the machine feel virtually weightless!

Steps to follow:

The Record Mode is a subset of the Regulated Sewing feature.

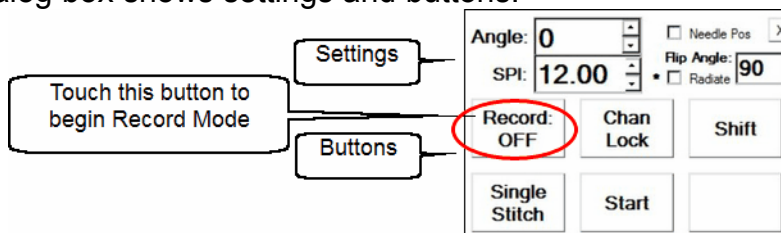


1. Choose a style of Regulated_Sewing

Click on the small black arrow to the right of the Regulated Sewing icon to see the choices. Original, Plus and Smooth vary only in the speed of the needle moving up & down.

2. Click on the Regulated Sewing icon.

A Dialog box shows settings and buttons:

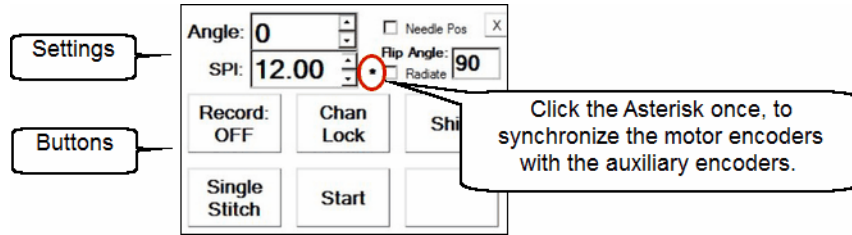


All the functions in Regulated Sewing work the same way when the Record mode is active. Move the sewing head to the beginning of the item to be recorded.

Tip: The machine does not need to be stitching to record a pattern. It is the movement of the stitcher that is being captured, not the movement of the needle. If stitching while recording is desired, just press the Start button after pressing the Record button.

When CS records, the encoders 'remember' the machine movements. Most people are watching the quilt / needle area when moving the machine to record a pattern, but it is also possible to watch the preview area when recording. If you choose to do this, it is wise to synchronize the encoders.

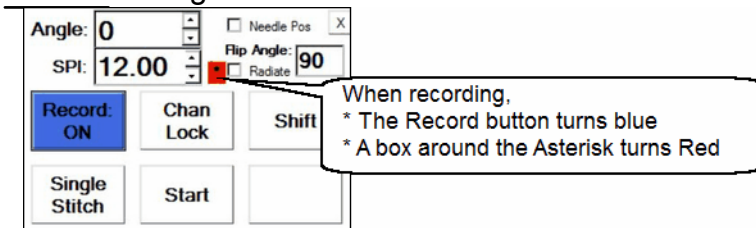
There are two types of encoders: Machine (moves with the sewing head) and Auxiliary (translates movements to show on the screen). If you want to watch the CAD screen while recording patterns that need to align with other patterns on the CAD, click the Asterisk (on the keypad in Regulated Mode) before removing the belts.



It is helpful to draw a boundary around the area being recorded, and adjust the zoom level to see the bounded area before you begin to record.

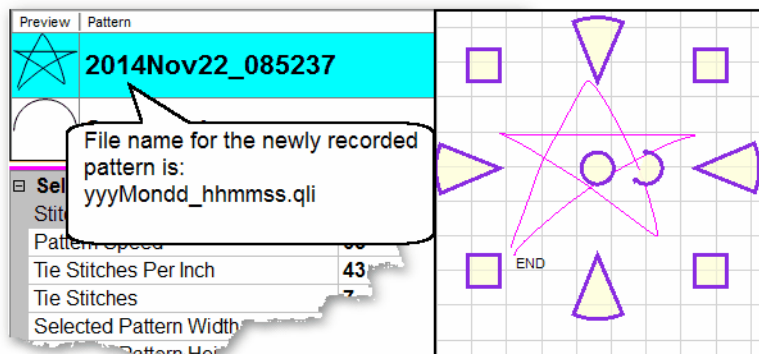
3. Move the machine to the place where the pattern will begin. If you will be stitching while recording, pull up the bobbin thread and take a few tieoff stitches before you start to record.

4. Press Record to begin.



Move the stitcher to create a new pattern.

5. Press Record again to end. If you are stitching while recording, pressing Stop will also end the recording.



Tip: Record mode can be used without the belts being engaged. The belts need to be engaged when synchronizing the motor encoders with the auxiliary encoders as well as when stitching the newly recorded pattern.

CS automatically creates a pattern, gives it a name, and saves it to a special folder called C:\Patterns Recorded. The format for the pattern name is:

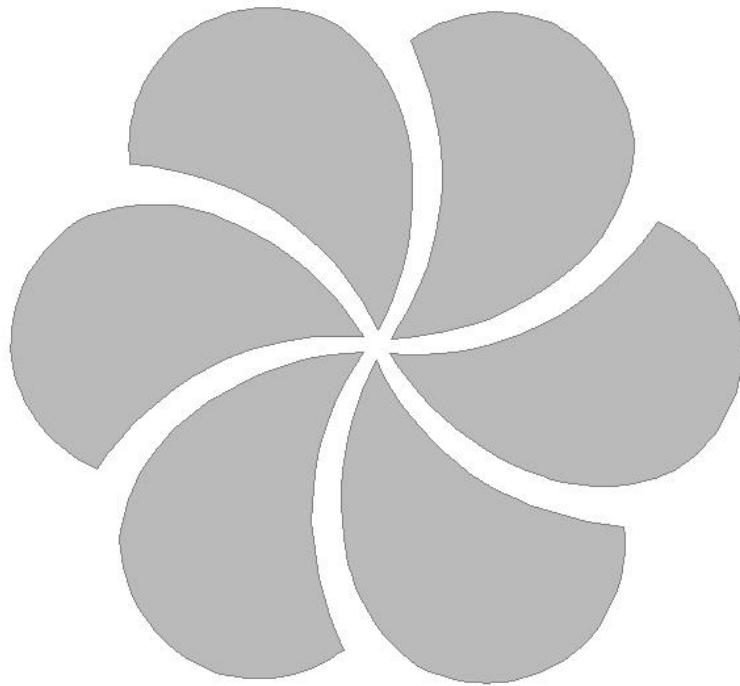
C:\Patterns Recorded\yyyyMondd_hhmmss.csq

where yyy = the year
 Mon = alpha abbreviation of the month
 dd = the day
 hh = the hour
 mm = the minute
 ss = the second
 .csq is the file type needed by CS.

When a recorded pattern is sure to be used again, it is a good idea to [Export](#)¹³⁹ the file, giving it a descriptive name, and putting it in your 'My Patterns' folder. Press Shift and Exit to exit the Regulated Sewing feature.

[Quick Reference Record](#)²⁶⁹

Part IV



4 Quilting the Quilt - Which CS Feature To use

The quilting process generally includes four phases and uses a variety of techniques.

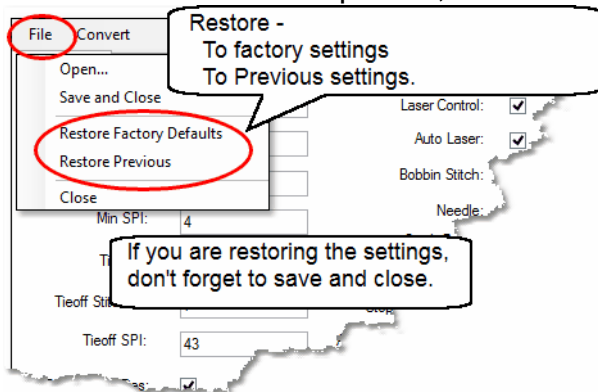
1. Baste the quilt layers to stabilize them.
2. Stitch the blocks (or whatever is chosen for the center).
3. Stitch the borders, corners and sashings.
4. Finish by doing any background filler stitching.

The sequence is suggested because it minimizes the risk of distorting the fabric and getting pleats or tucks. Not all quilts need all phases and the phases aren't always done in this sequence – each quilt is unique. Each CS feature is described in detail in one of these four phases. But first, it is a good idea to modify your default settings and choose the settings that suit the quilt.

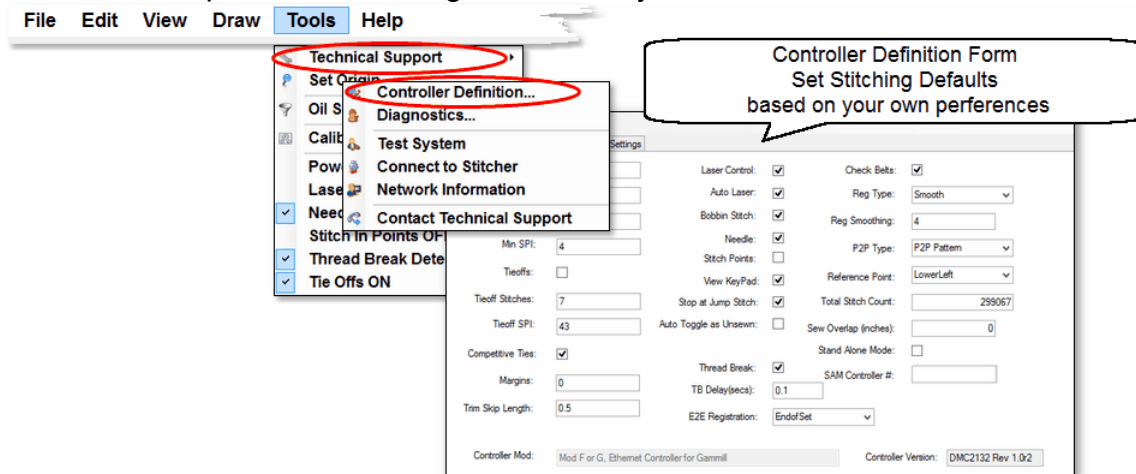
4.1 Set Stitching Defaults

Set Stitching Defaults - Every quilter develops preferences over time regarding the stitching settings. These preferences are set and saved as system defaults, but can be changed to reflect what is best for an individual quilt.

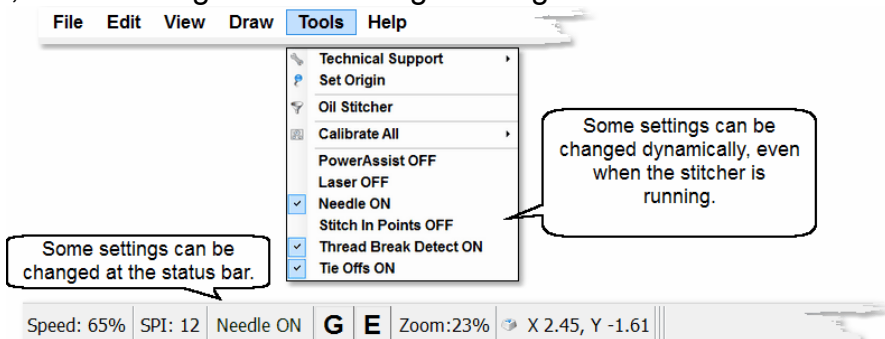
Anytime the CS software is updated, the defaults need to be reset. It is easy to do:



Here is a complete list of settings, and what you need to know about them.



Remember, some settings can be changed using "Tools" in the Command bar.



The most common setting changes relate to the way the quilting patterns start and stop. There are several methods which require combinations of settings to change.

1. Simple Tieoffs. This method is used for Edge-to-Edge background designs. There are several stitches taken before the start and after the end of the pattern.
2. Fast Simple Tieoffs. This method is used for any quilting where speed is important. Tieoffs are used (assume competitive ties are chosen) and the machine does not stop to wait for the threads to be clipped - it just moves to the next stitch line, dragging the thread along.
3. Competitive Tieoffs. This method is used in Custom quilting. The tieoff stitches are part of the pattern and less noticeable. Sew Overlap setting should be larger than the competitive tieoff length.
4. No Tieoffs. This method is often used for competition quilts. Instead of securing the threads with tieoff stitches, the quilter prefers to tie the threads by hand, and bury them with a needle, just like hand quilters bury their knotted threads. These are virtually invisible, and judges like that.

The following shows some typical settings for each of the methods listed. The setting values can change of course, but the combinations of settings is important. In the chart below, competitive tieoffs have been set for 8 stitches at 43 stitches per inch, which is 0.186 inches. Therefore the Sew overlap should be > 0.2 inches.

	Simple	Fast	Competitive	None
Tieoff	Yes	Yes	Yes	No
Tieoff Stitches	6	8	8	n/a
Tieoff SPI	23	43	43	n/a
Competitive Ties	N	Y	Y	No
Bobbin Stitch	Y	N	Y	Y
Needle	Y	Y	Y	Y
Stop at Jump Stitch	Y	N	Y	Y
Sew Overlap	any	0.2	0.2	n/a

Tip: Regular Tieoff stitches will be more secure if the TieSPI is not evenly divisible by the SPI. Example:
 If SPI = 10, TieSPI should not be 10, 20 or 30. It can be 21, 22, 23 ... 29, 31, 32, etc.
 If SPI = 12, Tie SPI should not be 12, 24 or 36. It can be 25, 26, 27... 35, 37, 38, etc.

Here are the stitch settings you can control:

- Speed - the default is defined as a percent of motor speed for most patterns.
 - P2P Line Speed - usually a much slower speed because P2P Line is often used for stitch-in-the-ditch (SID).
 - SPI - Is the default Stitches Per Inch for all stitching.
 - Min SPI - is the minimum number per inch, or the maximum stitch size for normal stitching. If you need a larger stitch length, use the Baste mode.
 - Tieoffs – are small stitches taken before the start, and after the end of each line of quilting. They are extra stitches that create a knot and prevent the thread from coming loose. Similar to satin stitches but going forward/backward instead of side/side.
 - Tieoff Stitches – This is the total number of stitches taken by the tieoff feature at the start and/or the end of the quilting line.
 - Tieoff SPI – This is the size of the stitches taken by the tieoff feature.
 - Competitive Ties - If this is checked, CS will do the tieoff stitches as it starts and ends the pattern, not stitching forward and backward creating a knot. The stitch size is usually smaller (higher SPI) which secures the threads so they can be trimmed. Since they are part of the pattern instead of stitching over the pattern, the knot is far less noticeable. This is preferable for custom quilts.
 - Margins - the amount of space maintained between the boundary and a pattern.
 - Trim Skip Length - The smallest size pattern segment that will still be stitched after a pattern is trimmed.
 - Laser Control – Check means you control the laser.
 - Auto Laser – Check means CS controls the laser and will turn it on/off automatically.
 - Bobbin Stitch – Check means CS will help bring all the threads to the top of the quilt by stopping at each Start and End, taking a single stitch, and prompting the quilter to pull up the bobbin thread. This is normally on (checked) and the manual has been written as if it were always on. Unchecking this will make the sewing happen non-stop - dragging the thread as needed.
 - Needle – Check means the needle is 'on' and will stitch as expected. Turning the needle 'off' is a great feature if the stitch placement needs to be verified before it is stitched.
 - Stitch Points - Check means CS will take an extra stitch in every point of a pattern. This produces very sharp, distinct points.
 - View Keypad – Check means an shaded image of the stitcher keypad will be displayed on the screen every time CS is started. This box is for convenience only, and can be closed at any time.
 - Stop at Jump Stitch – Check means CS will stop at any pattern segment that has a pause or 'no sew' line segment of any kind. These can occur in patterns, text patterns, trimmed patterns, etc. People who choose to tie and bury the threads (instead of using tieoffs) need these pauses to bring the threads to the top for creating the knot.
 - Auto Toggle As Unsewn - Check means CS will automatically toggle patterns as 'unsewn' if there was a thread break detected. It treats multiple repeats (as in an Edge-to-Edge) as a group, so regardless of where the break is, all the patterns from that point forward will be toggled as unsewn.
-

- **Thread Break** – Check means the thread break sensor is on and the machine will stop if a thread break is detected. The thread break sensor is a cylinder in the top thread path. The thread wraps around it so as the machine stitches, the thread is drawn off the spool/cone, through the tension disks and around the sensor, making the sensor turn. If it stops turning for a few seconds the machine assumes the thread has broken and will stop moving.
- **TB Delay (sec)** - the number of seconds CS waits before stopping the stitching due to a Thread Break.
- **E2E Registration** - This is the method used by default when doing [E2E \(automatic\)](#) and realigning the quilt after having rolled it.

Right Column contains some defaults that use drop-down boxes to list the choices for each default.

Check Belts - If two identical points are clicked, CS will issue this warning.

Reg Type refers to the stitch regulator when in regulated mode.

Reg Smoothing **Do Not Change**

P2P Type – is the default (line or pattern) for the [Point To Point feature](#)⁷⁷.

Reference Point – is the default for the reference point used in [Repeat Patterns](#)⁹³

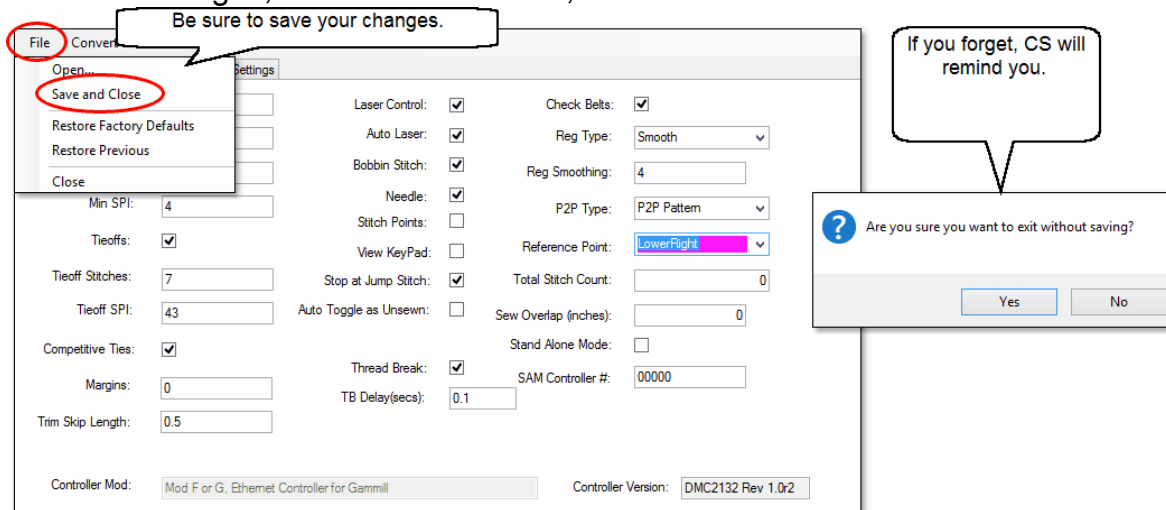
Total Stitch Count – is the grand total of all stitches taken since the software was loaded. This counter includes the stitches done for computer controlled patterns, free motion, and even constant speed when the bobbin winder is running.

Sew Overlap - is a distance in inches, expressed as a decimal. If desired, CS can overlap the stitching in block patterns. Works well on an echo, or on a pattern that has the start and end points on a fairly straight line segment. Overlap stitches may show if the start and end points meet at a point or turn a corner.

Stand Alone Mode - Check indicates CS is loaded on a computer, but the controller is not connected. This allows the software to be used for design work, but not for stitching the designs.

SAM Controller # - is saved here, so the Stand Alone Mode (SAM) can use encrypted patterns.

To Save Changes, Click on the File tab, and click Save and Close.



Now that the preferences are set, let's quilt!

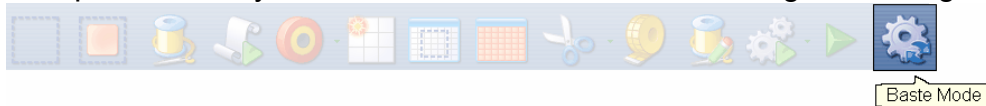
4.2 Phase 1 - Basting

Basting is a fundamental process that is used during the initial loading of a quilt and throughout the quilting process as the quilt is stitched and rolled. There are several methods for basting. Each method is useful under different circumstances.

Simple quilts may only need to have the three layers secured on the outer edges only, and basting is adequate. Complex quilts may need to have many areas of the quilt stitched together to prevent the fabrics (especially the backing) from shifting and pulling. Taking the time to stabilize the quilt will result in a flatter, straighter quilt. Stitch in the ditch (SID) is commonly used in complex quilts because it secures the fabrics, and can disappear into the seams.

4.2.1 Securing the Quilt using Baste

For quilts that only need to be secured on the outer edges, basting is adequate.



Feature: Baste Stitch

The basting stitch is a long stitch and is often temporary. It is commonly used around the outer edges of a quilt. It might be viewed as being a series of single stitches rather than continuous stitches. The difference is the amount of pressure the hopping foot exerts on the fabric. The benefit is that less fabric gets 'pushed' forward in the direction of the sewing. This is very valuable when trying to prevent stretching and/or ease in extra fullness.

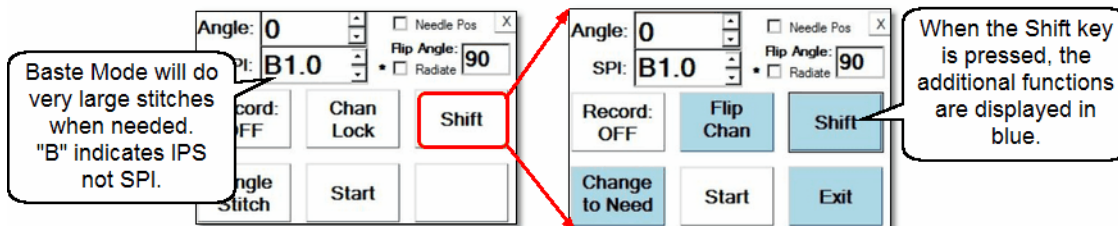
Assumptions: The quilt is loaded, bobbin is full, machine is threaded and the belts are (probably) detached. Free motion quilting is usually done without the belts that control the sewing head which allows the sewing head to move freely in all directions.

Steps to follow:

1. Click on the Baste Sewing icon. 

A Dialog box shows settings and buttons.

When the Shift button is pressed, the keypad buttons have additional functions.



Settings:

Angle: This is the current angle that will be used when Channel Lock is turned on.
SPI - Stitches Per Inch - Basting stitches can vary with the smallest being 20 SPI and the largest being 4 inches per stitch. If the number starts with "B", these are "Inches Per Stitch". Change with up/down arrows or use mouse & keyboard.

Needle Pos - If checked, the sewing head works like the 'Gammill Plus' machines, allowing a half stitch to be taken instead of a full single stitch. Press the button once and the needle goes down & stays there. Press again to bring the needle back up. If it is down when stitching starts, it goes back down when it stops. Remember: The left handle button on the sewing head will also do a single stitch, or half stitch.

Flip Angle: This is intended to be used with the channel lock feature. It will either replace the current angle, or add to it, depending on the 'Radiate' setting. If Radiate is not checked, this angle will replace the current angle, otherwise it adds to it.

Radiate - Works with Flip Angle for creating radiating line designs.

Buttons: There are 6 buttons shown on the screen, which correspond to the 6-button keypad on the sewing head. Additional options are accessible using the Shift button.

A **Two Button Selection Sequence** will display additional options. If using the touchscreen, just touch the Shift key, and the additional buttons appear as light blue buttons, so touch the blue button you need. If the second (blue) button is not pressed in a few seconds, it will revert back to its original purpose. If using the keypad on the sewing head, press and hold the upper right button (Shift) while pressing the second button. When you release the keypad Shift button, the others will revert back to their original color and purpose.


Record Off means the motions are not being recorded, The [Record function](#)^[160] is explained in depth, in a later section.

Chan Lock (on/ off) locks the sewing head so it stitches a straight line at one angle. This requires that the belts be engaged.

Shift - Press this once and additional keypad functions appear & stay for a couple seconds. This is for reference only - each blue button requires a 2-button sequence.

Single Stitch - press this to take a full single stitch. If the Needle Position box is checked, this button is labeled 'Needle Position', and pressing it takes a half stitch.

Start - starts the stitching process, and STOP ends it.

 **Tip:** Wondering when/why you will ever use these buttons and settings in Baste Mode? You probably won't use them here but you will need them in Regulated Sewing Mode. To maintain consistency, the settings and buttons for Baste and Regulated modes are the same.

Shift Key Additional Functions:

Flip Chan Lock - Changes the current angle. This is intended to be used with the channel lock feature.

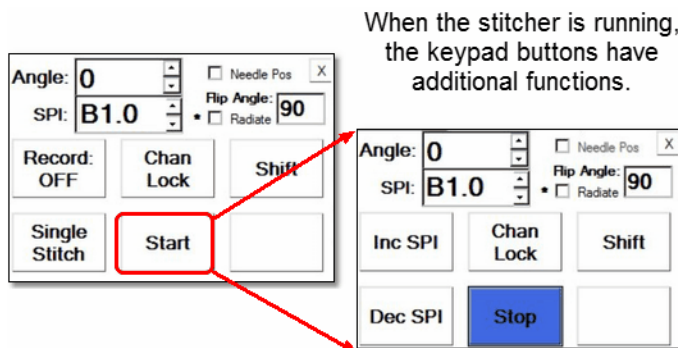
- * If Radiate is not checked, the Flip angle will replace the current angle. To flip the angle using the keypad, press and hold the shift button and press the Flip Chan button. If using the touchscreen press the Shift button first, then press the Flip Chan button. To flip it back again, repeat the 2-button sequence.
- * If Radiating Lines is checked, CS increases the current angle by the number of

degrees shown in Flip Angle. To increase the angle using the keypad, press and hold the shift button, and press the Flip Chan button. If using the touchscreen press the Shift button first, then press the Flip Chan button. Repeat this 2-button sequence to increase it again. It will go up to 90 degrees and return back to 0 degrees.

Change to Need - is used to 'check' (or choose) the Needle Position option, making the Lower Left button do a half stitch instead of a full single stitch.

Exit - To exit baste mode, press and hold the Shift button and press the Exit button. Using the mouse and clicking the "X" in the upper right corner works too.

2. Press Start on keypad when ready to sew and the button label changes to Stop. The dark blue button means the stitcher is running.



Notice that the two buttons on the left have changed in meaning.

Inc SPI means Increase the stitch size.

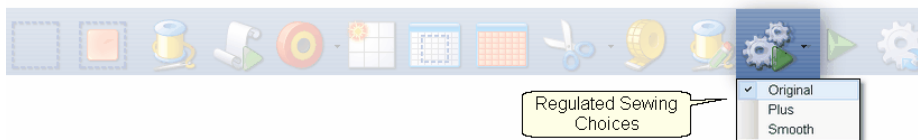
Dec SPI means decrease the stitch size.

3. Press Shift and Exit on keypad when ready to exit Baste mode.

Tip: Try using the single stitch basting method when easing in excess fullness on borders. If you can't ease and baste the fabric without tucks, you probably can't quilt it without tucks either.

4.2.2 Securing the Quilt using Regulated Sewing

Securing the quilt is generally hand-guided, done in regulated mode using Power Assist if desired. CS uses a stitch regulator to provide even, consistent stitches.



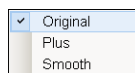
Feature: Regulated Sewing

There are three choices for the regulated stitching process: Original, Plus and Smooth. These are very similar, but each has a little different 'feel' giving the quilter greater flexibility to match their personal free-motion style.

Assumptions: The quilt is loaded, bobbin is full, machine is threaded and the belts are (probably) detached. Free motion quilting is often done without the belts that control the sewing head which allows the sewing head to move freely in all directions. It can also be done using the [Power Assist](#)²³⁴ option.

Steps to follow:

1. Choose a style of Regulated_Sewing

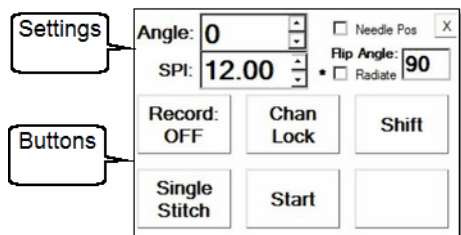


Click on the small black arrow to the right of the Regulated Sewing icon to see the choices. Original, Plus and Smooth vary only in the speed of the needle moving up & down. Try them all and choose the one that you like best.

2. Click on the Regulated Sewing icon.



A Dialog box shows settings and buttons.



Settings:

Angle: This is the current angle that will be used when Channel Lock is turned on.
SPI - Stitches Per Inch is changed with up/down arrows or use mouse & keyboard.

* - The asterisk has a special function, to synchronize the auxiliary encodes with the motor encoders. This is explained in the [Record Options](#) section.

Needle Pos - If checked, the sewing head works like the 'Plus' machines, allowing a half stitch to be taken instead of a full single stitch. Press the button once and the needle goes down & stays there. Press it again to bring the needle back up. If it is down when stitching starts, it will go back down when it stops.

Flip Angle: This is intended to be used with the channel lock feature. It will either replace the current angle, or add to it, depending on the 'Radiate' setting. If Radiate is not checked, this angle will replace the current angle, otherwise it adds to it.

Radiate - Works with Flip Angle for creating radiating line designs.

Buttons: There are 6 buttons shown on the screen, which correspond to the 6-button keypad on the sewing head. Additional options are accessible using the Shift button.

A **Two Button Selection Sequence** will display additional options. If using the touchscreen, just touch the Shift key, and the additional buttons appear as light blue buttons, so touch the blue button you need. If the second (blue) button is not touched in a few seconds, it will revert back to its original purpose. If using the keypad on the sewing head, press and hold the upper right button (Shift) while pressing the second button. If you release the Shift button, the others will revert back to the original color and purpose.

Record Off means the motions are not being recorded, The [Record function](#) is explained in a different section.

Chan Lock (on/ off) locks the sewing head so it stitches a straight line at one angle.

Shift - Displays additional keypad functions.

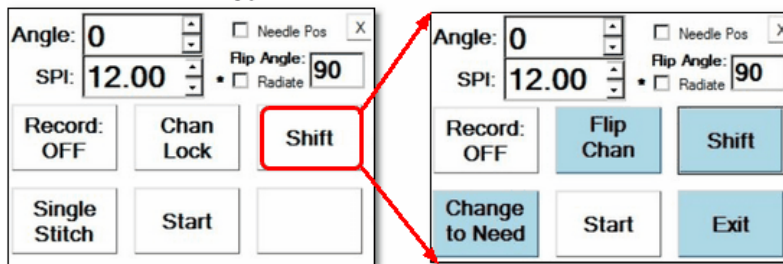
Single Stitch - press this to take a full single stitch. If the Needle Position box is

checked, this button is labeled 'Needle Position', and pressing it takes a half stitch.

Start - starts the stitching process, and STOP ends it.

Additional Functions: These functions (light blue buttons) are initiated by using the two button selection sequence;

When the Shift button is pressed,
the keypad buttons have additional functions.



Flip Chan Lock - Changes the current angle. This is intended to be used with the channel lock feature.

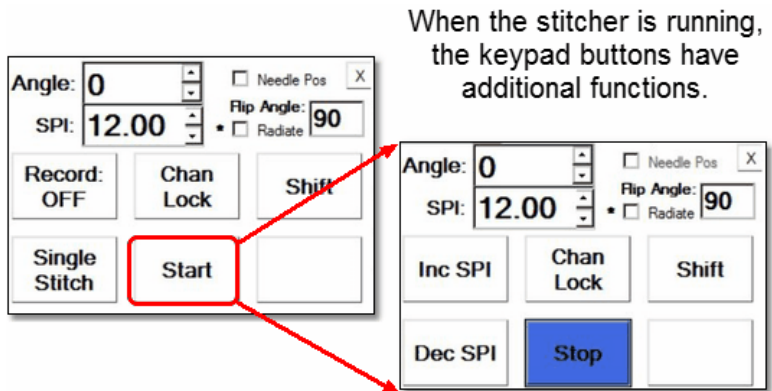
- * If Radiate is not checked, the Flip angle will replace the current angle. To flip the angle using the keypad, press and hold the shift button and press the Flip Chan button. If using the touchscreen press the Shift button first, then press the Flip Chan button. To flip it back again, repeat the 2-button sequence.
- * If Radiating Lines is checked, CS increases the current angle by the number of degrees shown in Flip Angle. To increase the angle using the keypad, press and hold the shift button, and press the Flip Chan button. If using the touchscreen press the Shift button first, then press the Flip Chan button. Repeat this 2-button sequence to increase it again. It will go up to 90 degrees and return back to 0 degrees.

Change to Need - is used to 'check' (or choose) the Needle Position option, making the Lower Left button do a half stitch instead of a full single stitch.

Exit - To exit regulated mode, press and hold the Shift button and press the Exit button. Using the mouse and clicking the "X" in the upper right corner works too.

Tip: The LEFT handle button does the same thing as the lower left button on the keypad. The RIGHT handle button does the same thing as the lower center button on the keypad. This means Regulated Mode works with the handle buttons the same way as the Gammill Plus machines.

3. Press Start on keypad when ready to sew and the button label changes to Stop. The dark blue button means the stitcher is running.




When the stitcher is running, the keypad buttons have additional functions.

Notice that the two buttons on the left have changed in meaning.

Inc SPI means Increase the stitches per inch to get a shorter stitch length.

Dec SPI means decrease the stitches per inch to get a longer stitch length.

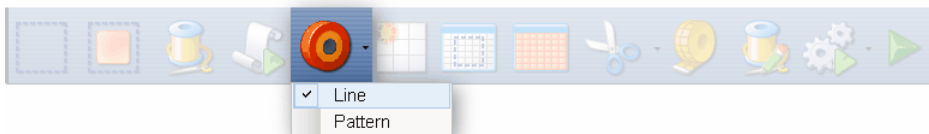
4. Press Shift and Exit when ready to exit regulated mode.

 **Tip:** The belts MUST be engaged when using the channel lock.

[Quick Reference Regulated Sewing](#)^[242]

4.2.3 Stitch in the Ditch using Point_to_Point-Line


Stitch_in_ditch (SID) is a technique where the stitch line follows the seam line resulting in a virtually invisible stitching line. With practice, SID can be done exactly on the seam line. Stitch_near_ditch (SND) is a technique where the stitch line is very near, but not on the seam line. Both SID and SND use normal length stitches and are not removed. They become part of the overall quilting design. Some quilters prefer to do SID free-motion but CS offers another option.



Feature: Point To Point - Line

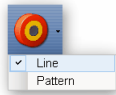
Point to point describes a CS process where a series of connected line segments are positioned and stitched. Remember Dot-To-Dot coloring books? The same concept applies. The quilter supplies the dots and CS stitches a perfect line between each contiguous pair. Each 'dot' is identified by moving the sewing head to each point (in order) and pressing the OK button. The spot where the needle would enter the fabric is the 'Dot' or 'point'.

Assumptions: The quilt is loaded, bobbin is full, machine is threaded, bobbins wound, the speakers are on and the belts are engaged.

 **Tip:** When the seam allowance is pressed toward one side it becomes higher (thicker) than the other side. Doing SID or SND on the lower side of the seam allows the stitching to sink down and disappear too.

Steps to follow:

1. Choose P2P-Line -

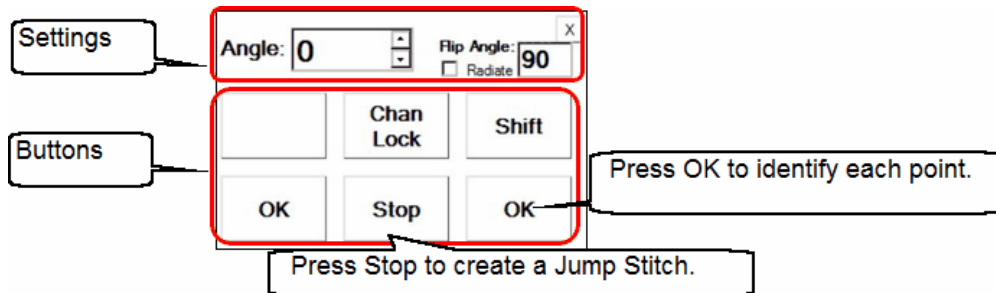


This is one of the choices presented when clicking on the black arrow to the right of the P2P icon.

2. Click on the P2P icon -



A dialog box appears with options.



A dialog box appears with Settings and Buttons:

Settings:

Angle: This is the current angle that will be used when Channel Lock is turned on.

Flip Angle: This is intended to be used with the channel lock feature. It will either replace the current angle, or add to it, depending on the 'Radiate' setting. If Radiate is not checked, this angle will replace the current angle, otherwise it adds to it.

Radiate - Works with Flip Angle for creating radiating line designs.

Buttons: There are 6 buttons shown on the screen, which correspond to the 6-button keypad on the sewing head. Additional options are accessible using the Shift button.

A **Two Button Selection Sequence** will display additional options. If using the touchscreen, just touch the Shift key, and the additional buttons appear as light blue buttons, so touch the blue button you need. If the second (blue) button is not touched in a few seconds, it will revert back to its original purpose. If using the keypad on the sewing head, press and hold the upper right button (Shift) while pressing the second button. When you release the Shift button, the others will revert back to the original purpose.

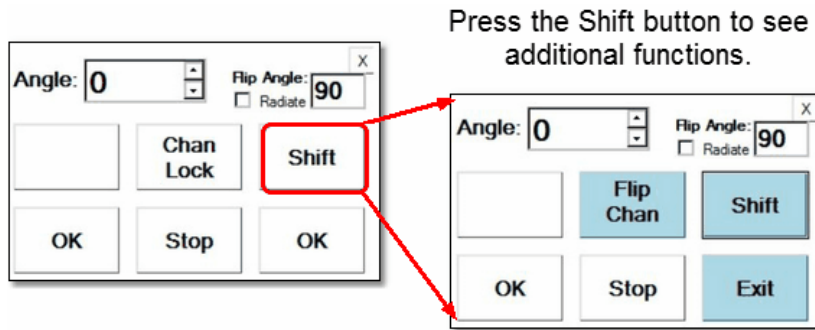
Chan Lock - locks the head so it moves along one fixed angle.

Shift: Will display additional functions (see below).

OK (either button) identifies the points.

Stop indicates the end of the P2P-line sequence. If more points are clicked after pressing Stop, they will be detached from the first segment by a 'jump stitch'. This is like turning the needle off, and moving to the next click to resume.

Additional Functions:



Pressing the shift button will display additional functions (light blue buttons). These can be initiated by using a 2-button sequence.

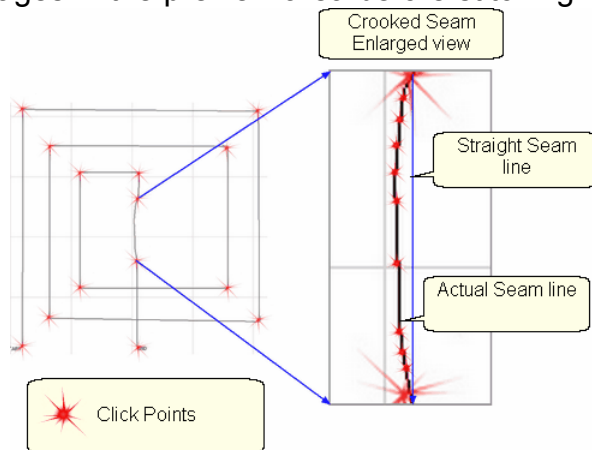
Flip Chan Lock - Changes the current angle. This is intended to be used with the channel lock feature.

- * If Radiate is not checked, the Flip angle will replace the current angle. To flip the angle using the keypad, press and hold the shift button and press the Flip Chan button. If using the touchscreen press the Shift button first, then press the Flip Chan button. To flip it back again, repeat the 2-button sequence.
- * If Radiating Lines is checked, CS increases the current angle by the number of degrees shown in Flip Angle. To increase the angle using the keypad, press and hold the shift button, and press the Flip Chan button. If using the touchscreen press the Shift button first, then press the Flip Chan button. Repeat this 2-button sequence to increase it again. It will go up to 90 degrees and return back to 0 degrees.

Exit - To exit P2P mode, press the Shift button and press the Exit button. Using the mouse and clicking the "X" in the upper right corner works too.

3. Press OK to define the path. Move the machine head from one point to the next, clicking OK on each one. The machine makes a popping sound every time the OK button is pressed. This sound confirms that the point has been registered. The lines connecting the points also appears in the preview area of the screen after each click.

4. Press 'Shift' and 'Exit' to complete the line segments. It is always a good idea to check the images in the preview area before stitching.





Tip: P2P-Line is an accurate way to follow a seam. When the seam has a curve in it, the P2P click points can be very close together, following the curve of the seam. If it is straight, the click points can be further apart.

5. Click on **Start_Quilting**

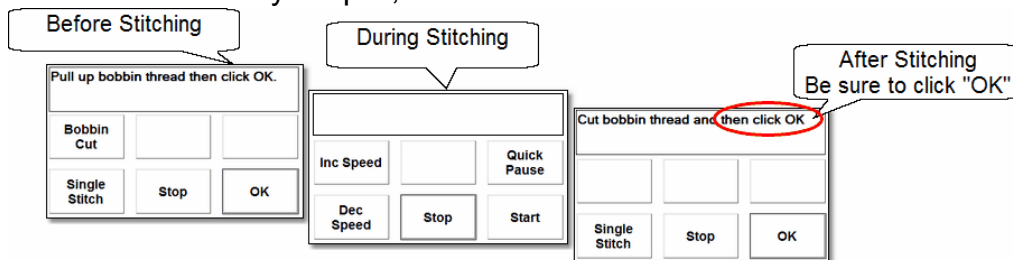


and the sewing head will move to the Start of the pattern. CS will prompt for pulling up the bobbin thread.



Tip: P2P-Line has its own motor speed control (found in the configuration form). It is a good idea to stitch P2P-Line very slowly. the default value is 10% motor speed but this can be increased or decreased while stitching, using the keypad. SPI and tieoff setting are inherited from the project.

6. Press **OK** when ready to quilt,



7. At the end of the quilting sequence, you will be prompted to pull up the bobbin thread and click OK. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.



Design It Yourself - It is possible to use the P2P - Line feature using the mouse and working directly in the preview area on the screen. See [Draw P2P Line](#)^[156].

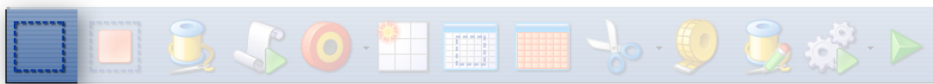
[Quick Reference P2P Line](#)^[253]

4.3 Phase 2 - Blocks

After stabilizing the quilt, the blocks are stitched. In custom quilting the blocks are often the dominant design being used. The outline of each block is identified (by a boundary) and CS uses the boundary as a template for the sizing and positioning of the quilt patterns. Both the boundary and the pattern image are previewed before being stitched.

4.3.1 Define the Block using Boundary


This is a process where the quilt block shape is traced with a series of points, using the sewing head. During this process, CS displays an image of the boundary in the preview area of the screen.

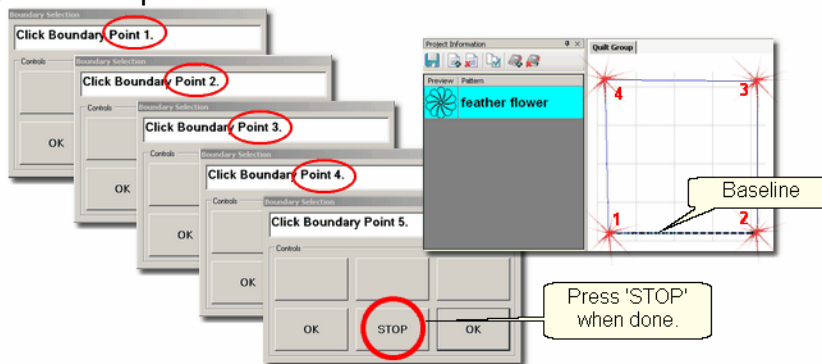


Feature: Boundary

Assumptions: Quilt is loaded and stabilized, machine is threaded, bobbins are wound, belts are engaged and patterns have been chosen.


Steps to follow:

1. Click on the Boundary icon. 
2. CS will prompt for the points that define the boundary. Use as many 'click points' as needed to define the block boundary precisely. When done defining the bounded area, click 'Stop'.

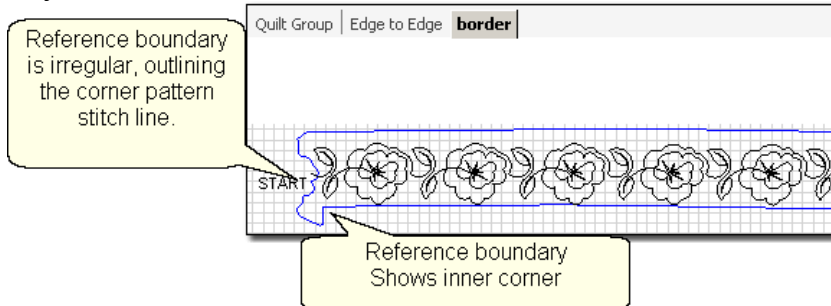


3. An image of the bounded area appears in the preview area. The first two points define the baseline and the pattern will be squared up to this. The square block boundary shown required 4 clicks to define it. Pressing the Stop button completed and enclosed the area. Create multiple boundaries at the same time if desired.

Tip: The fewest number of clicks for a boundary is 3 which defines a triangle. There is no upper limit to the number of clicks required to define a boundary and no limit to the number of boundaries. Avoid concave boundaries - the 'fit' results are unpredictable.

4. Click [View All icon](#)  to adjust the screen so that all boundaries can be seen. Check it before continuing. Add a background grid if desired.

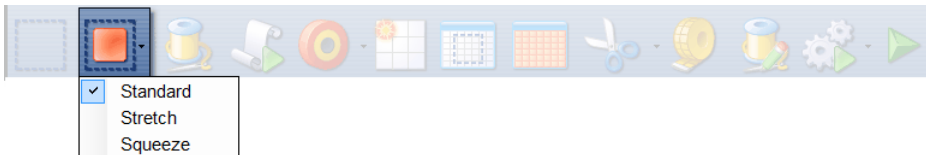
Reference boundaries are boundaries that mark points, edges, seamlines, designs or any other reference used for pattern placement. They might be used to contain a pattern, or they might just be used to help when trying to place a pattern so it fits precisely.



Tip: Reference boundaries are extremely useful! They can be used to essentially trace blocks or seams on the quilt top, showing them on the screen and ensuring accurate pattern placement.

4.3.2 Stitch a Single Pattern using Pattern_To_Boundary

Once a boundary is defined, this feature will move a pattern into the boundary, resizing and repositioning it to fit the boundary.

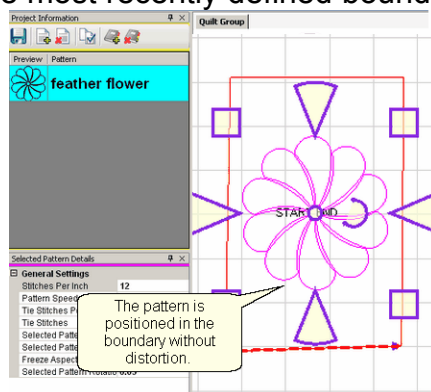



Feature: Pattern_to_Boundary

Assumptions: Quilt is loaded and stabilized, machine is threaded, bobbins are wound, belts are engaged, patterns have been chosen, boundaries have been defined. Choose the preferred method of moving a pattern into the boundary; Standard, Stretch, or Squeeze.

Standard fit method:

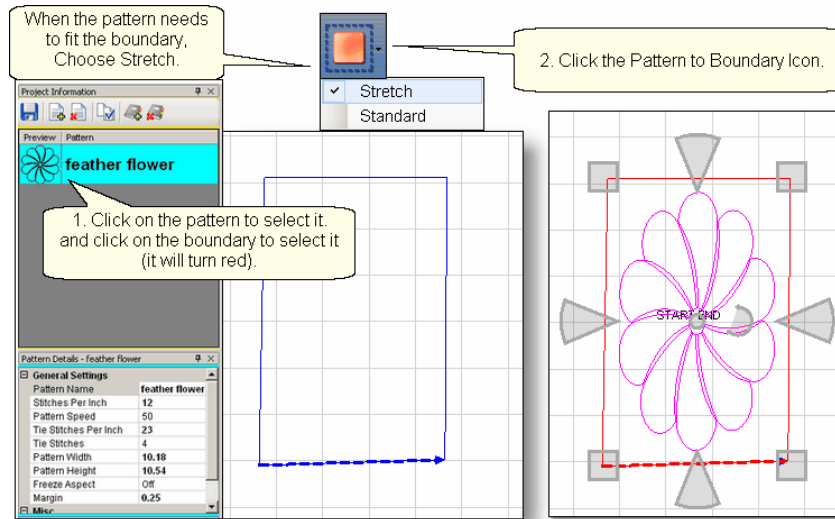
1. Be sure the correct pattern is highlighted and the correct boundary is selected. If the boundary was just created, it is already highlighted (red). If it wasn't the most recently defined boundary, just click it once.




2. Click on Pattern Into Boundary icon  and the pattern will appear inside the boundary in the preview area. Freeze Aspect = ON prevents distortion.

Stretch fit method:

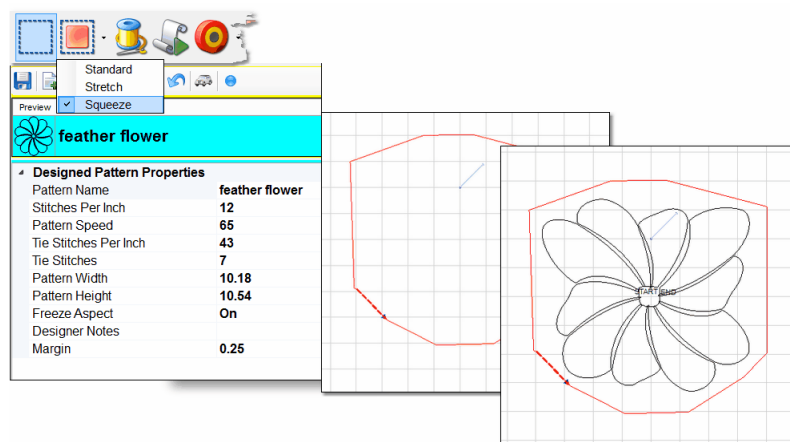
1. Be sure the correct pattern is highlighted and the correct boundary is selected





2. Click on Pattern Into Boundary icon  and the pattern appears in the selected boundary. Since 'stretch' was chosen, CS will turn off Freeze Aspect and try to stretch one of the dimensions to provide a better fit.

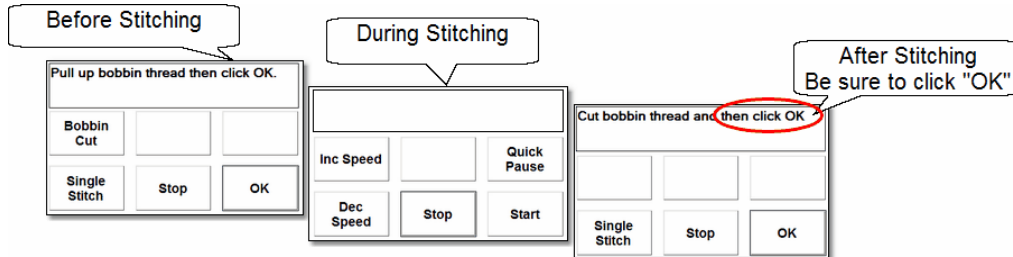
Squeeze fit method:

1. Be sure the correct pattern is highlighted and the correct boundary is selected



2. Click on Pattern Into Boundary icon  and the pattern appears in the selected boundary. Since 'squeeze' was chosen, CS will turn off Freeze Aspect. The pattern is reshaped to fit the boundary.

3. Regardless of the fit method, click on the pattern in the preview area to select it.
4. Edit the size or placement of the pattern inside the bounded area and make changes if needed. [Save the project](#)⁶⁷ often.
5. Click on Start_Quilting  and the sewing head will move to the Start of the pattern. CS will prompt for pulling up the bobbin thread. Press OK when ready to quilt.



At the end of the quilting sequence, CS prompts to pull up the bobbin thread and click OK. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

[Quick Reference Single Block](#)²⁴⁴

4.3.3 Stitch Multiple Patterns using Repeat_Patterns

Repeat Patterns will move a series of patterns (any type) into the preview area. Continuous line patterns will be connected so they stitch in one continuous path. Individual block patterns are placed in a row, but are stitched individually.

[Boundaries](#)¹⁷⁷ are nice to have as a reference, but not necessary.

In Setup Mode, you will move the patterns into the Preview Area. "Repeat Pattern Setup" is a process, and the details are only active now. As soon as this dialog box closes, you will be in Edit Mode and can modify the individual patterns if needed.

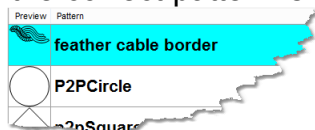



Feature: Repeat_Patterns

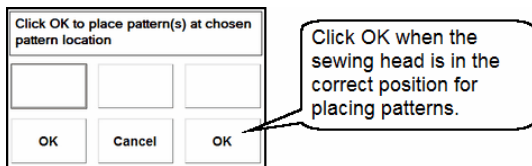
Assumptions: Quilt is loaded and stabilized, machine is threaded, bobbins wound, belts engaged and patterns have been chosen. Boundaries are not needed but they can be helpful so define them if desired.

Steps to follow:

1. Be sure the correct pattern is highlighted.



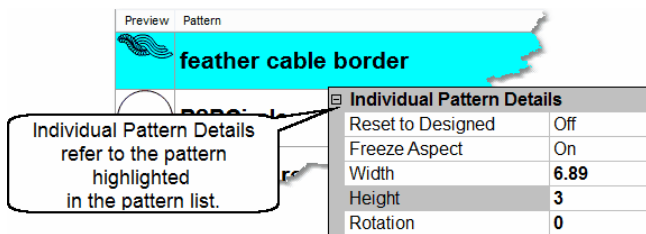
2. Click on Repeat_Patterns icon 



Tip: It is easier (but not essential) to make changes to the settings before clicking on the pattern location. If you forget, CS will move only one repeat into the preview area and it will be the size of the default dimensions. Don't worry, you can still change the size, the number of repeats and rows.

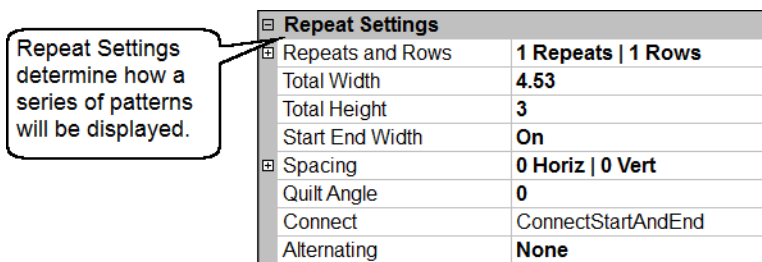
3. Make changes to the settings if desired.

Individual Pattern Details



- * Reset to Designed - means using the Designer's original dimensions.
- * Freeze Aspect - means keep the pattern proportionate when re-sizing.
- * Width - is the actual width in inches.
- * Height - is the actual height in inches. If the height is entered as a negative number, the pattern is flipped upside down. The Freeze Aspect is also turned off automatically.
- * Rotation - is the number of degrees that each pattern is rotated. This applies to each pattern individually, not collectively.

Repeat Settings



- * Repeats and Rows - is the number of repeats (across) or rows (down) desired.
- * Total Width - is the width of all the repeats, based on their placement as defined by the settings described below.
- * Total Height - is the height of all the rows, also based on their placement as defined by the settings described below. If the height is entered as a negative number, the patterns are flipped upside down and Freeze Aspect is turned off automatically.
- * Start End Width (ON / OFF) means the total width/height is measured between the start / end points rather than the outer edges of the patterns.

The screenshot shows the 'Repeat Pattern Setup' dialog box with the following settings:

- Pattern Location Point:** Startpoint, Offset: 0 Horiz | 0 Vert
- Individual Pattern Details:** Reset to Designed: Off, Freeze Aspect: On, Width: 22.31, Height: 9.72, Rotation: 0
- Repeat Settings:** Repeats and Rows: 1 Repeats | 1 Rows, Total Width: 14.67, Total Height: 9.72, Start End Width: On, Spacing: 0 Horiz | 0 Vert, Quilt Angle: 0, Connect: ConnectStartAndEnd, Alternating: None

The diagram shows a pattern with 'START' and 'END' markers. A red arrow indicates the total width when Start End Width is ON (14.67), and another red arrow indicates the total width when Start End Width is OFF (22.31).

- * Spacing (Horiz / Vert) is the distance between patterns. Positive numbers spread the patterns further apart and negative numbers bring them closer together.

3 repeats, 3 rows
Spacing adjusted, Alternating

Repeat Settings	
Repeats and Rows	3 Repeats 3 Rows
Total Width	27.00
Total Height	36
Start End Width	Off
Spacing	1.0 Horiz -1.0 Vert
Quilt Angle	0
Connect	BobbinPullUp
Alternating	PlusRowOnTop

- * Quilt Angle - is the number of degrees of rotation applied to the series of patterns. This applies to patterns grouped together.

The screenshot shows the 'Repeat Pattern Setup' dialog box for a 'feather cable border' pattern with the following settings:

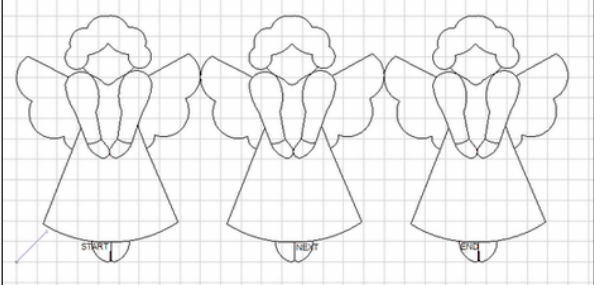
- Pattern Location Point:** Startpoint, Offset: 0 Horiz | 0 Vert
- Individual Pattern Details:** Reset to Designed: Off, Freeze Aspect: Off, Width: 6.89, Height: 3, Rotation: 0
- Repeat Settings:** Repeats and Rows: 3 Repeats | 1 Rows, Total Width: 13.59, Total Height: 3, Start End Width: On, Spacing: 0 Horiz | 0 Vert, Quilt Angle: 45, Connect: ConnectStartAndEnd, Alternating: None

The diagram shows the pattern rotated 45 degrees, with a text box stating: "Quilt Angle will rotate the series of patterns as shown."

- * Connect - what to do between each pattern.
- Connect Start/End tries to stitch the patterns in a continuous path, joining the end of one pattern to the start of the next.
 - BobbinPullUp treats each pattern individually and will pause to allow the bobbin thread to be pulled up and trimmed.

Repeat Settings	
Repeats and Rows	3 Repeats 1 Rows
Total Width	27.00
Total Height	12
Start End Width	Off
Spacing	0 Horiz 0 Vert
Quilt Angle	0
Connect	BobbinPullUp
Alternating	None

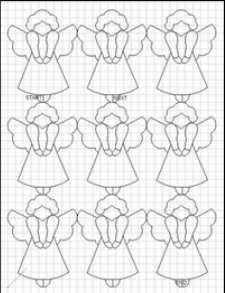
Changing the "Connect" method changes Start End Width.



* Alternating - allows the rows to be staggered. This is done by adding an extra repeat to every other row (called the Plus Row).

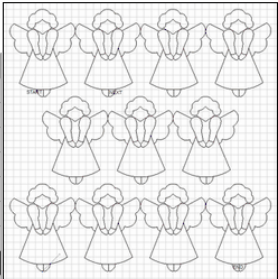
3 repeats, 3 rows
No spacing, Not alternating

Repeat Settings	
Repeats and Rows	3 Repeats 3 Rows
Total Width	27.00
Total Height	36
Start End Width	Off
Spacing	0 Horiz 0 Vert
Quilt Angle	0
Connect	BobbinPullUp
Alternating	None



3 repeats, 3 rows
No spacing, Alternating

Repeat Settings	
Repeats and Rows	3 Repeats 3 Rows
Total Width	27.00
Total Height	36
Start End Width	Off
Spacing	0 Horiz 0 Vert
Quilt Angle	0
Connect	BobbinPullUp
Alternating	PlusRowOnTop



4. Click on the point on the quilt top that you will use as your Pattern Location point and the images are moved into the preview area.

Pattern Location Point is the position of the sewing head, so move the machine to the place on the quilt where you want the patterns to be placed, and choose one of the following positions.

Repeat Pattern Setup	
Pattern Location Point	
Pattern Location	Startpoint
Offset	0 Horiz 0 Vert
Individual Pattern Details	
Reset to Designed	Off
Freeze Aspect	On
Width	11

Pattern Location Point Choices to use:

- Upper Right Corner
- Upper Left Corner
- Lower Right Corner
- Lower Left Corner
- Startpoint
- Endpoint
- Center


* Pattern Location tells CS where to put the pattern image, in relation to where the sewing head is positioned.

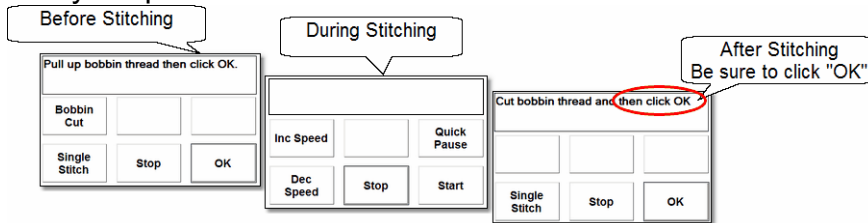
* Offset - is the distance (H and V) between the clicked reference point and what the pattern will use as a reference point.

Reminder: Any of the process details (Repeat Pattern Setup) can be changed until

you exit setup mode and begin to edit the patterns in the preview area. Once you start to edit patterns, returning to change numbers in the process details will erase any editing you have done. [Save Project Settings](#)^[67] often.

Exit Setup mode by 1) closing the Repeat Pattern Setup dialog box, 2) changing to a different quilt group (tab) 3) opening another project. The individual patterns in the preview area can now be edited as needed.

5. Click on Start_Quilting  and the sewing head will move to the Start of the pattern. CS will prompt for pulling up the bobbin thread and choosing OK when ready to quilt.

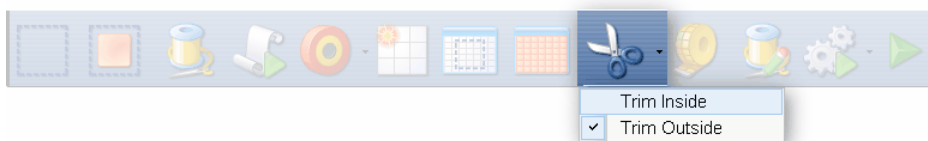


At the end of the quilting sequence, you will be prompted to pull up the bobbin thread and click OK. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

Tip: It is possible to re-stitch a pattern that is in the preview area. After a pattern is stitched, it turns red and is tagged as 'sewn'. To re-use this pattern, it needs to be tagged as 'unsewn'. To do this, right-click on the pattern, choose the "toggle as unsewn", reposition the pattern if needed and click on Quilt icon to stitch it again.

4.3.4 Stitch Partial Patterns using Trim-Outside

Block patterns can be customized to fit areas by trimming away part of the block. For example, square blocks can be trimmed to fit side setting triangles or any other odd shaped block.



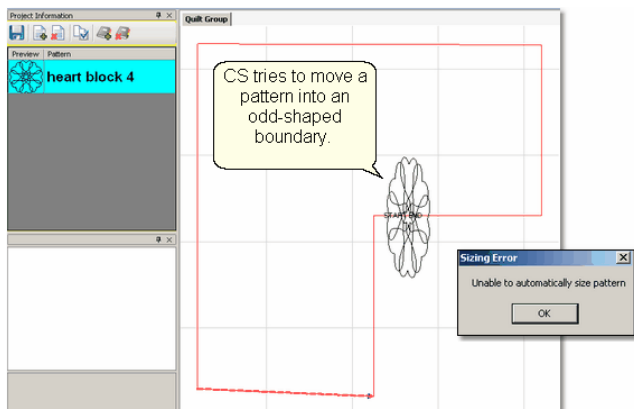
Feature: Trim Pattern - Outside

Assumptions: This assumes that the following preparation steps have been completed.

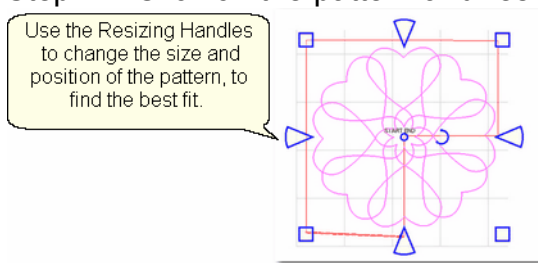
Prep Step #1. [Define the boundary](#)^[177]. Highlight it if needed (it turns red).

Prep Step #2. Highlight the pattern to be used (it turns cyan).

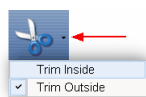
Prep Step #3. Click on Pattern into Boundary icon. When the boundary is odd shaped, CS may have trouble automatically resizing the pattern to fit the space. It will generate a warning message, but will still try to resize the pattern. Click OK to clear the Sizing Error box.



Prep Step #4. Click on the pattern and resize using the handles until satisfied.



Steps to follow:



1. Specify Trim Outside.

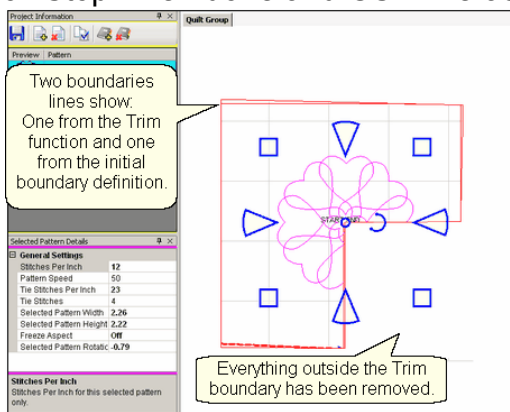
This is one of the choices presented when clicking on the black arrow to the right of the Trim icon.

2. Click on the Trim icon.

CS will prompt for a Trim boundary.



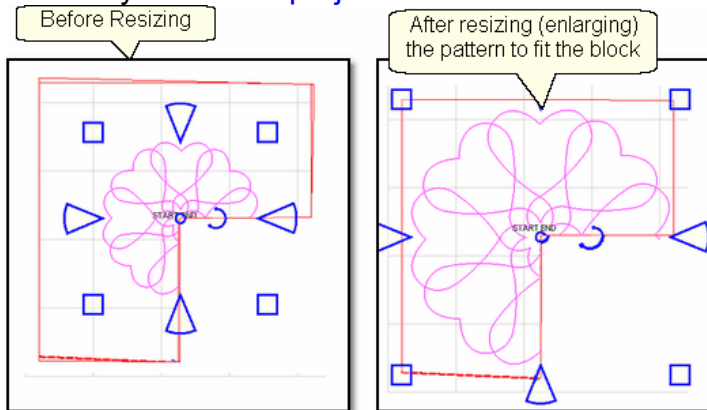
3. Click Stop when done and CS will erase everything outside the boundary.





Design It Yourself - Steps 2 & 3 above could have been done using the 'Draw' command, '[Draw Trim](#)'¹⁵¹ choice. These [Draw Options](#)'¹⁴⁵ don't include step-by-step prompts, but perform the same function.

4. Reposition the pattern image. Click on the pattern(s) to select if needed. Use the resizing handles to re-size, rotate and reposition the pattern so it aligns to the Trim boundary. [Save the project](#)'⁶⁷.



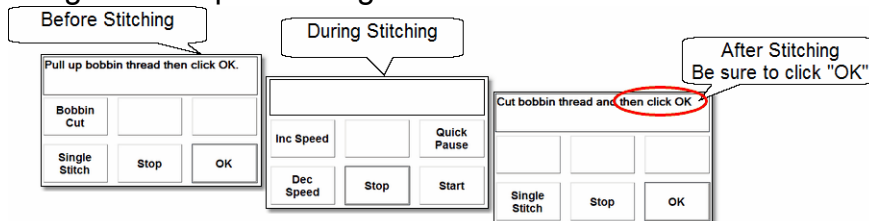
Tip: CS hasn't really deleted any of the pattern. It just won't sew outside of your boundary. Therefore, you can click inside your boundary to select the pattern and reposition it or resize it until it fits perfectly.

5. Click on Start_Quilting




6. The sewing head will move to the Start of the pattern. CS will prompt for pulling up the bobbin thread and will begin stitching.

The Trim function eliminates some of the pattern so the thread needs to be secured at each edge of the trim boundary, as it 'jumps' from the end of one stitch line to the beginning of the next. To avoid thread breaks at these jump stitches, CS will finish a segment and instead of moving directly to the beginning of the next pattern segment it goes past about 1/4" and comes back to the correct spot. This pulls just enough extra thread to reduce the stress on the thread and this improves accuracy when starting the next pattern segment.



Tip: Some quilters prefer to skip the tieoff stitches and hand-tie the threads and bury them. CS can stop and do the Bobbin Pull-up routine instead of doing tieoff stitches. The settings are found in the Controller Definition - Configuration Form.

At the end of the quilting sequence, you will be prompted to pull up the bobbin thread. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

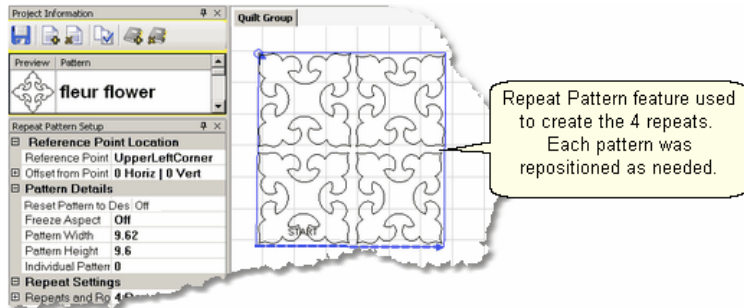
 **Tip:** Multiple "Trim-Inside" boundaries are possible in one quilt group but only one "Trim-Outside".

[Quick Reference Trim Outside](#) ²⁵⁷

4.3.5 Stitch a Composite Pattern

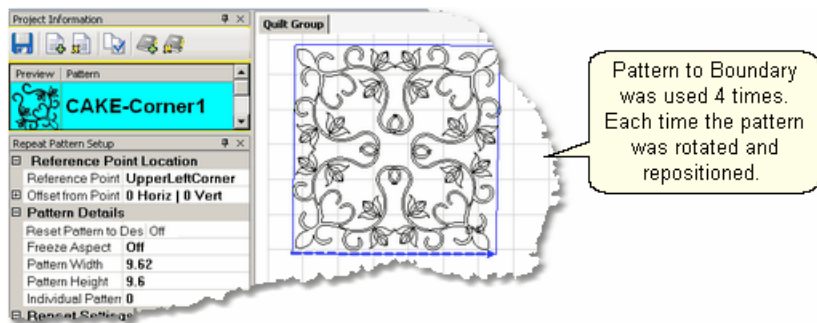
Composite patterns can be created using any patterns but [block patterns](#) ⁷⁵ and [P2P patterns](#) ⁷⁷ work best. Composite patterns are recommended when a block is large and needs more than one pattern to fill the space. Sometimes composite patterns are created to fit unusual shapes.

Example 1: Simple patterns are often the best choice for quilts because they add curves and motion without detracting from the piecing. Large areas may need multiple copies to provide consistent density.



In the example above, the pattern was rotated 45° to fit the space. To move the patterns into the preview area, [Repeat Patterns](#) ¹⁸⁰ was used (notice the reference point mark in the upper left corner of the block). The patterns are easy to individually reposition inside the block. If this composite pattern is going to be used repeatedly in this project, it may be a good idea to group the four patterns, making it one pattern. To do this, select the group, right click them and choose ['Combine Patterns'](#) ¹³⁸. If it is worth saving for other projects, use [Export](#) ¹³⁹.

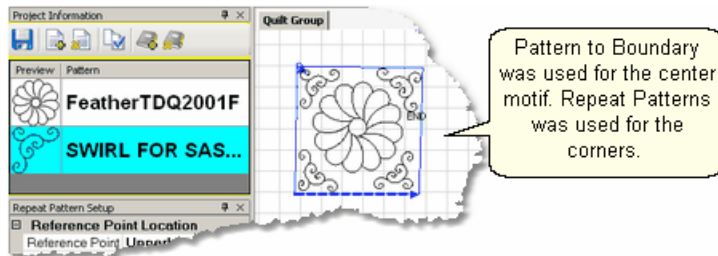
Example 2: Sometimes the patterns need to overlap to provide consistent density. The individual patterns are harder to identify when they overlap too.



Multiple copies of the pattern were placed by defining the boundary first, then using [Pattern to Boundary](#) ¹⁷⁸ four times. Each pattern was moved into the boundary, then selected, repositioned, resized and rotated to fit one of the four quadrants. After all

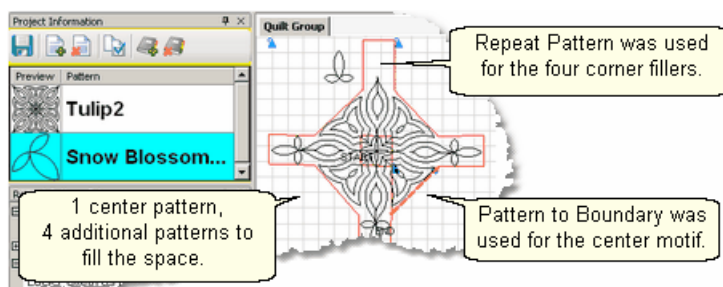
four patterns were placed and then they were carefully resized so the overlaps appear seamless. Again, if this composite pattern is going to be used repeatedly, it may be a good idea to group the four patterns, making it one pattern. Select the four patterns, right click the selection and choose [Combine Patterns](#)^[138] or [Export Pattern](#)^[139].

Example 3: Round patterns placed in square quilt blocks can be problematic. Filling the corners with a small pattern will improve quilt density. Keeping the corner pattern simple prevents detracting from the center motif.



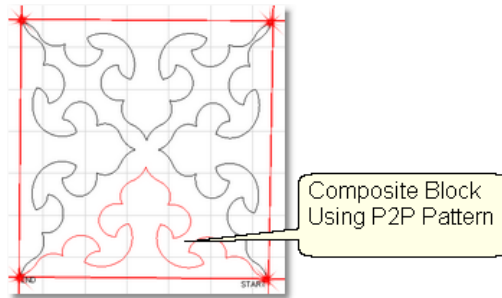
In this example, [Pattern to Boundary](#)^[178] was used for the center motif. [Repeat Patterns](#)^[180] was used for the corners. Each corner was rotated, resized and repositioned individually to fit the space. If these patterns will be used repeatedly and the piecing is very accurate, this would be a good set of patterns to [rubber stamp](#)^[110]. The 5 patterns would be grouped automatically, so the rubber stamped copy would be a single pattern.

Example 4: Odd shaped spaces are challenging too. In this example, a small triangular pattern was chosen because it had curvature that was very similar to the center block. When the triangular pattern touches the center pattern, it gives a very custom look.



The center pattern was rotated and placed first. The four triangles were sized next and then rotated to the correct orientation. (The top triangular pattern is detached to demonstrate how the patterns fit.) This might be a good set of patterns to rubber stamp too.

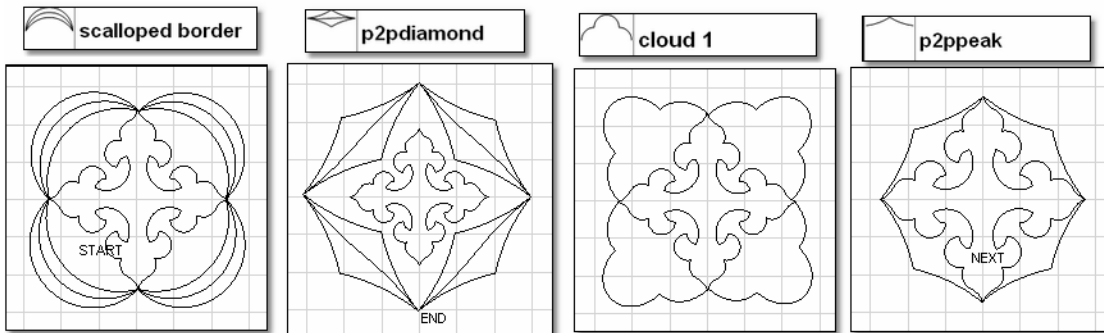
Example 5: Point To Point patterns can be used to fill a block. In this example, one of the four [P2P patterns](#)^[196] has been stitched so it is red.




The pattern's shape was triangular, and the P2P clicks were done at the corners of the square block. It took five clicks to complete this design. (Use [Endpoint snaps](#)^[150] to be sure the last click and the first click are on the same point, but leave endpoint snap off for the other points.) Originally, because the patterns were triangular they touched at the center point, and looked too dense. Since each P2P pattern is editable, they were individually selected and the height reduced so they do not touch in the center. The result demonstrates better balance. Because the composite pattern needs to stitch into the corners of the block (and blocks are rarely square) it might be better not to group these patterns.

Example 6: Point To Point patterns can also be used to enhance a block. The examples below used [P2P pattern](#)^[196] combined with a simple pattern to create new designs that all really work well together because they all contain a common element.

New Patterns using
 Draw with P2P-Pattern



 **Design It Yourself** - It is possible to use the mouse and keyboard shortcuts to do many of the steps above. See [Draw Options](#)^[145].

4.4 Phase 3 - Borders

Borders are (usually) continuous line patterns designed to be stitched repeatedly across an area. Corner patterns are usually placed in the preview area first, and then the repeated border patterns are placed and connected.



Design It Yourself: With experience you will be comfortable making corner patterns using your own border patterns. The [Draw Options](#)^[145] and [Right Click Options](#)^[106] are used to modify them and [Export Pattern](#)^[139] will save them in a re-useable format.

4.4.1 Corners using Border_Corner

Often pattern designers create two patterns that fit together - one for the corner and one for the border repeats. The Border Corner feature is designed to automatically resize and place the patterns together. The Border Corner feature needs a dedicated Quilt Group and will create a new one automatically (although you can change the name if desired). It will prompt for special boundary reference points.

Border Corner can resize and place just the corner patterns, or it can resize and place both the corner and the border patterns.

* If just a corner pattern is selected when this feature is started, just the corner pattern will be placed.

* If both patterns are selected (the corner MUST be first) then CS will resize and place the top corners and all the top repeats.

* If both patterns are placed, AND the quilt length is given, CS will resize and place the side repeats also.

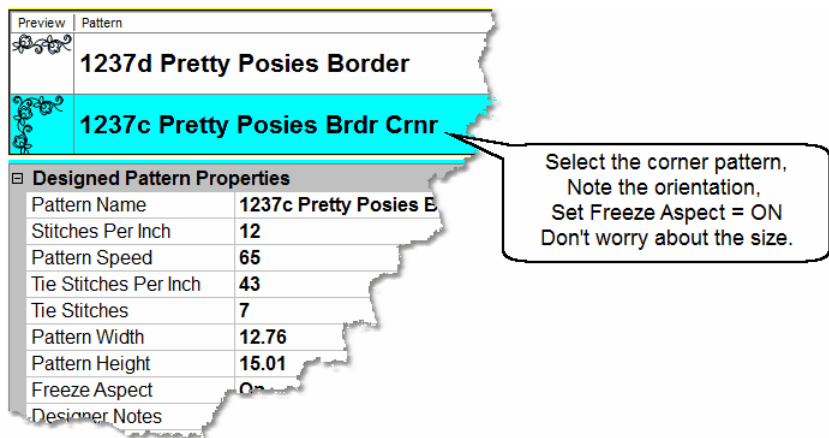


Feature: Border_Corner

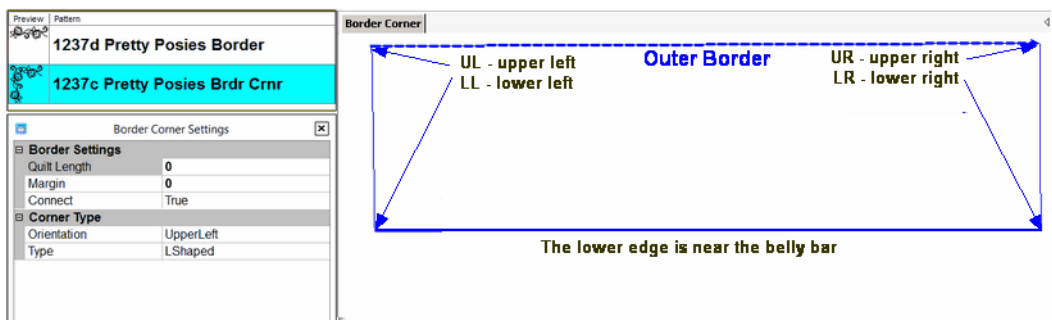
Assumptions: Quilt is loaded and stabilized, machine is threaded, bobbins wound, belts engaged, and patterns have been added to the project.

Steps to follow for placing just the corners:

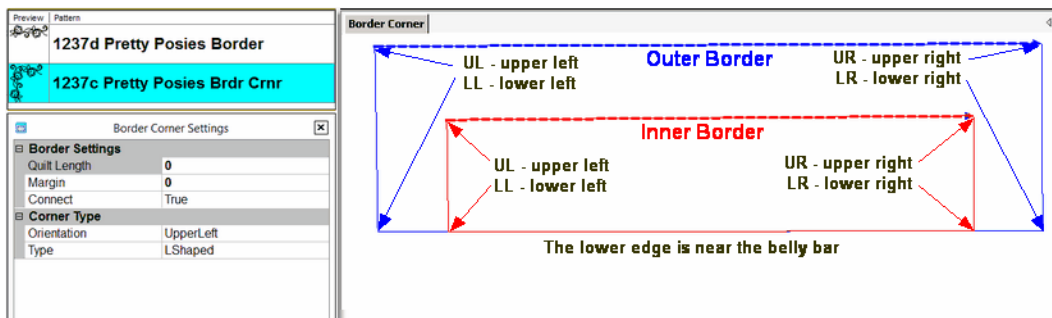
1. Highlight the corner pattern so the Pattern Details are displayed in the Properties box. Most corner patterns need to retain their original shape so Freeze aspect ON might be a good idea.



2. Click on the [Border_Corner icon](#)  CS prompts for the border boundaries: Click Outer border first (UL, UR, LR, LL corners).

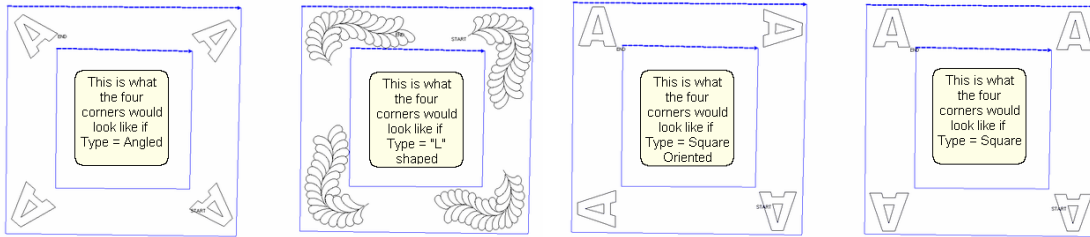


Click Inner border next (UL, UR, LR, LL corners).



The image of the Outer Boundary is blue and the Inner Boundary is red. CS can tell if this is an upper or lower border by the distance between the two boundaries. If the bottom edges are very close, it is an upper border. Conversely, if the top edges are very close, it is a bottom border.

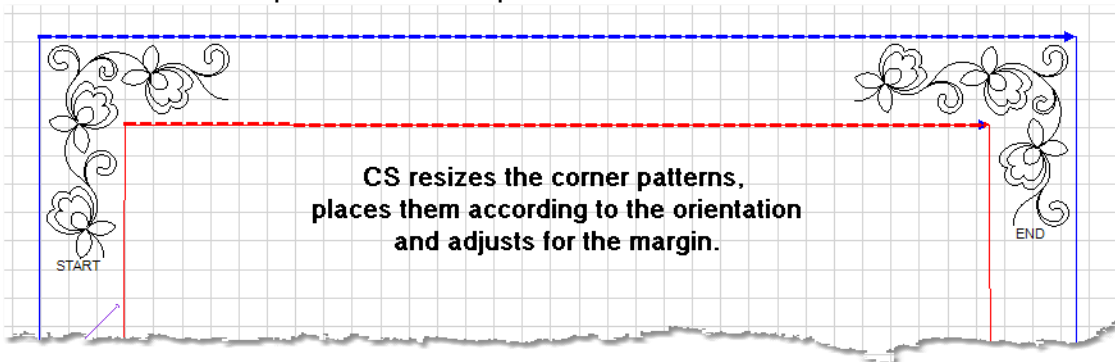
3. Edit the Border Corner settings, choosing the type and orientation that best fits the corner pattern. Here are some examples of corner types.



Corner Types:

- * "L" shaped corners extend past the corner into the border area.
- * Square corners have the top upright and the bottom upside down.
- * Square oriented corners are rotated in 90 degree increments.
- * Angled corners are angled toward the inside at each of the four corners.

4. CS moves the corner pattern into the preview area.

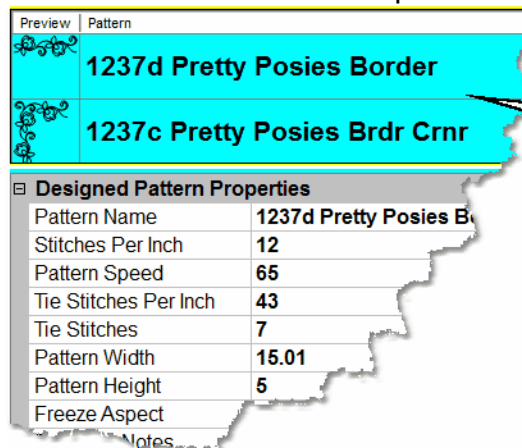


Tip: If you decide you don't like the corner pattern and want to try something else, just highlight the new corner pattern, click Pattern to Boundary icon, and CS will switch the patterns.


Steps to follow for placing corners AND top repeats :

The Corner pattern should be highlighted so the Pattern Details are displayed in the Properties box. Most corner patterns need to retain their original shape so Freeze aspect ON might be a good idea.

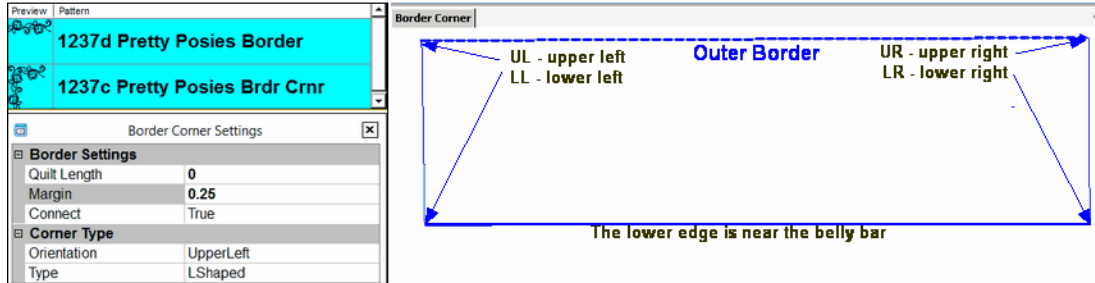
1. Highlight the corner pattern first. Press & hold Ctrl key while selecting the border pattern. Pattern Details for the border pattern are displayed in the Properties box.



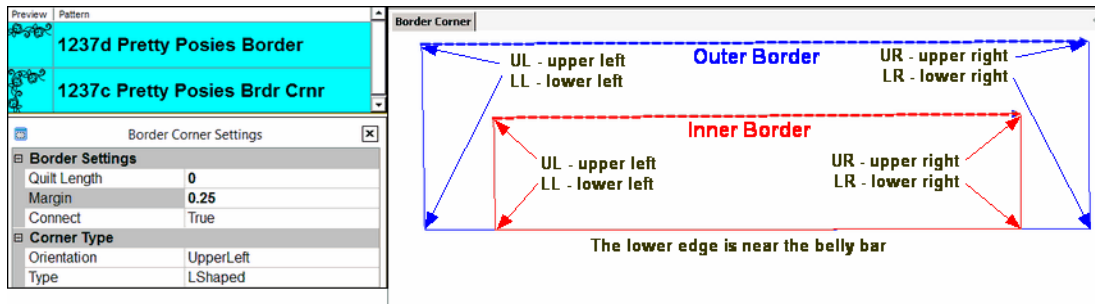
Click on the Corner pattern first. Press and hold the Ctrl key and click on the Border pattern next.

2. Click on the [Border_Corner icon](#) 
 CS prompts for the border boundaries:

Click Outer border first (UL, UR, LR, LL corners).

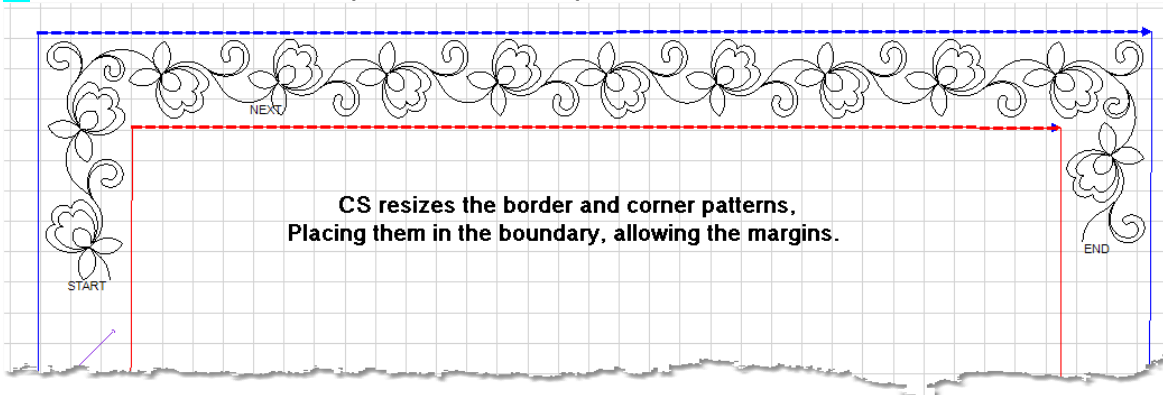


Click Inner border next (UL, UR, LR, LL corners).

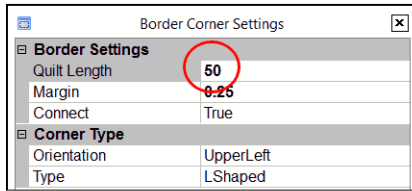


3. Edit the Border Corner settings, choosing the type and orientation that best fits the corner pattern.

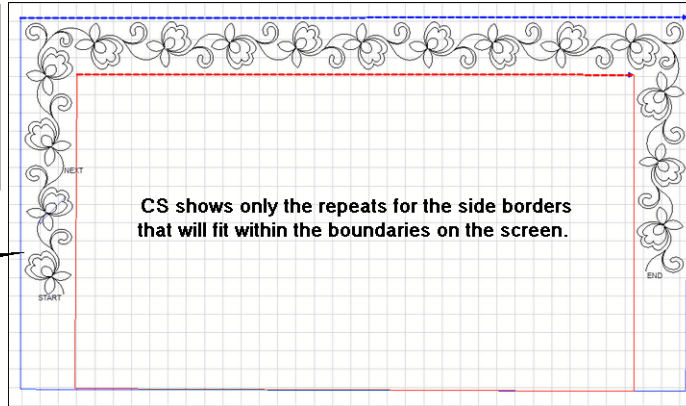
4. CS moves the corner pattern into the preview area.



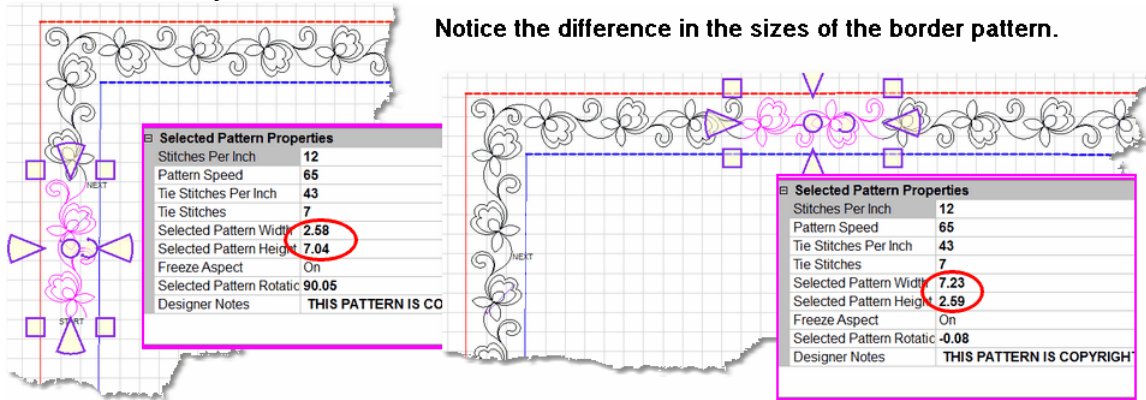
5. When CS knows what the quilt length is, the size of the side patterns can be calculated, and patterns placed. Plus, CS knows the proper stitching sequence to minimize the number of starts and stops.




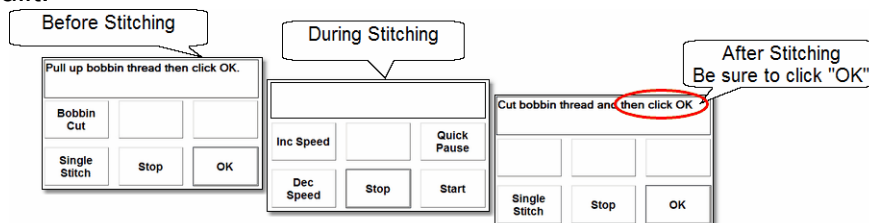
When CS is given the Quilt Length, it can add side patterns.



It is a good idea to write down the actual size of the border patterns across the top and along the sides. In this example there is a difference of almost 1/4". If the side borders were stitched using the measurements from the top border, the side borders could be 'off' by several inches.



5. Click on Start_Quilting  and the sewing head will move to the Start of the first pattern. CS will prompt for pulling up the bobbin thread and choosing OK when ready to quilt.



At the end of the quilting sequence, you will be prompted to pull up the bobbin thread. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

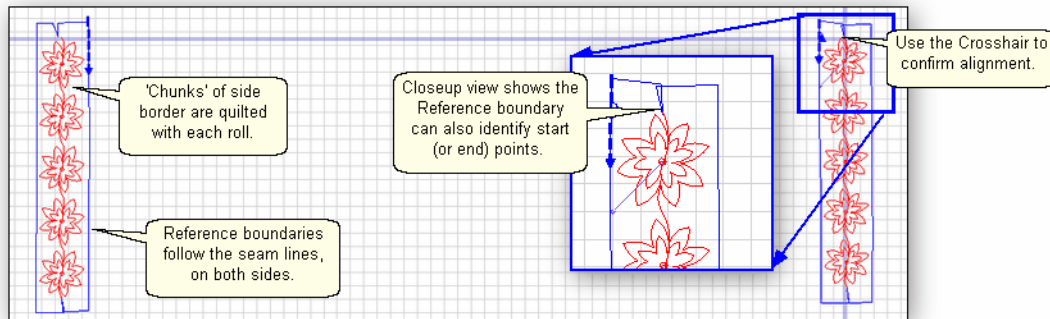
The Border Corner process is repeated at the bottom edge. CS will know from the boundaries that it is the bottom edge and will position the corners properly.

4.4.2 Side Borders

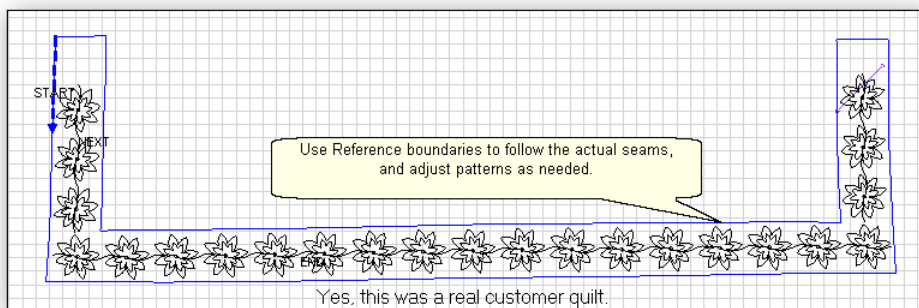
Border patterns that are large, open or non-symmetrical can usually be done while the body of the quilt is being done. A section (or chunk) of both side borders is stitched every time the quilt top is rolled. This is the most expedient method of doing the borders and it works well on most quilts, *if the size of the side border patterns is accurate.*

Tip: The Border Corner feature calculates the border pattern sizes for you. Just be sure to use the size from one of the patterns along the side of the quilt, not the top or bottom.

Essentially, the top border and corners are done first, the quilt is rolled, and sections of the borders are done, using reference boundaries to mark the border areas and to help align the new patterns with the previously quilted patterns.



It is wise to include some side border pieces even when doing the bottom border. As you can see from the picture, not all quilts are square or straight, and positioning corners is easier if side border pieces are included.

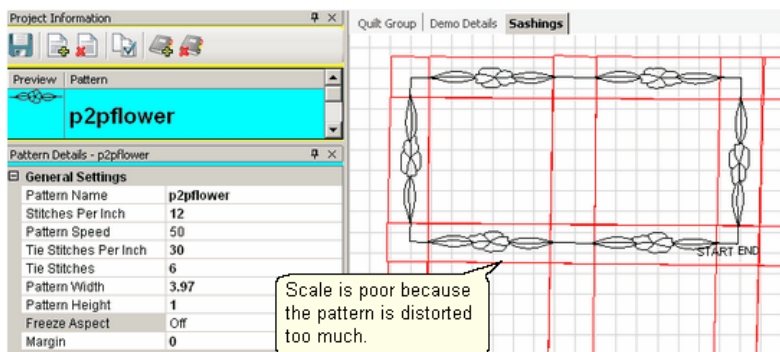


Border patterns that are very detailed or contain pattern segments that are backtracked (double stitched) might look better if the quilt is reloaded sideways. This is a personal preference. Patterns that are very complicated or detailed (cables or feathers are good examples) don't hide size variations well, so do the main part of the quilt first (including the four corners, top and bottom borders) and turn the quilt.

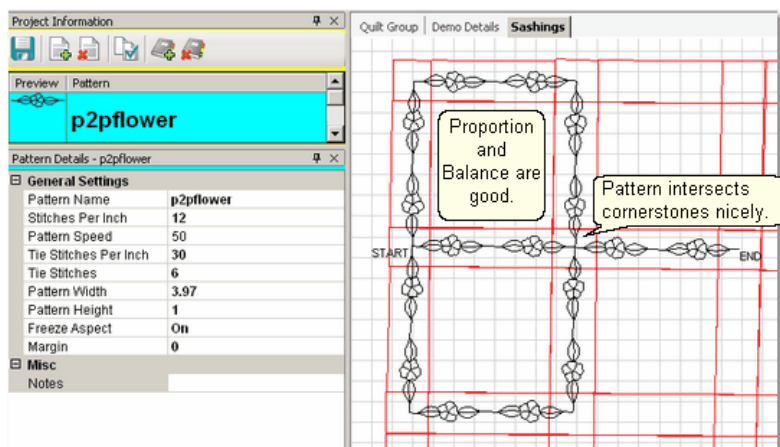
Turning the Quilt

When it is really important to get the perfect fit, turning the quilt to do the side borders makes sense. The four corners and top borders are done when the body of the quilt top is being quilted. Be sure to baste the side edges of the borders as you roll the quilt. Securing the [border seams with SID](#)¹⁷⁰ is often a good idea too because

patterns, by choosing one, then holding the control key down while choosing more. Prep Step #3. Change [pattern details](#)⁵² if needed. Be aware of the pattern size, proportion and any margins. Measure the size of the sashing strips and choose a pattern size that fills the space but stays contained in the sashing. Use the Preview area to audition the size and placement of the patterns if desired.

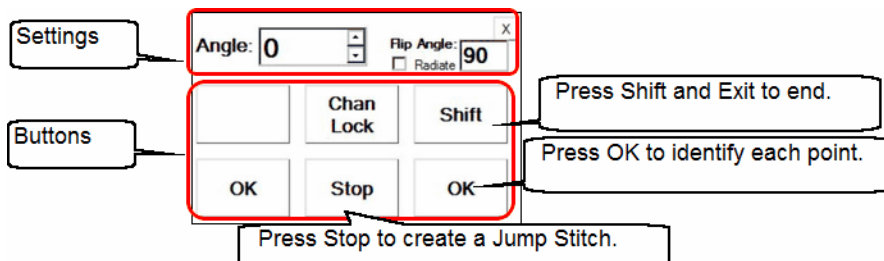


Prep Step #4. Plan the 'Point Layout' before beginning. Most patterns look the best when they maintain their original proportion (Freeze aspect= On), but this means you need to have P2P intervals that also allow the pattern to fill the space. Other patterns need to have one consistent dimension even if the other varies (Freeze Aspect=Off). For example, a pattern being stitched inside a sashing area should have one of the dimensions fixed so it doesn't stitch outside of the sashing.



Steps to follow:

1. Click on the P2P icon



A dialog box appears with Settings and Buttons:

Settings:

Angle: This is the current angle that will be used when Channel Lock is turned on.

Flip Angle: This is intended to be used with the channel lock feature. It will either replace the current angle, or add to it, depending on the 'Radiate' setting. If Radiate is not checked, this angle will replace the current angle, otherwise it adds to it.

Radiate - Works with Flip Angle for creating radiating line designs.

Buttons: There are 6 buttons shown on the screen, which correspond to the 6-button keypad on the sewing head. Additional options are accessible using the Shift button.

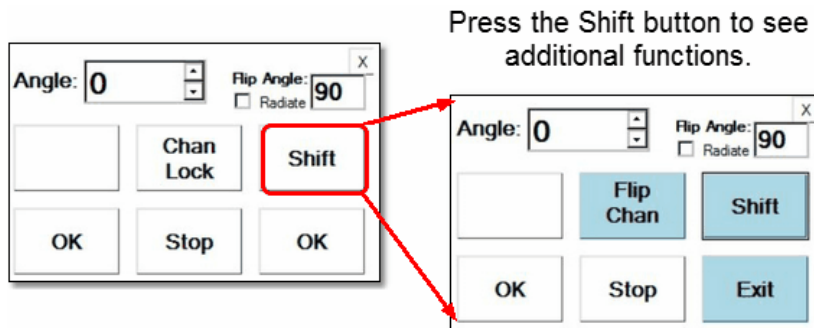
A **Two Button Selection Sequence** will display additional options. If using the touchscreen, just touch the Shift key, and the additional buttons appear as light blue buttons, so touch the blue button you need. If the second (blue) button is not pressed in a few seconds, it will revert back to its original purpose. If using the keypad on the sewing head, press and hold the upper right button (Shift) while pressing the second button. When you release the Shift button, the others will revert back to the original purpose.

Chan Lock - locks the head so it moves along one fixed angle.

Shift: Will display additional functions (see below).

OK (either button) identifies the points.

Stop indicates the end of the P2P-pattern sequence. If more points are clicked after pressing Stop, they will be detached from the first segment by a 'jump stitch'. This is like turning the needle off, and moving to the next click to resume.

Additional Functions:

Pressing the shift button will display additional functions (light blue buttons). These can be initiated by using a 2-button sequence.

Flip Chan Lock - Changes the current angle.

* This is intended to be used with the channel lock feature. If Radiate is not checked, the Flip angle will replace the current angle. To flip the angle using the keypad, press and hold the shift button and press the Flip Chan button. If using the touchscreen press the Shift button first, then press the Flip Chan button. To flip it back again, repeat the 2-button sequence.

* If Radiating Lines is checked, CS increases the current angle by the number of degrees shown in Flip Angle. To increase the angle using the keypad, press and hold the shift button, and press the Flip Chan button. If using the touchscreen press the Shift button first, then press the Flip Chan button. Repeat this 2-button

sequence to increase it again. It will go up to 90 degrees and return back to 0 degrees.

Exit - To exit P2P mode, press the Shift button and press the Exit button. Using the mouse and clicking the "X" in the upper right corner works too.

2. Press OK to define the path. Move the machine head from one point to the next, pressing OK on each one. The machine makes a popping sound every time the OK button is pressed. This sound confirms that the point has been registered.


Tip: Using the laser light to help identify the P2P points is very helpful but if the light is not positioned properly, it can be deceiving. Each click is registering the position of the needle, not where the light is shining.

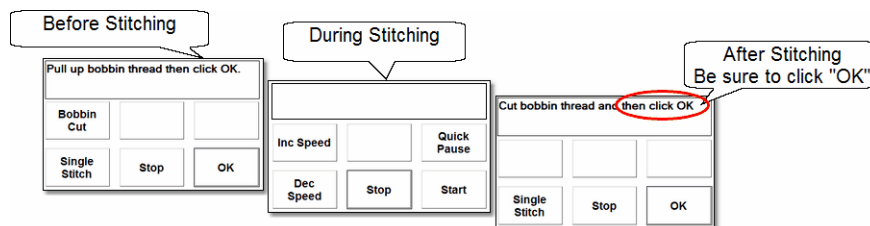
3. Press 'Shift' and 'Exit' to complete the P2P setup process.

* P2P isn't stitched immediately - it shows up on the screen first.

Tip: Each P2P pattern is considered an individual pattern and can be modified if needed. Just click on the pattern to select it (pink) and use the resizing handles to change it.

When done, [Save the project](#)⁶⁷.

4. Click on Start_Quilting  and the sewing head will move to the Start of the pattern. CS will prompt for pulling up the bobbin thread. Press OK when ready to quilt.



At the end of the quilting sequence, you will be prompted to pull up the bobbin thread and click OK. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

When the patterns are all stitched, the screen will display them with red lines instead of black. This is a visual reminder that they are tagged as having been sewn already.

[Quick Reference P2P Pattern](#)²⁵⁴

4.5 Phase 4 - Backgrounds

A Pantograph pattern is a very simple form of background quilting. The pattern is stitched both across (multiple repeats) and down (multiple rows) the area. For custom quilting, background fillers are frequently used. This is dense quilting around an applique or quilted motif. The filler compresses the background allowing the applique or motif to be framed and highlighted.

CS has two methods for for doing pantographs;

* [Edge-to-Edge](#)^[200] is a simple method for pantographs. CS maintains control during most of this process.

* [Repeat Patterns](#)^[212] is a different method for pantographs, which allows other design options to be performed simultaneously. The quilter maintains control during this process.

CS has two methods for doing background fillers;

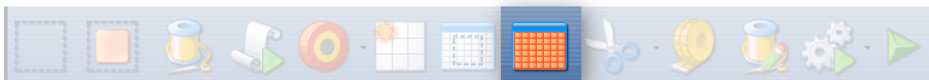
* [Trim](#)^[221] (inside or outside) uses special boundaries that are excluded from the background filler. The pattern will stitch up to the trim boundary and stop, do a Jump stitch over the trim boundary, and resume stitching once past the trim boundary. At every Jump Stitch, there are either tie-off stitches, or the quilter hand ties the threads and buries them with a needle. This method might be the best choice for quilts that will not get much use/abuse.

* [Fill](#)^[225] (inside or outside) uses standard boundaries to define the space. The background patterns are actually modified to stitch up to the boundary, and stitch along the edge of the boundary until it can reconnect with the background pattern and then resumes stitching. The Fill method produces a stronger stitch line because it does not have jump stitches, so it does not start and stop, and does not do tie-off stitches.

4.5.1 E2E (Edge_To_Edge)Pantographs

Edge To Edge pantographs are continuous line designs stitched repeatedly across the quilt. Many pantographs span the entire quilt but they can also be confined to an inside area or even a border.

CS has an automated method of working with E2E patterns, which is explained here. It allows CS to manage the 'details' automatically. CS will create a new quilt group and it restricts the use of certain features. For people who need to control the process because they need to use some of the pattern manipulation features of CS, there is a second method called E2E Repeat, which is explained in the next section.



Feature: Edge to Edge (E2E) Automatic

Assumptions: The machine is threaded, bobbins wound, belts engaged and patterns have been added to the project.

Prep Step #1.) Measure the quilt length and width accurately before loading the quilt. If you are leaving a margin at the top and bottom, be sure to reduce your total

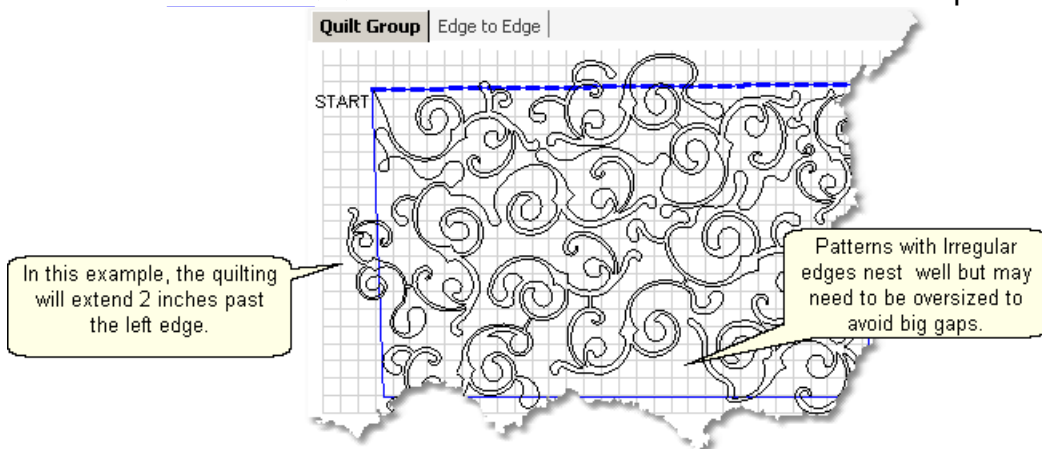
quilt length by this amount. Also it is a good idea to reduce the length a little to accommodate shrinkage caused by the quilting. This could be from 1% to 5%, depending on the fabrics, batting and quilting density.

Prep Step #2) Load the quilt and baste the outer edges.

Prep Step #3) Choose a pattern and think about the scale. Large scale, open quilting results in a more supple quilt and small scale, dense quilting is a bit stiffer.

Prep Step #4) Change the pattern details (height and width) to reflect the scale you prefer.

Pantograph patterns with irregular outer edges are designed to nest together. This often puts gaps at the edges. If needed, plan on oversizing the first E2E boundary so the quilting extends past the edges of the quilt to eliminate gaps. Use the Trim function or [Draw Trim](#) as needed to remove the excess on the top and sides.

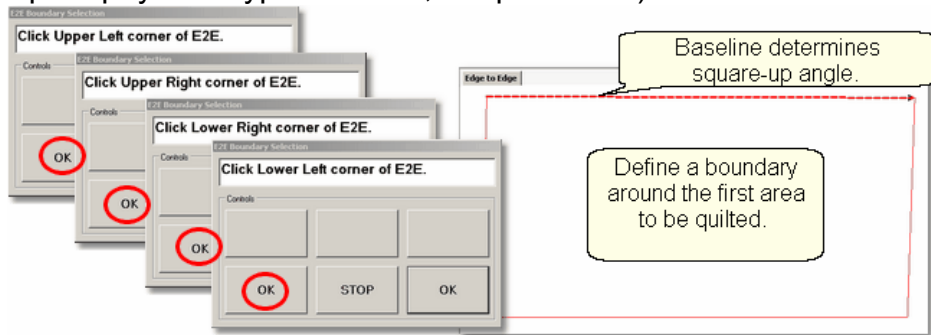


Tip: Use the grid to determine how much a pattern needs to extend beyond the quilt edges.

Steps to follow:

1. Click the E2E icon.

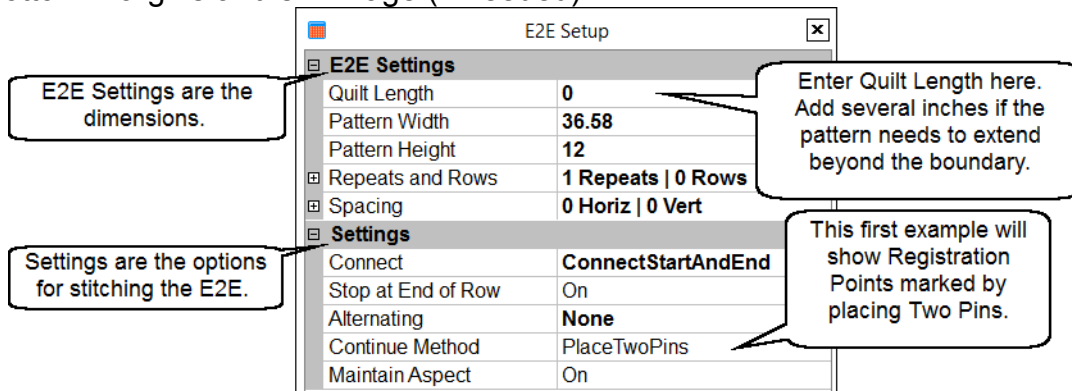
CS prompts you to click the four corners of the first boundary. Make this as large as possible to minimize the number of times the quilt must be rolled. CS also will create a new Quilt Group named Edge to Edge. (If this quilt group name is already taken, it will prompt you to type in a new, unique name.)



The first two clicks define the baseline, just like the boundary of a block. If there is any slope in this baseline, the patterns will be rotated according. This is called the Square-up Angle.

Tip: When basting the top edge of the quilt, use the Horizontal Channel Lock to keep the baste line perfectly straight and square. Then, use this as a guide for the E2E baseline (first two clicks).

2. Enter the quilt length in the E2E Settings area. Increase the actual measurement if the pattern will be stitching off the top & bottom edges of the quilt (or will be trimmed to fit). Decrease the actual measurement to adjust for top and bottom margins and shrinkage (if needed).



CS measured the width in step 1, and gets the length from the Primary Settings. It now has enough information to automatically calculate the number of repeats and rows required. This is just a suggestion! All settings can be changed in Setup mode (but not in Edit mode).

3. Check the E2E Setup Details -


Size Settings ^[58]:

- * Pattern Width and Pattern Height may be different from what you started with because CS may need to adjust each individual pattern size to accommodate the total measurements.
- * Repeats and Rows have been set but can be changed if you do it in the setup mode (which means don't close the E2E Setup box until you are sure adjustments are done).
- * Spacing refers to the amount of space between patterns, both horizontally and vertically. Negative numbers reduce the space between patterns (rows or repeats) and positive numbers increase it.

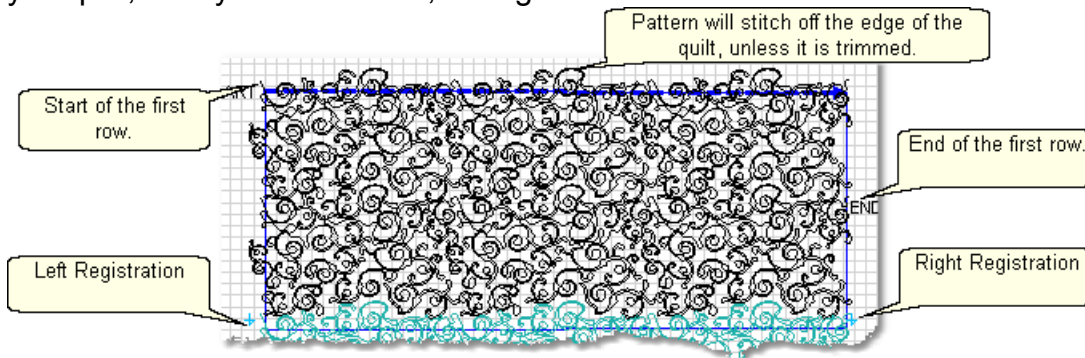
Settings ^[58]:

- * Connect describes what you want CS to do between blocks.
 - Connect Start And End is preferred for pantographs. This connects the start of one pattern to the end of the previous pattern.
 - Bobbin Pullup is used if each repeat is a separate block pattern. CS automatically switches to Bobbin Pullup if the repeated patterns are not connected.
- * Stop at End of Row – allows continuous stitching.
 - OFF means it will advance automatically to the next row, if there is room. It will stitch the first row, do tieoffs (if needed) and automatically move to the next row. If you choose this option, be sure to uncheck "Bobbin Stitch" in the Controller Def.
 - ON means it will stop and wait for the thread to be cut after each row. Normally this is set to "ON", so CS does stop and prompt for the bobbin thread to be cut.

- * Alternating – allows staggered rows. Examples are included in the next section.
 - None means don't stagger the rows.
 - Plus Row On Top means one extra repeat will be added to the first row and every other row.
 - Minus Row On Top means one repeat is taken away from the first row and every other row.
- * Continue Method refers to the method of spacing the rows properly every time the quilt is rolled. There are three choices:
 - Place Two Pins means CS will pick the registration points and you need to mark them (with pins or a marker).
 - Use Start Point and End Point means CS will use the start and end point of the previous row as the registration points.
 - EndOfSet means CS will use the last stitch of the previous row as the registration point. This is the easiest, so it is the default choice.
- * Maintain Aspect means CS will try to keep the adjusted pattern ratio (length:height) the same as the original pattern. This can't always be done however because the pattern dimensions may not share common factors with the quilt dimensions. For quilters who 'don't do math', this just means it won't fit without a little stretching.

 **Tip:** When using "Start Point and End Point" or "End of Set" be sure the last stitch of the pattern is at the bottom of the pattern so it is accessible after rolling the quilt.

4. Look at the image in the preview area. WYSIWYQ - What you see is what you quilt, so if you don't like it, change it now.



The top edge is the baseline, shown as a thick, dashed line on the screen. The pattern in this example has irregular edges which make it nest nicely, but would leave big gaps in the first row if it is not adjusted. CS will not place patterns above the baseline, so the quilter needs to make the adjustments (shown above) and shift all the patterns up to close the gaps. Make sure to add the extra space to the "Quilt Length" dimension.

Now however, the pattern will stitch off of the edges when positioned to eliminate the gaps. Use the Trim-Inside function to trim off the excess (that would stitch off the edge of the quilt) using the machine head ([Trim Icon](#)^[38]) or the mouse ([Draw Trim](#)^[151]).

Pattern colors indicate the sewing status.

- **Red** means the pattern has already been sewn.
- **Black** means the patterns have not been sewn.


- **Teal green** means the patterns won't fit in the current quilting space so CS can't quilt them yet.

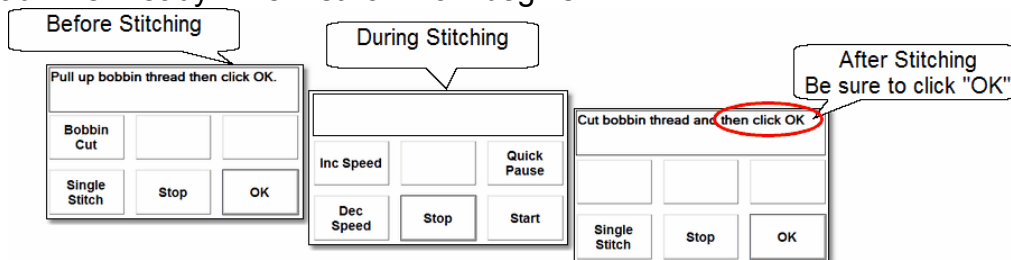
As mentioned, adjusting patterns that nest should be done before any quilting begins. Just select all the patterns at once (Select All icon) and reposition as needed. If adjustments are needed after the first rows have been completed, the non-quilted patterns need to be selected together. This can be done by holding down the Ctrl key and clicking on each pattern that needs to be adjusted or selecting a group of them with the [Click-and-Drag method](#)⁸⁸.

Trimming patterns is normally done before any quilting begins. Trim is one of the features that does work when doing an E2E automatic using this method. Several other features will be grayed out on the menu bar (Fill, Draw Sewable, etc) because those features interfere with controlling the stitching details with E2E automatic. When these extra features are needed, use E2E - Repeat Pattern method, explained next.

When it looks good, [Save the project](#)⁶⁷.



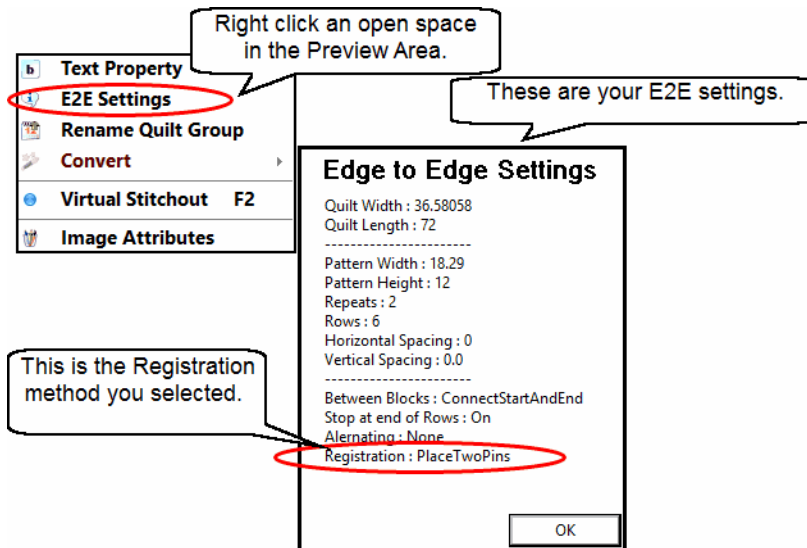
5. Click Quilt  The machine moves to the start of the first pattern, takes a single stitch and prompts you to pull up the bobbin, so do that. Press OK on the keypad when ready. The first row now begins.



6. At the end of the row, If CS stops and prompts you to cut the bobbin thread, do it. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it allows CS to continue.

6A. IF you have room for another row (and if Stop at End of Row = ON) *the machine will move to the beginning of the next row, take a stitch, prompt for Bobbin pull-up and click OK to quilt the next row. Repeat these steps until all the rows for the current section are complete.*

When CS finishes the last row that fits, you will be prompted to cut the bobbin thread. The continuation process varies, depending on the Registration chosen. If you don't recall which method was used, Right Click an open space on the Preview Area.



7. Follow one of the steps listed below.

7a. Registration: End Of Set:

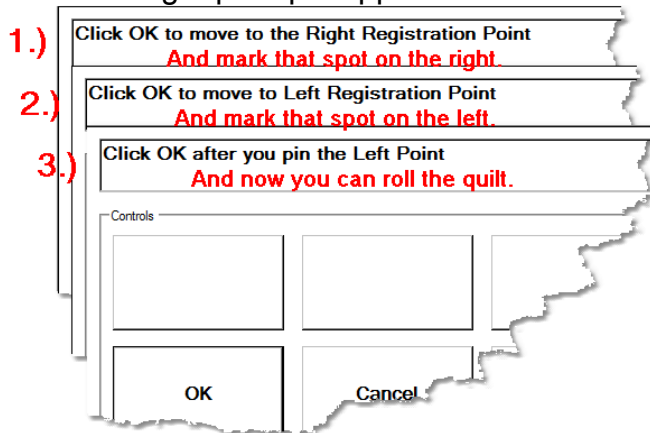
* CS prompts you to Pull up bobbin thread, and Click OK to complete stitching.

There are no additional prompts because this method uses the endpoint of the last row completed.

7b. Registration: Place Two Pins:

* CS prompts you to Pull up bobbin thread, and Click OK.

Then, the following 3 prompts appear:



- 1) CS prompts you to click OK when ready to mark the Right registration point.
 When you do, the stitcher moves to the first registration point.
 Place a pin in Registration Point #1 (where the needle would enter the fabric).
- 2) CS prompts you to click OK to move to the second registration point.
 When you do, the stitcher moves to the second registration point.
 Place a pin in Registration Point #2 (where the needle would enter the fabric).
- 3) Click OK to complete the process.
 Now go to step 8 and roll the quilt.

7c. Registration: Use Start and End:

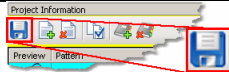
* CS prompts you to Pull up bobbin thread, and Click OK to complete stitching.

There are no additional prompts because this method uses the startpoint and endpoint of the last row completed as the two registration points.

8. Roll the quilt (baste the sides, check the bobbin, etc.) It is also a good idea to check that the quilt is still square. Use the channel lock to check that both registration marks are on the same horizontal line.

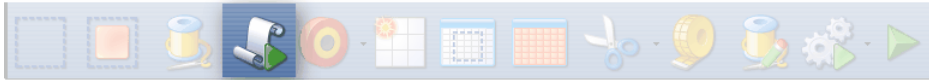
Tip: When rolling the quilt top, leave extra space above the registration points if your patterns are nested. The space between the pickup roller and the registration points is used when patterns are nested, so be sure there is enough room.

[Save the project](#)  67.



Now finish the quilt by using the Feature: Edge To Edge Continue

Feature: Edge To Edge - Continue



Edge-To-Edge Continue is a special feature that aligns pantograph rows together properly after the quilt has been rolled.

Assumptions:

This assumes the first section (or more) is done, the registration points have been marked and the quilt has been rolled.

9. Click EdgeToEdge_Continue 

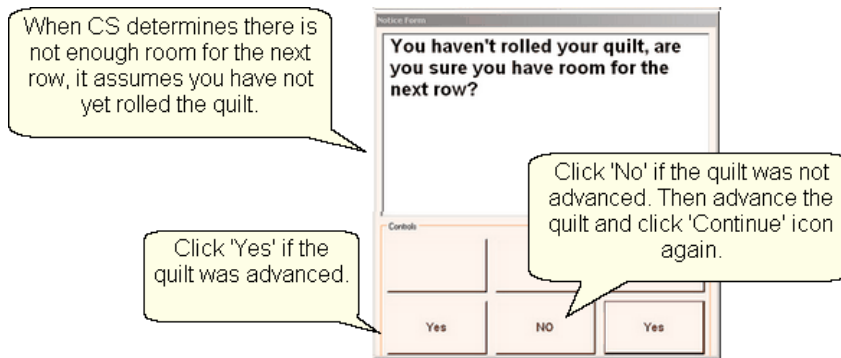
The process for marking the boundary varies, depending on registration marks.

10a. If you chose Registration = End Of Set:

* CS verifies that you have rolled the quilt and have the machine positioned over the last stitch of the last row completed. This is the EndOfSet point.



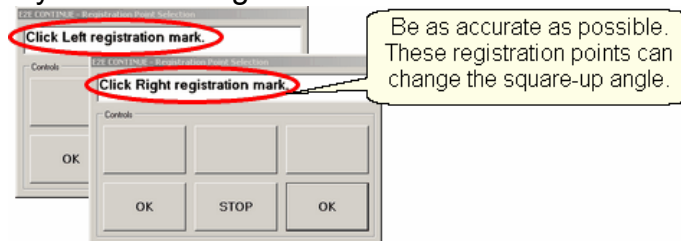
CS can tell how much the quilt has been rolled because it knows the XY coordinates of the current machine head position, and it knows the XY coordinates of the endpoint of the last pattern sewn. If the quilt has not been rolled enough, you will get a warning message:



One nice feature about End of Set Continue is that the 'continue' process can be run as many times as needed to get the patterns advanced as needed.

Continue to Step 11.

10b. If you chose Registration = Place Two Pins:



- * CS prompts for left registration mark. Move the machine head to the Left registration point & Press OK.
- * CS prompts for right registration mark. Move the machine head to the Right registration point & Press OK.

CS remembers where the lower edge was so you don't need to click those points.
 Note: By using two registration points, CS can determine if there is any change in the pattern square-up angle, and adjust the remaining patterns accordingly.

Continue to Step 11

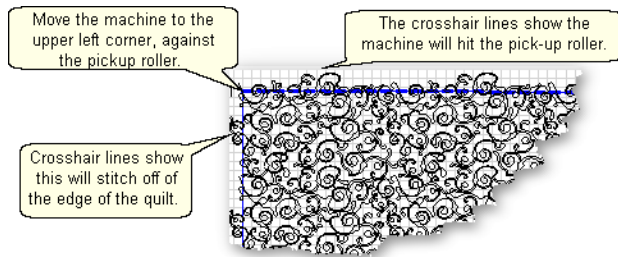
10c. If you chose Registration = Use Startpoint and Endpoint.



- * CS prompts for left registration mark which is the Startpoint.
 Move the machine head to the first stitch of the previous row & Press OK.
 - * CS prompts for right registration mark which is the Endpoint.
 Move the machine head to the last stitch of the previous row & Press OK.
- CS remembers where the lower edge was so you don't need to click those points.
 Note: Be careful to click on the last stitch of the pattern. If extra single stitches were manually done at the end of the row, they don't count.

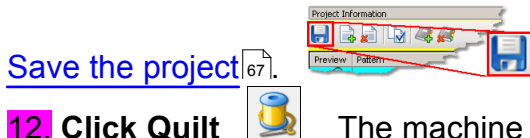
11. Use the crosshair and do the following checks:

1. Move the machine head back as far as it will go (against the pick-up roller). Now look at the screen. Do any of the black patterns extend above the crosshair line? If so, use the 'Edit / Undo' command (Ctrl+z) to backup prior to clicking E2E Continue. By doing this, you can roll back the quilt so it is positioned properly, and start back at step 9.



2. Check the other three edges of the quilting space. Move the machine head to the left margin, the right margin and forward to the belly bar. Check the screen, comparing the (black) pattern position and the crosshair line. If the pattern lines extend past the crosshair, the pattern can be trimmed or resized. If you allow the pattern to stitch off the edge of the quilt, be sure to secure the sides of the quilt so the hopping foot does not get caught by the edge of the fabric.

WYSIWYQ - What you see is what you quilt, so be sure you like it.



12. Click Quilt The machine moves to the start of the pattern, takes a single stitch and prompts you to pull up the bobbin, so do that. Press OK on the keypad when ready. The first row of the new section now begins.

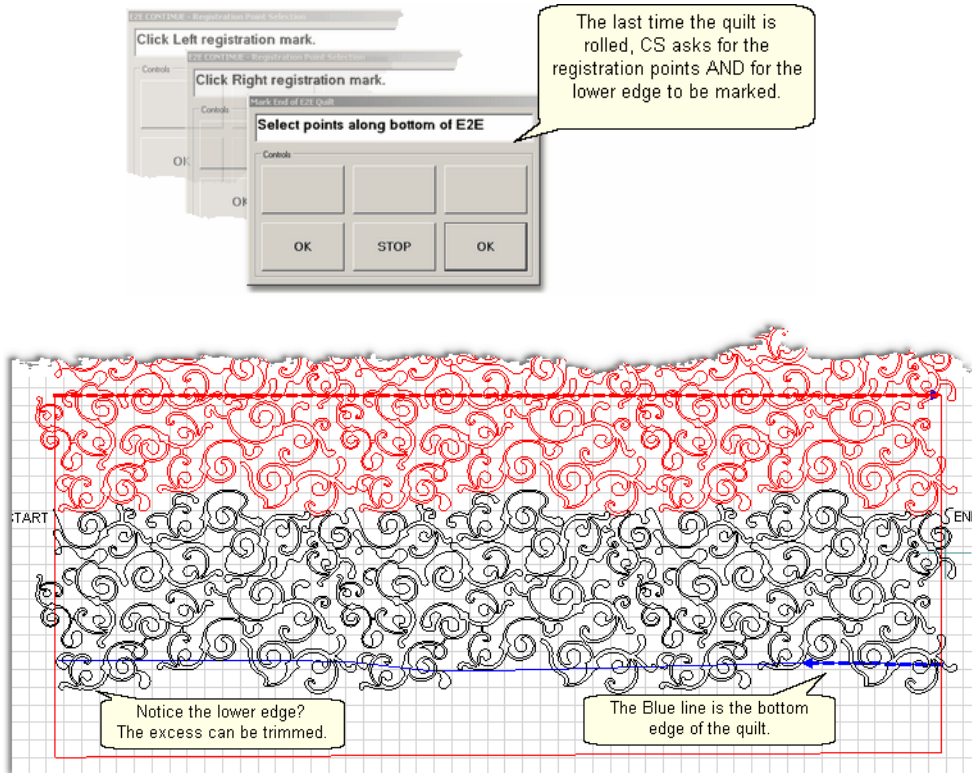
13. At the end of the row, CS normally stops and prompts you to cut the bobbin thread and click OK (unless you have chosen not to stop at the end of each row).

IF you have room for another row, The machine moves to the beginning of the next row and begins again. Continue quilting until the entire current section is done.

14. When done with the last row that will fit the current area, CS will again prompt for marking registration points. Repeat steps #7 - #14 until the last section - when bottom edge of the quilt makes its way up to the current quiltable space.

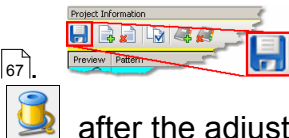
15. Last Section adjustments are often necessary so the last time you roll the quilt and press continue, the prompts are a little different.


- * Press Continue.
- * Click the Left registration mark as prompted.
- * Click the Right registration mark as prompted.
- * Select points along bottom of E2E. This means click along the bottom edge of the quilt, following the actual contour of the quilt, even if the bottom edge is irregular.
- * Press 'Stop' button when done with the bottom edge. This created a boundary along the bottom edge and is displayed on the screen.
- * If the pattern needs to be adjusted or trimmed, now is the time to do it.



Tip: If you notice that the bottom corners of the quilt flare out or pull in, you can include the sides when you 'Select points along bottom of E2E". Just be sure that the 2 registration marks are clicked first, and then it doesn't matter how many other points are clicked. Press 'Stop' when done. Adjust or trim the side patterns if needed.

Save the project



16. Click Quilt  after the adjustments are made for the last row. Press OK on the keypad when ready.

17. At the end of the last row, CS stops and prompts you to cut the bobbin thread and click OK.

When something goes wrong - The E2E feature needs to have the steps executed in the correct order. Fortunately CS keeps a sequential list of the executed steps in a 'stack'. By using the Edit / Undo command (Ctl+Z), you can actually backup in the stack of executed steps, often to a point where you can correct a user error, and continue quilting without interruption. This does not help if the quilt has been rolled however.

The two most common mistakes are made when rolling the quilt.

1. The quilt is up too far and the machine hits the pick-up roller causing an 'Abort Due To Obstacle' error. When this happens, the quilt must be repositioned and the project origin must be relocated, to synchronize the quilt and the CAD screen. There is a good explanation of this in the Relocate Patterns section of this manual.

2. The quilt is rolled before the registration points are marked. When this happens, the quilt and the screen become out of synch.

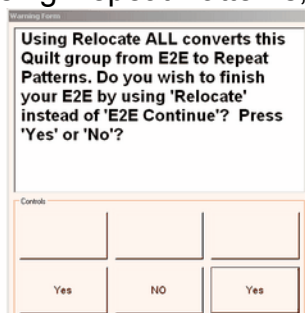
* Roll the quilt back to its previous position.

* Verify the position using the crosshair. To do this, move the machine head until the crosshair on the screen is positioned at the last stitch sewn as shown on the screen. Now adjust the quilt until the needle is directly over the last stitch sewn on the quilt.

* [Restart](#)^[228] the last pattern of the last row, about 2-3 stitches from the end. This will force CS to go through the process of identifying the registration points again, and then the quilt can be rolled normally.

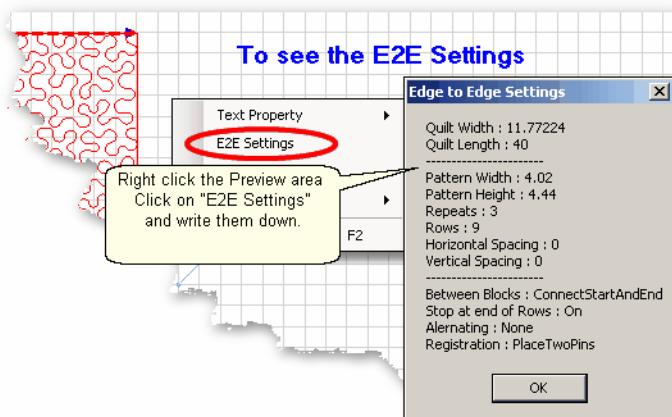
If this doesn't work, use the Relocate function to realign the screen with the quilt. Relocating the Project Origin (or Relocate ALL to 1 or 2 points) will force the process to be changed to E2E using Repeat Patterns, not the standard E2E.

Pantographs can be done using E2E or using Repeat Patterns.



When using E2E-Repeat, you can select all the patterns in one row, and export them as a .csq file. This newly created pattern appears in your pattern list, and you can use it as many times as needed to finish your quilt. You will need to draw a boundary around the last completed row, being sure to follow the contour of the bottom edge. Using that boundary as a guide, place the new .csq patterns on the screen, and position them together manually. If the newly created patterns extend past the bottom edge of your quilt you can use the Trim function, or the Fill Inside function to avoid stitching off the bottom edge of the quilt.

When all else fails - On occasion it seems easier to start over than to try and figure out what happened, and take steps to correct it. When that happens, you can recreate the E2E process, but you need to know a few measurements, in order to match the pattern size. To [recall the E2E Automatic](#)^[142] settings right click an open space on the preview area.



Now you have enough information to start a new E2E Quilt group. Some people prefer to begin back at the first row, and others prefer to begin in the middle, pretending that a middle row is actually the top of the quilt. If you choose to do this, be sure to adjust the quilt length accordingly. Also be sure to verify the pattern placement by using the Crosshairs. This will enable you to move the machine to various positions on the quilt top, and then see if the crosshair on the screen is at the same spot.

[Quick Reference E2E](#) 

4.5.2 E2E Repeat Pattern Pantographs

Background patterns (pantographs) can be stitched using the Repeat Pattern features. The benefit is that Repeat Pattern is a more flexible feature, allowing additional boundaries and patterns to be placed in the quilt group along with the background pattern. The nice feature about E2E is the way CS controls the sizing and repositioning of the patterns automatically when the quilt is rolled. With Repeat Patterns, you do this yourself using [Relocate](#)¹³³ explained in the next section.



Feature: Repeat_Patterns for Pantographs

Assumptions: The machine is threaded, bobbins wound, belts engaged and patterns have been added to the project.

Prep Step #1.) Measure the quilt length and width accurately before loading the quilt.

Note: There are three reasons to modify the total quilt length and width.

1. If you are leaving a margin at the top and bottom, be sure to reduce your total quilt length by this amount.
2. If your pattern is deeply nested, you may need to increase the total quilt length to allow the irregular edges to be trimmed off the top and bottom.
3. It is a good idea to reduce the length a little to accommodate shrinkage caused by the quilting. This could be from 1% to 5%, depending on the fabrics, batting and quilting density.

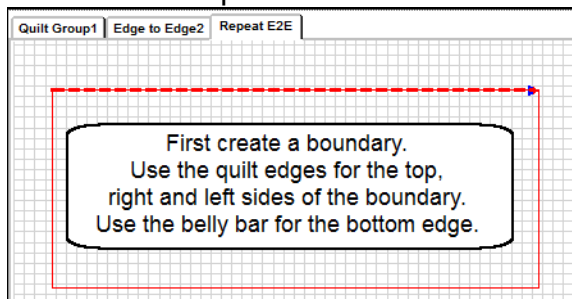
Prep Step #2) Load the quilt and baste the outer edges.

Prep Step #3) Choose a pattern and consider the scale. Large scale, open quilting results in a more supple quilt and small scale, dense quilting is a bit stiffer.

Prep Step #4) Change the pattern details (height and width) to reflect the scale you prefer.

Steps to follow:

1. Click Boundary icon and click on the UL, UR, LR, LL corners. Like E2E, this shows how much area can be quilted at one time.



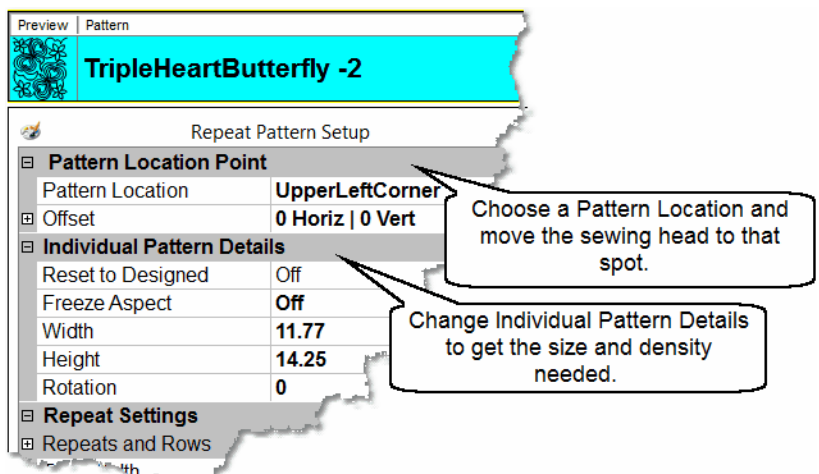
2. Click on Repeat_Patterns icon 

3. Change the Repeat Settings as needed.

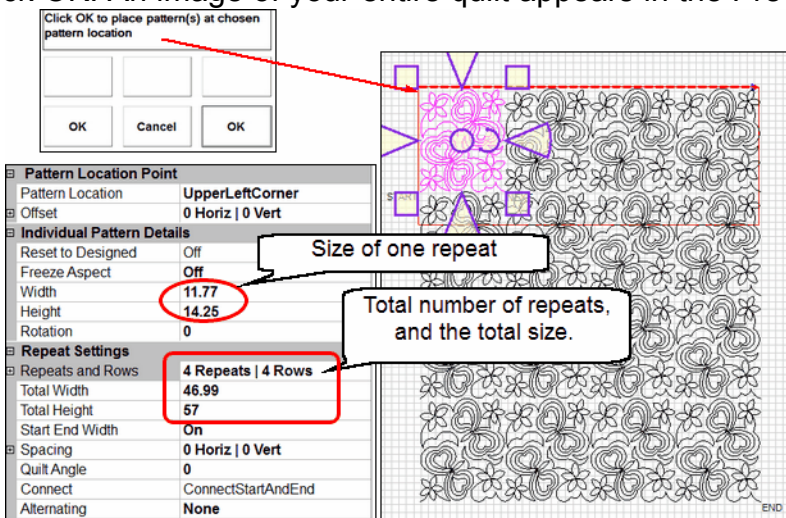
Typical steps would be:

- * Turn Freeze Aspect=On
- * Enter Total Width (=47 in this example)
- * Turn Freeze Aspect=Off
- * Enter Total Height (=57 in this example)

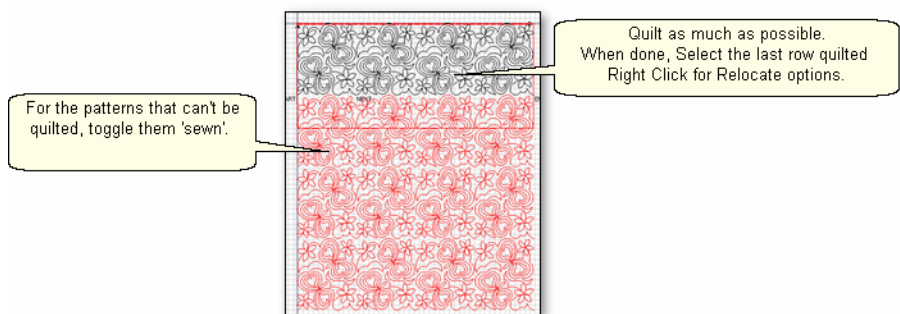
- * Set Pattern Location Point = Upper Left Corner
- * Move machine to the "Pattern Location" (Upper Left Corner in this example)



4. Click OK. An image of your entire quilt appears in the Preview area.



5. This method for doing pantographs does not monitor how much area can be quilted at one time, so you need to do it by toggling rows of patterns as sewn or unsewn. Select all the patterns that can't be quilted in the first section, toggle them sewn.



6. Quilt as much as possible, using the methods described in previous sections. E2E

Repeat allows you to use any of the special features you need - Trim, Fill, Combine, Divide, Draw Sewable, etc.

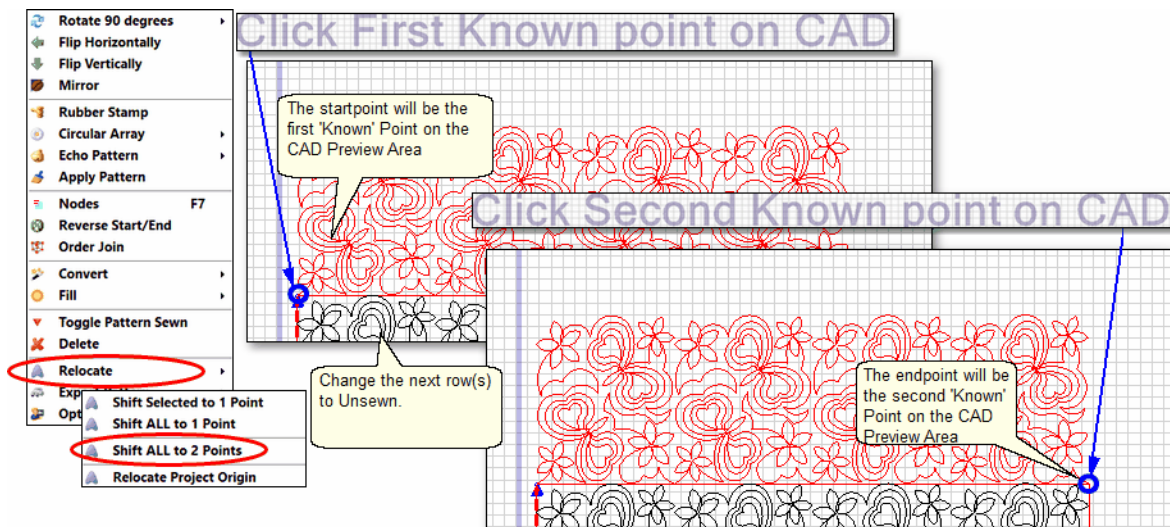
Roll the quilt.

4.5.2.1 E2E Repeat Relocate

Relocate is needed to synchronize the quilt and the sewing head after rolling the quilt. There are four methods for relocating, and Relocate - Shift All to 2 Points is shown here.

Think about which two points are easily identifiable on both the Preview area of the computer screen, and on the quilt top. These will be your control points which are used to synchronize the computer screen with the quilt top. The start and end points of the last row quilted often are the best choices (and they will be used in this example), but it could be any two points that you like. Choose points that are easy to see and click on precisely. A sharp point is a good choice - a point along a gradual curve is not.

1. Highlight the next row(s) and toggle them as 'Unsewn'. They will turn black.
2. Highlight any pattern on the screen and Right Click.
3. Choose "Relocate" and Choose "Shift All to 2 Points".
- Follow the Instructions that appear on the screen:



4. Follow the Instructions on the screen telling you to click on the corresponding points on the quilt. These two points will be close to the pickup roller because you have rolled the quilt.

When the screen says this:

Click 'Yes' when machine head is at the **FIRST** point on the QUILT, 'No' to cancel

You do this:

Move the machine head to the first known point (in this case the startpoint) and click Yes.

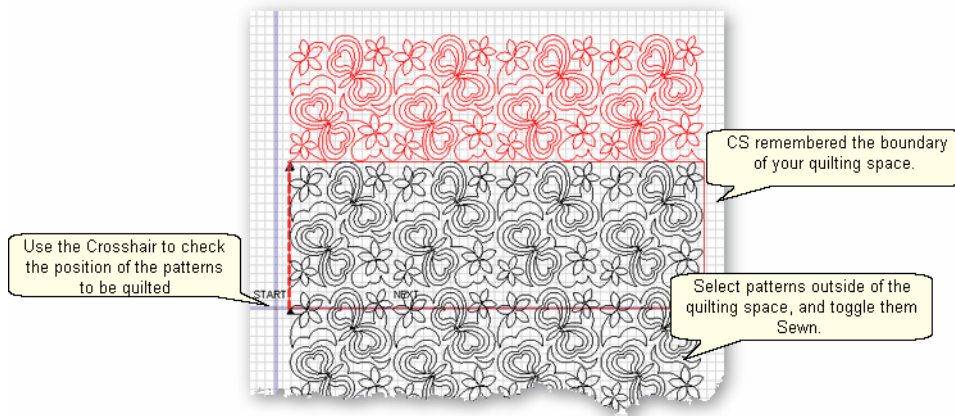
When the screen says this:

Click 'Yes' when machine head is at the **SECOND** point on the QUILT, 'No' to cancel

You do this:

Move the machine head to the second known point (in this case the endpoint) and click Yes.

5. Check the positioning by using the machine crosshairs.



6. Continue until the entire quilt is done.

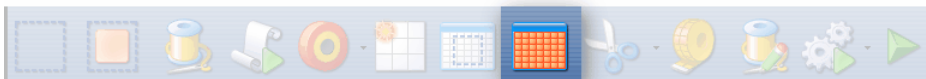
The last row may need some adjustments. Check this by drawing a boundary around the last row, paying close attention to the bottom edge of the quilt. Use any/all tools to adjust the patterns to fit inside the boundary. If this would distort the design, a [trim](#)¹²⁷ boundary might work instead. Another option would be to [combine](#)¹³⁸ all the patterns in the last row, and use [Fill Inside](#)¹²⁸.



Design It Yourself: Using Repeat Patterns to do pantographs means you can [reverse](#)¹¹⁹ pattern start/end points, change the sewing order, and even replace patterns randomly throughout the quilting.

4.5.3 E2E Alternating Patterns

Edge To Edge pantographs look less structured when alternating pattern is used. Not all patterns look good using the Alternating Pattern option, but CS makes it easy to audition them. The Alternating option will always have sides that are irregular but CS will automatically Trim the sides to fit the quilt.



Feature: Edge to Edge - Alternating

Assumptions: The machine is threaded, bobbins wound, belts engaged and patterns have been added to the project. The Prep Steps here are the same as a standard E2E.

Prep Step #1.) Measure the quilt length and width accurately before loading the quilt. *Note: There are three reasons to modify the total quilt length and width.*

1. *If you are leaving a margin at the top and bottom, be sure to reduce your total quilt length by this amount.*
2. *If your pattern is deeply nested, you may need to increase the total quilt length to allow the irregular edges to be trimmed off the top and bottom.*
3. *It is a good idea to reduce the length a little to accommodate shrinkage caused by the quilting. This could be from 1% to 5%, depending on the fabrics, batting and quilting density.*

Prep Step #2) Load the quilt and baste the outer edges.

Prep Step #3) Choose a pattern and think about the scale. Large scale, open quilting results in a more supple quilt and small scale, dense quilting is a bit stiffer.

Prep Step #4) Change the pattern details (height and width) to reflect the scale you prefer.

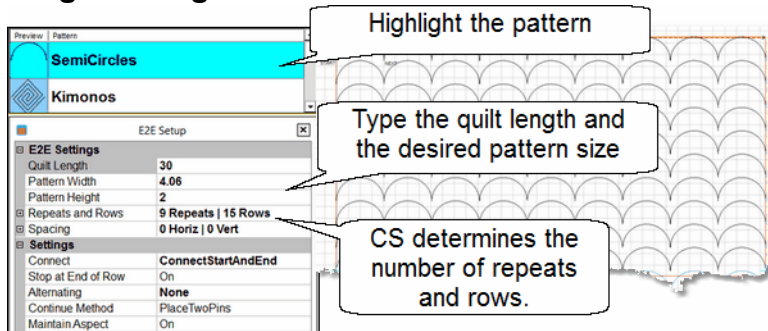
Steps to follow:

1. Click the E2E icon.



CS prompts you to click the four corners of the first boundary. Make this as large as possible to minimize the number of times the quilt must be rolled. Press Stop when done.

2. Change settings.



Choose a pattern, change the size for the scale needed, input the total quilt length and choose the Alternating Type. CS measured the width in step 1, and gets the length from the [Primary Settings](#)^[57]. It now has enough information to automatically calculate the number of repeats and rows required.

3. Check the [E2E Setup Details](#)^[57]: These were described before, but it is worth repeating.

[Size Settings](#)

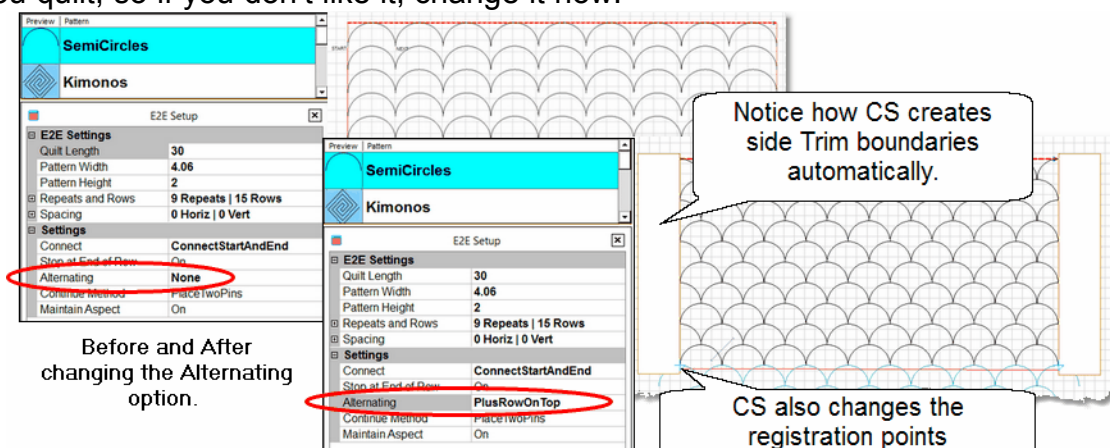
^[58]:

- * Pattern Width and Pattern Height may be different from what you started with.
- * Repeats and Rows have been set but can be changed if you do it in the setup mode (which means don't close the E2E Setup box until you are sure adjustments are done).
- * Spacing refers to the amount of space between patterns, both horizontally and vertically. Adjust these numbers if needed to add or remove space between patterns, especially between the rows.

Variable Settings ⁵⁸:

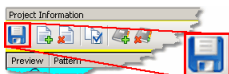
- * **Select Between Blocks** describes what you want CS to do between blocks.
Connect Start And End is preferred for pantographs.
Bobbin Pullup is used if each repeat is a separate block pattern. CS automatically switches to Bobbin Pullup if the repeated patterns have become disconnected.
- * **Stop at End of Row** – allows continuous stitching.
 - OFF means it will advance automatically to the next row, if there is room. It will stitch the first row, do tieoffs (if needed) and automatically move to the next row. If you choose this option, be sure to uncheck "Bobbin Stitch" in the Controller Def.
 - ON means it will stop and wait for the thread to be cut after each row. Normally this is set to "ON", so CS does stop and prompt for the bobbin thread to be cut.
- * **Alternating** – allows staggered rows.
None means don't stagger the rows.
Plus Row On Top means one extra repeat will be added to the first row and every other row.
Minus Row On Top means one repeat is taken away from the first row and every other row.
- * **Continue Method** refers to the method of spacing the rows properly every time the quilt is rolled. Place Two Pins means CS will pick the registration points and you need to mark them (with pins or a marker). End of Set uses the last stitch of the previous row (this is the default method). Use Start Point and End Point means CS will use the start and end point of the previous row as the registration points. Due to variations in patterns, Place Two Pins is the safest.
- * **Maintain Aspect** means CS will try to keep the adjusted pattern ratio (length:height) the same as the original pattern. This can't always be done however because the pattern dimensions may not share common factors with the quilt dimensions. For quilters who 'don't do math', this just means it won't fit without a little stretching.


4. Look at the image in the preview area. WYSIWYQ - What you see is what you quilt, so if you don't like it, change it now.



The Registration points have been calculated and marked. The pattern rows have been alternated and the excess on the sides has been trimmed automatically.

Save the project ⁶⁷.



5. Click Quilt  The machine moves to the start of the first pattern, takes a single stitch and prompts you to pull up the bobbin, so do that. Press OK on the keypad when ready. The first row now begins.

Repeat the steps listed in the previous section to complete the quilt. Be sure to trim the bottom edge to fit.

[Quick Reference E2E](#) 

4.5.4 E2E Concatenating Patterns

Edge To Edge patterns can be concatenated giving a very custom look. These patterns must have been designed with identical structures - the same start point, end point, size, proportion and nesting shape - for them to work together.

Feature: Edge to Edge - Concatenating

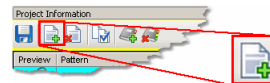
Assumptions: The machine is threaded, bobbins wound, the belts engaged, and you have patterns that are designed to work together. The Prep Steps here are a little different than a standard E2E, but the stitching steps will be the same.

Prep Step #1.) Measure the quilt length and width accurately before loading the quilt. *Note: There are three reasons to modify the total quilt length and width.*

1. *If you are leaving a margin at the top and bottom, be sure to reduce your total quilt length by this amount.*
2. *If your pattern is deeply nested, you may need to increase the total quilt length to allow the irregular edges to be trimmed off the top and bottom.*
3. *It is a good idea to reduce the length a little to accommodate shrinkage caused by the quilting. This could be from 1% to 5%, depending on the fabrics, batting and quilting density.*

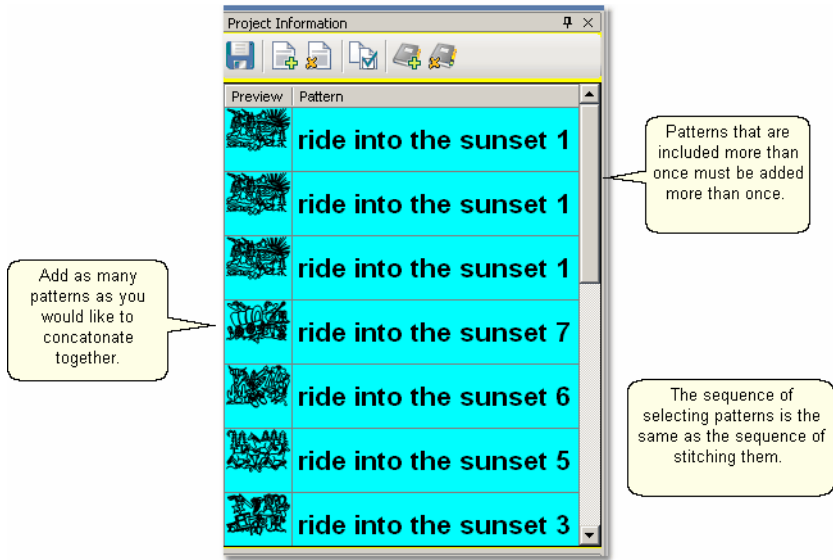
Prep Step #2) Load the quilt and baste the outer edges.

Steps to follow:

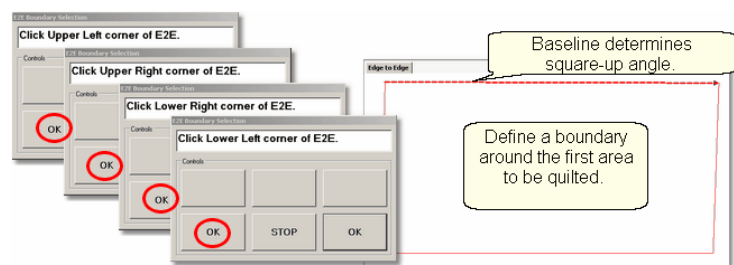


1. Add the patterns. Using the Add Pattern icon, find and select the patterns, adding them to the project. If any pattern needs to appear more than once in the quilting sequence, it needs to be added more than once.

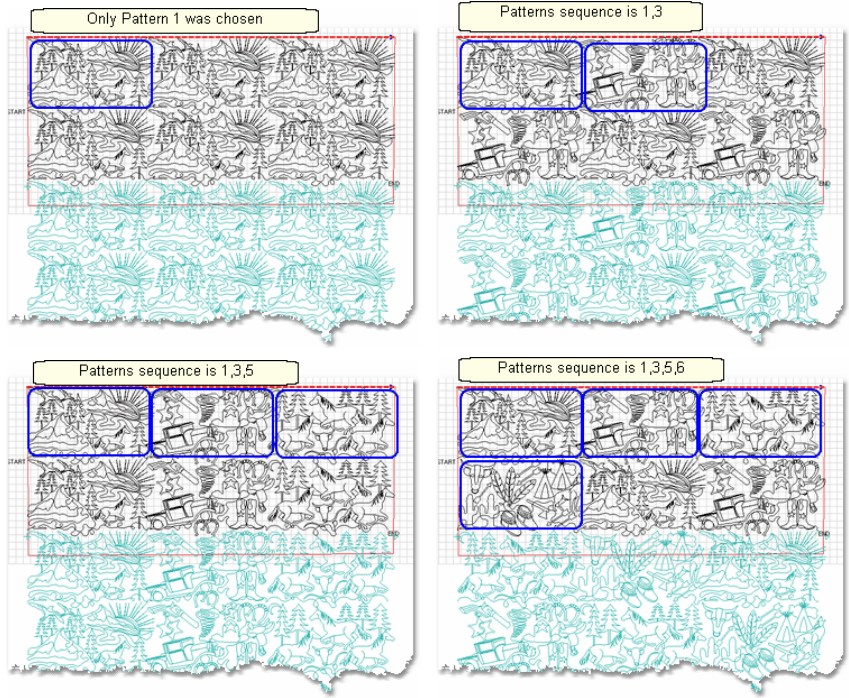
2. Select the patterns in order by holding the control key down, and then clicking on each pattern, in the sequence they are to appear. You will be able to scroll up and down the list of patterns without breaking the sequence. This sequence is very important as you will see.

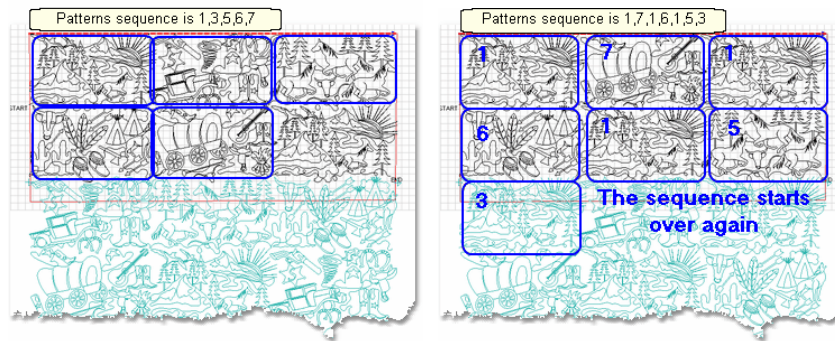


3. Click the E2E icon. and follow the prompts to define the boundary.



4. Enter the quilt length in the E2E Settings area and CS will display the patterns. Here are examples of different combinations of the Ride Into The Sunset patterns.





[Save the project](#)⁶⁷.

Follow the same steps as defined in the previous sections to stitch them. Begin at Step 5 of Pantographs using Edge-To-Edge. This will guide you through the steps of quilting each row (and advancing the quilt) until done.

4.5.5 Background Fillers using Trim - Inside

Applique blocks are good examples of the need to stitch the background down, allowing the applique to 'pop'. The background pattern is usually a dense filler pattern. The Trim-inside feature allows the background pattern to be positioned over the entire block boundary. On top of that, the boundary of the applique shape is defined and the boundary is trimmed away from the inside of the applique area so it won't be stitched over.




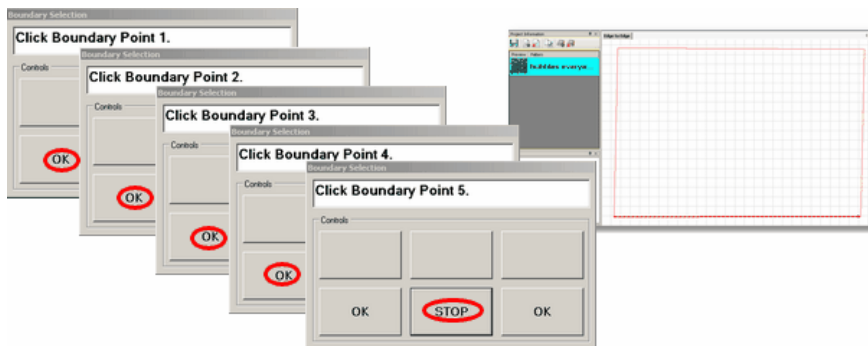
Feature: Trim Pattern - Inside

Assumptions: The quilt top is loaded and stabilized, machine is threaded, bobbins wound, belts engaged and patterns have been added to the project.



In this example, a large area will be quilted using a background filler pattern (bubbles). The quilt has some nautical creatures that are appliqued and will not be quilted with bubbles.

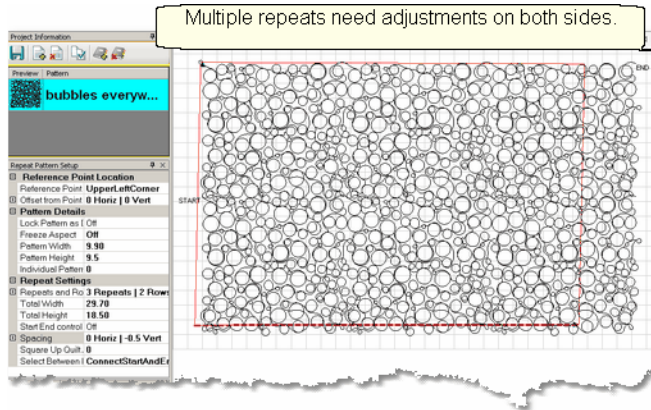
Steps to follow:

1. Click on the [Boundary icon](#)⁸⁵  and follow the prompts to define the boundary of the background area. If the project were to fill the background of an appliqued block, this would be the outer boundary.




2. Move the background filler pattern in.

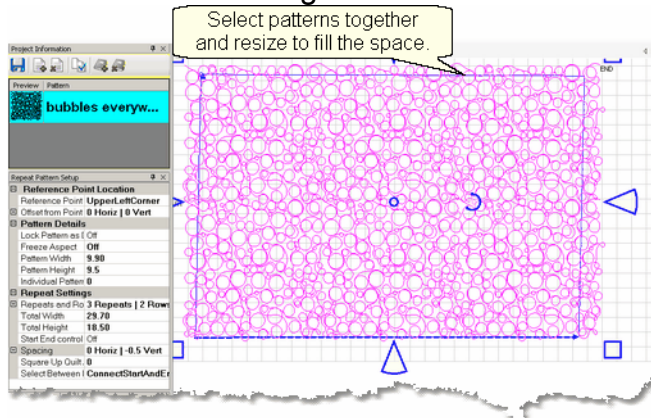
Use [Pattern to Boundary](#)¹⁷⁸  or [Repeat Patterns](#)¹⁸⁰  depending on how many repeats are needed to fill the area.




This example shows 3 repeats and 2 rows that were nested vertically by $-.5''$. There is a gap on one side border and an overlap on the other which need to be [adjusted](#)

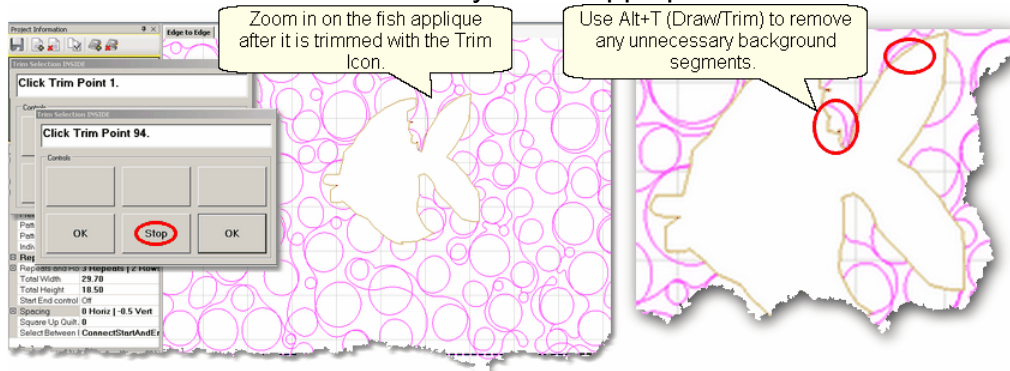
88.

3. Select all the patterns together  before adjusting the size and position. This prevents the individual patterns from becoming separated from the whole row. If the pattern doesn't fit exactly, let it extend past the outer boundary. The excess can be trimmed off before stitching.



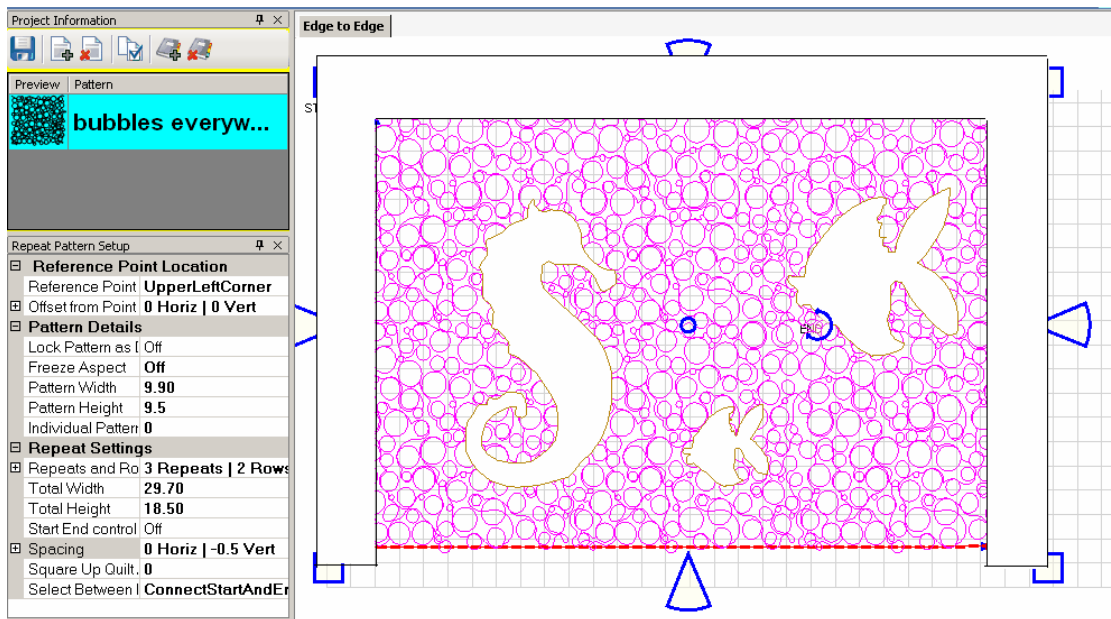
4. Specify Trim Inside.

5. Click on the Trim icon.  CS will prompt for a boundary. Use as many points as needed to define the boundary of the applique.



6. Click Stop when done and CS will erase everything inside the trim boundary, leaving the filler pattern in the background. Zoom in closely and look for any unnecessary pattern fragments in the background. These are easily removed with the mouse by using the [Draw/Trim](#)¹⁵¹ method, which allows additional trimming of the pattern in the Preview Area.

Tip: If tieoff stitches are being used, make them tiny and use the competitive Tieoffs. For people who prefer to hand tie knots and bury threads, change the Controller Definition form to uncheck 'tieoffs', and check 'Bobbin Stitch' and 'Stop at Jump Stitch'. Now CS will stop and you can leave longer thread tails to hand tie and bury.




Continue with additional Trims as needed.

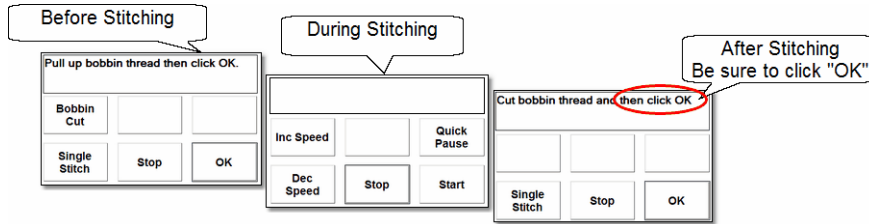
When done trimming the applique, trim the outer edges if needed. In this example, the bottom edge fit well so only the top and sides were trimmed. This is done using the same Trim-Inside feature, and creating a boundary around the outer edges as shown. Be sure the boundary around the outer edge covers all of the background filler. If any of the bubbles peek out, they will be stitched.

7. Save the Project.⁶⁷



Tip: Multiple "Trim-Inside" boundaries are possible in one quilt group (but only one "Trim-Outside") so trim until the pattern is customized to fit the space, even if it takes multiple trims.

8. Click on Start_Quilting  and CS moves the sewing head to the start of the pattern and prompts for pulling up the bobbin thread.



9. Click OK when ready to quilt. If multiple patterns were moved into the boundary, they will stitch in the order they were moved. At the end of the quilting sequence, you will be prompted to pull up the bobbin thread and click OK. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

Optional final step: After the background patterns are stitched, some people like to do an outline stitch around the applique. It is possible to convert the trim boundaries into patterns so the outline stitching can be done. Be sure to convert only the trim boundaries that were done using the machine head, not the little trim boundaries done using the mouse.

[Quick Reference Trim Inside](#)  256

4.5.6 Background Fillers using Fill


The Fill option delivers a result similar to the background fillers using Trim Inside, but without the tieoff stitches. Applique blocks are good examples of the need to stitch the background down behind a quilting pattern, as shown in the previous example. This example uses a stitched pattern as the focus point. Fill will create a new pattern derivative that excludes the area behind the focus pattern but connects all the pattern segments so it stitches without stopping.

Feature: Fill (with background pattern).

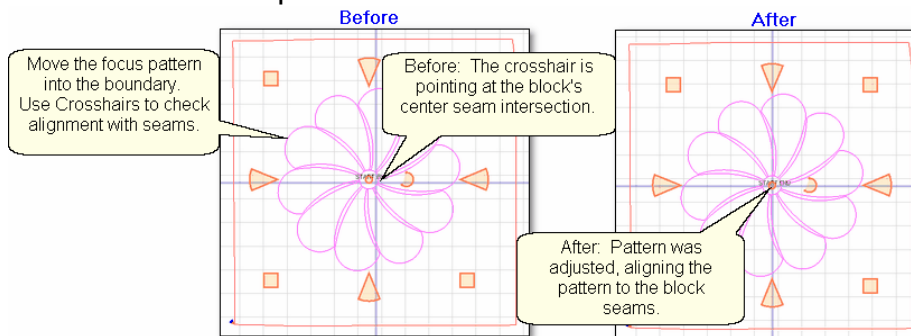
Assumptions: The quilt top is loaded and stabilized, machine is threaded, bobbins wound, belts engaged and patterns have been added to the project.

In this example, a focus pattern will be quilted in the center of a block, and the background will be filled with a meander pattern. There will be no tieoffs around the center pattern.

Steps to follow:

1. Click on the Boundary icon  and follow the prompts to define the outer boundary of the quilt block. Use as many clicks as needed to follow the seamlines around the block.

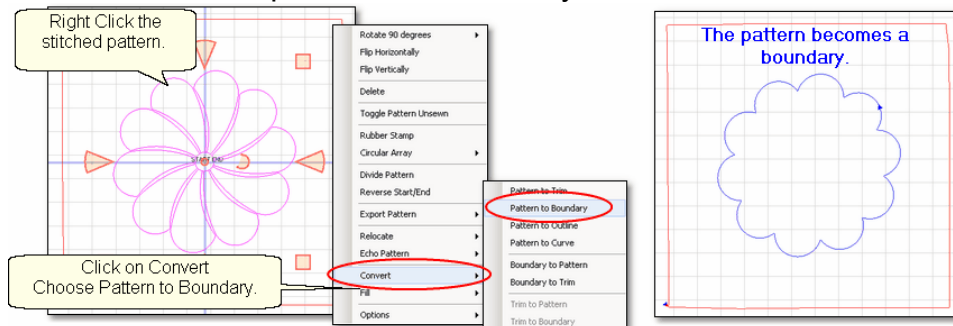
2. Use Pattern to Boundary  and Freeze Aspect = 'ON' to preserve the proportions of the focus pattern.



Check the positioning of the focus pattern. If needed, adjust the positioning of the block so it aligns with any key seamlines.

3. Click on Quilt icon  and stitch the focus pattern. It turns red.

4. Convert the stitched pattern to a boundary.



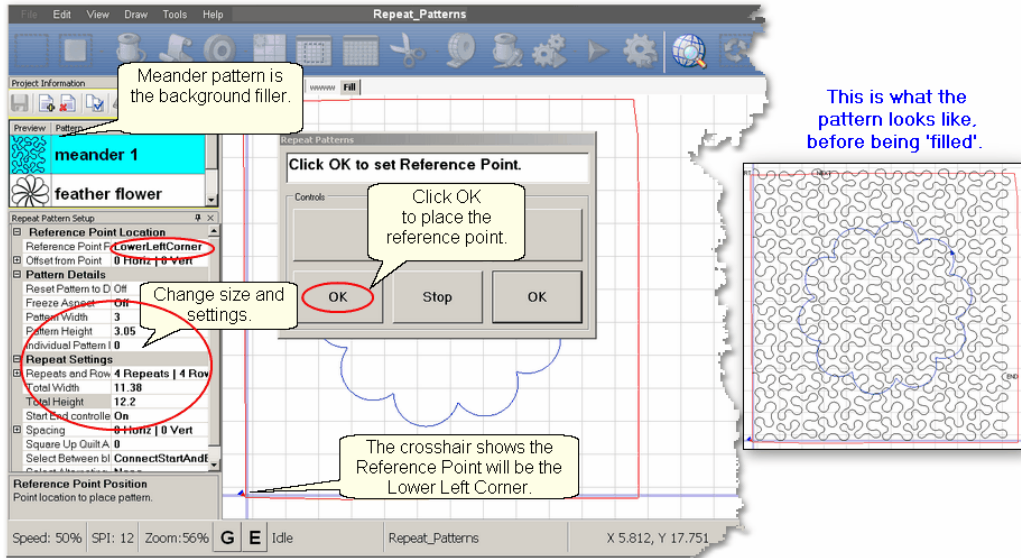
* Right click the focus pattern and choose Convert, or click the Convert icon



* Choose Pattern to Boundary (PTB). The boundary is blue. In the picture above, the outer boundary is 'selected' so it is red.

5. Choose & move in the background filler.

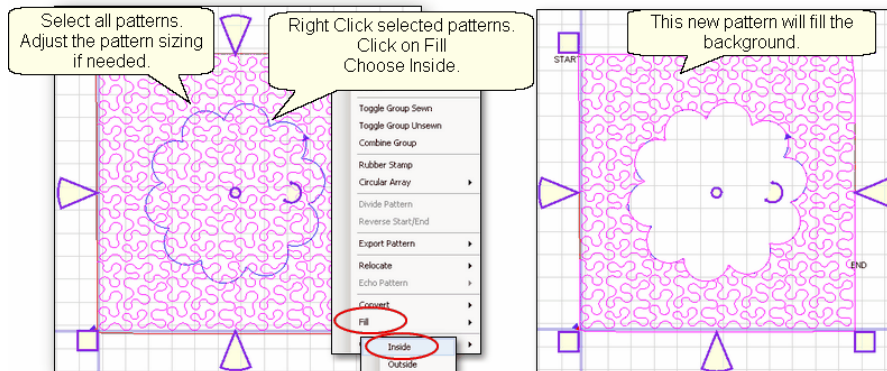
Choose the filler pattern, and change the settings if needed to get an appropriate quilting density.



Use [Repeat Patterns](#) ¹⁸⁰  to fill the block boundary.

- * Choose the Reference Point (lower left corner in this example).
- * Position the machine head at the lower left corner of the block (see crosshair).
- * Change the Pattern Details to get the quilting density set.
- * Change the Repeat Settings to choose the number of repeats and rows.
- * Adjust Total Width and Total Height if needed.
- * Click OK button to move the patterns onto the preview area.

6. [Fill the Background](#) ¹²⁶. Select all the background patterns together.



* Right Click the selected patterns.

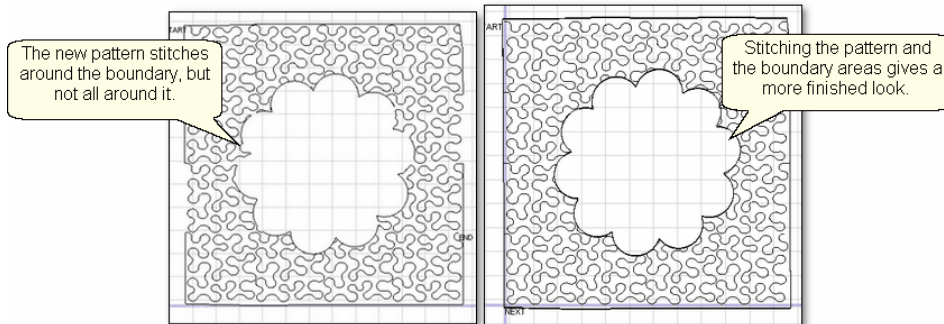
* Click on Fill and Choose Inside or Click on the Fill Inside icon 

* Be patient, this may take a couple minutes.

The result of this process is a new pattern that is customized to fit the background filler density and the two boundaries. Always use F2 - Virtual Stitchout before stitching because not all patterns fill the space well, and some may have excessive backtracking.

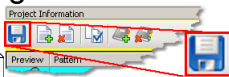
7. Click on Quilt icon.  and stitch the pattern.

The pattern will stitch in one continuous line. When it encounters a boundary, instead of doing tieoff stitches, it will stitch along the boundary until it reaches the next portion of the pattern to be stitched.



As shown above, after the new fill pattern has been stitched, it might be a good idea to [convert](#)¹⁴³ the two boundaries to patterns, and stitch them out also. It will look more like outline quilting.

7. Save the Project.

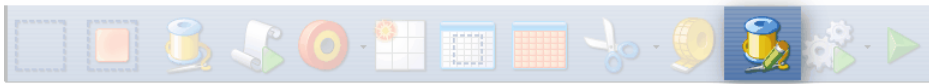


4.6 Restart

Restarts are needed for a variety of reasons:

- * The thread break sensor stops the machine.
- * The quilter presses the Stop button.
- * The machine stops because it hit an obstacle.

Whatever the reason, this feature makes restarting easy.



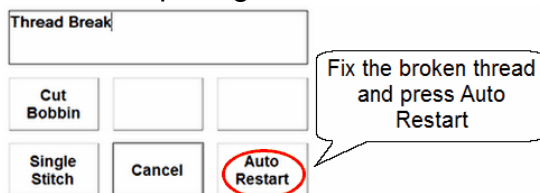
4.6.1 Thread Break Restarts

Feature: Restart (when a thread break has been detected)

Assumptions: The machine stopped and the thread break was fixed.

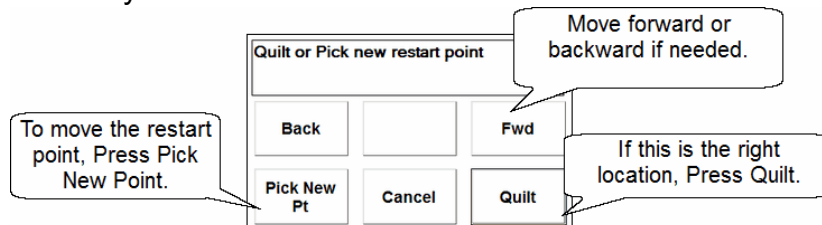
Steps to follow :

1. To continue quilting, choose the "Auto Restart" option.



Pressing this button moves the machine back to where the break was detected.

2. CS asks if you want to confirm or move the Restart Point.



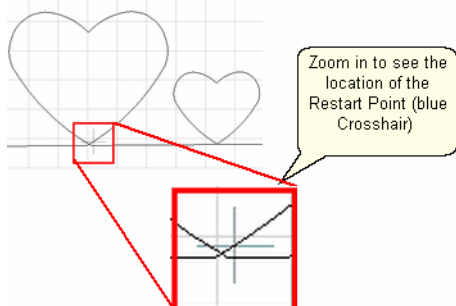
If the "Auto Restart" point is close, use **Back** and/or **Forward** to move the sewing head 7 stitches at a time until the sewing head is positioned properly. **Press Quilt** when ready, and continue to sew.

3. Because there is a delay between the thread breaking and the sensor stopping the machine, the Restart Point probably needs to be moved. Press "**PickNewPoint**" to release the sewing head so you can move it to a different spot. The new point can be identified using the stitcher or the computer screen.

3A. Find the restart point using the sewing head - Move the machine until the needle is just above the point where you want to continue stitching. **Press "Use This Pt"** on the keypad. CS moves to the closest stitch and waits for another response. If it looks good, **Press Quilt** and continue to sew. If not, try again by pressing "**Use This Pt**" until the right spot is found.



3B. Find the restart point using the computer screen - Look at the image on the screen and find the crosshair mark - it is a long, skinny blue plus “+” sign. Zoom in and out using the roller on the mouse. Find the spot on the screen that corresponds to the correct restart point on the quilt, and click that spot with the mouse. The blue crosshair will move to this location on the screen and the stitcher will move to that location on the quilt. Be very careful not to move the pattern on the screen, and if it is moved by accident, be sure to choose 'Pick a Point' restart, and not 'Auto' restart.

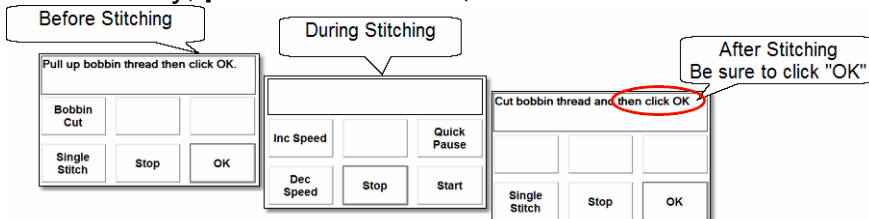


Patterns with backtracking (2 or more lines stitched on top of each other) can be hard to restart because CS doesn't know which line to use. The safest method is to choose a spot that has already been sewn and has no overlapping lines. Identify that spot, then press "Forward" to move forward until just before the break point.

When the placement looks good, **Press Quilt** and continue to sew.

Tip: The color of the pattern image on the screen can help you locate the crosshair. Red means CS thinks that part of the pattern has been stitched. Black means CS thinks that part of the pattern needs to be stitched.

4. When ready, **press Quilt** , and continue to sew.



At the end of the quilting sequence, you will be prompted to pull up the bobbin thread and click OK. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

[Quick Reference Restart](#)  ₂₇₁

4.6.2 Manual Stops and Restarts

Feature: Restart (when a manual stop occurred).

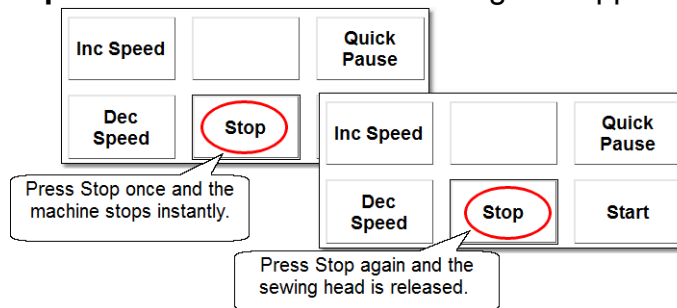
Manual Stops and Restarts are easier to do.

Tip: For people who can hear when the bobbin needs to be changed, this is very useful. When it sounds like it is time to change the bobbin, watch the stitching until it gets to a place where knots will be hidden, and press Stop. The machine stops instantly, and the sewing head can be moved to the side of the quilt and the bobbin can be changed. Restart remembers where it stopped and returns to that spot accurately.


Assumptions: The machine stopped and the reason is resolved.

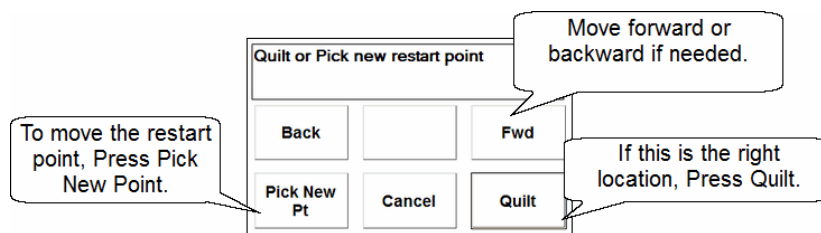
Steps to follow :

1. Press **Stop** and the Stitcher Control dialog box appears.



Press **Stop** again to end the stitching completely if needed and use the stitcher to secure the threads.

2. Click Restart_Quilting  when ready to resume quilting. The sewing head goes back to the spot where it detected the 'Stop' command and the "Pick new restart point" box appears.



3. Since this is usually the correct spot, chances are good that you can press **Quilt** and continue on.

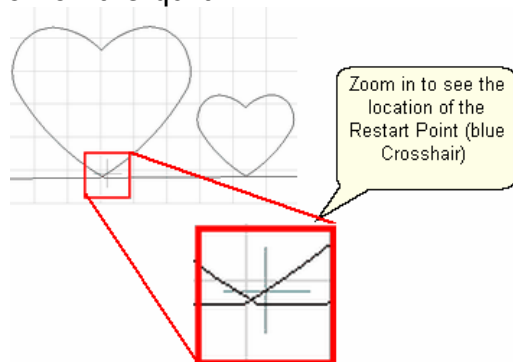
* If this is not true, but it is close, use **Back** and/or **Forward** to move the sewing head 7 stitches at a time until the sewing head is positioned properly. **Press Quilt** when ready, and continue to sew.

* If it isn't close, Press "**PickNewPoint**" to release the sewing head so you can move it to a different spot. The "Point Selection" dialog box appears.

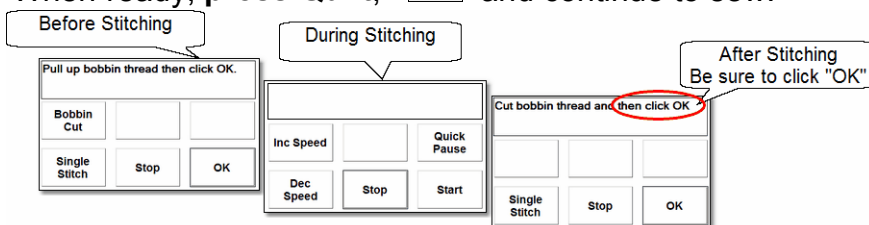


3A. Find the restart point using the sewing head - move the machine until the needle is just above the point where you want to continue stitching. **Press “Use This Pt”** on the keypad. CS moves to the closest stitch and waits for another response. If it looks good, **Press Quit** and continue to sew. If not, try again by pressing **“Use This Pt”** until the right spot is found.

3B. Find the restart point using the computer screen - look at the image on the screen and find the crosshair mark - it is a long, skinny blue plus “+” sign. Zoom in and out using the roller on the mouse. Find the spot on the screen that corresponds to the restart point on the quilt, and click that spot with the mouse. The blue crosshair will move to this location on the screen and the stitcher will move to that location on the quilt.



4. When ready, **press Quit**,  and continue to sew.

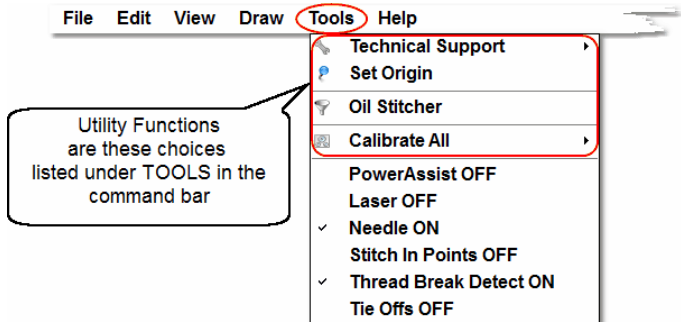


At the end of the quilting sequence, you will be prompted to pull up the bobbin thread and click OK. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

[Quick Reference Restart](#)²⁷¹

4.7 Utility Functions

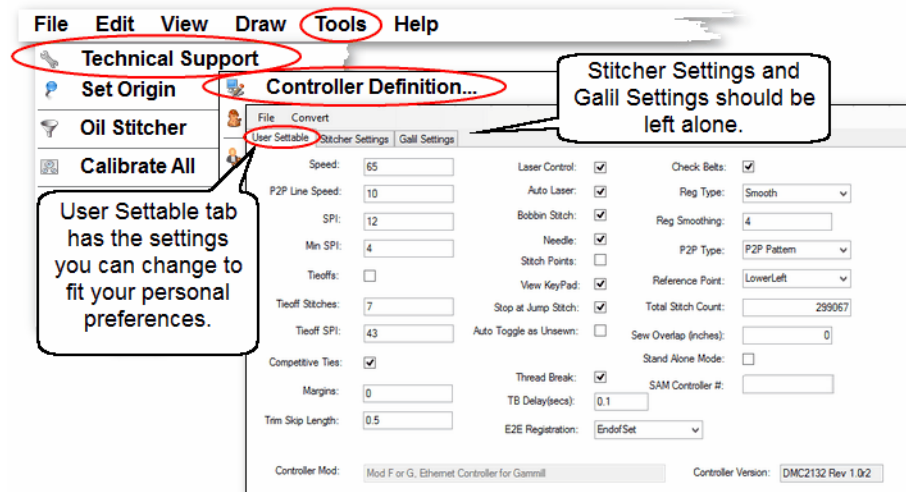
Utility Functions are used in many different techniques. They are very important, but not used on a regular basis.



4.7.1 Technical Support

There are many mechanical, electrical, and numeric default settings that are required to run CS. The defaults are the initial values that are set every time CS starts up. Many of these values can be [changed as needed](#)^[164] during the quilting session. Others are considered Restricted Areas and should not be modified without the help and guidance of the Statler Stitcher Technical Support staff. The user controlled values are described in the following text.

To find the defaults you can change:

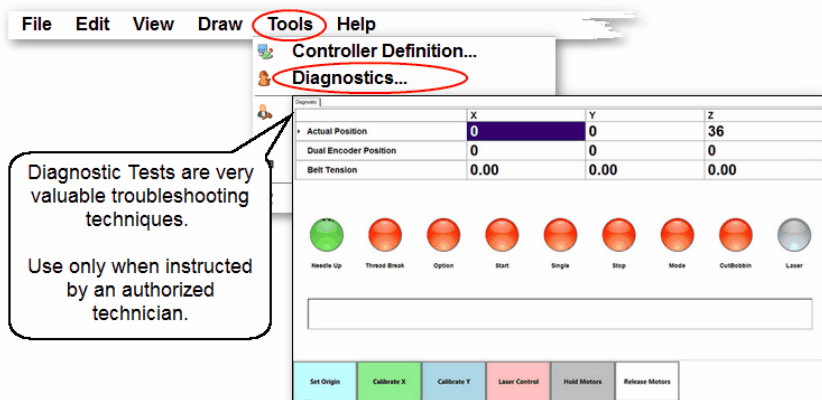


- * Click Tools,
- * Click Technical Support,
- * Click Controller Definition
- * User Settable Tab contains your default values. If you change any settings, be sure to save your changes.

The Controller Definition Form has three tabs; User Settable, Stitcher Settings (which controls the stitcher) and Galil Settings (which control the motors). DO NOT make changes to either the Stitcher Settings or the Galil Settings without the guidance of the Statler Tech Support Team.

Each setting in the configuration form is explained thoroughly in the section "Quilting The Quilt" , [Set Stitching Defaults](#)¹⁶⁴.

Diagnostic testing can be done when troubleshooting is warranted. This should only be done when following the instructions of an authorized Gammill / Statler technician.

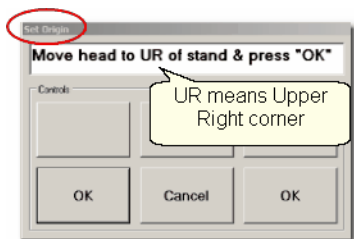


The remaining items in the Tech Support tab are there if troubleshooting is warranted. This should only be done when following the instructions of an authorized Gammill / Statler technician.

4.7.2 Set Origin

Every time the software is started, CS will ask for an origin point. The origin is an anchor for the system, and all movement is defined relative to that anchor.

Most graphics software uses one of three origin points: Machine origin (some repeatable, reliable place like an upper corner), absolute origin (a fixed point, like the center) and relative origin (which changes by the block or project). (Precision Stitch used a relative origin.) CS uses the machine origin. Because the origin point can be relocated, CS projects can be shared, re-used or restarted.

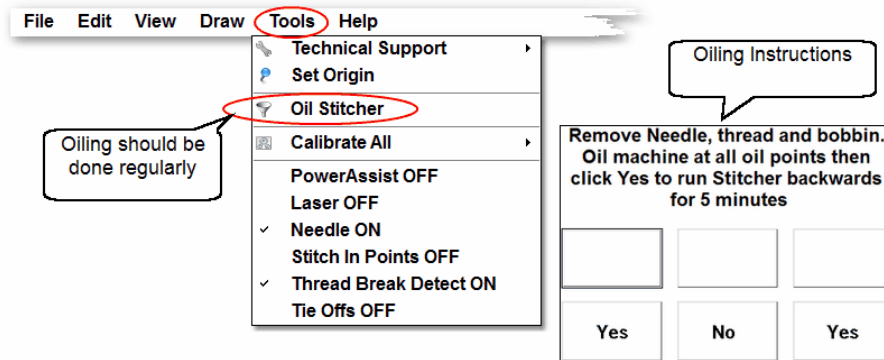


CS has the ability to set a specific origin point as well as relocate the origin using Control points. This allows projects to be started and stopped, and adjusted as needed. It also means that projects can be created for a whole quilt and the project can be sold / shared to others, just like a single pattern is sold / shared.

4.7.3 Oil Stitcher Routine

This is a special routine that can be part of the weekly cleaning and maintenance. It runs the sewing head motor at varying speeds backwards so the oil has a chance to penetrate some places that are otherwise hard to reach. New machines and certain

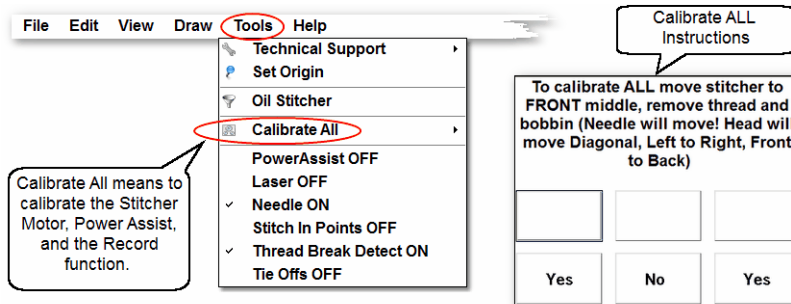
climates may require this to be done more frequently.



4.7.4 Calibrate All

Calibrating guarantees stitching accuracy. This doesn't need to be done often but can be performed as needed. The Calibrate All routine is called automatically after loading new software, and all three sub calibrations are performed.

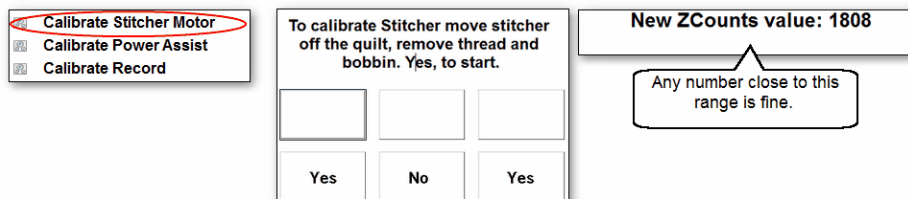
Click on Tools and Click on Calibrate All



There may be occasions to calibrate only one of the features. In this case, Click on Tools, and hover over the arrow on the Calibrate line. More choices appear.

4.7.4.1 CalibrateStitcher

Calibrate Stitcher - Move the machine head off of the quilt, remove thread and bobbin case as prompted. Click Yes when ready. The needle will move as if it were stitching. When done, a dialog box appears with New Z-Counts. The value given will depend on the controller model being used.



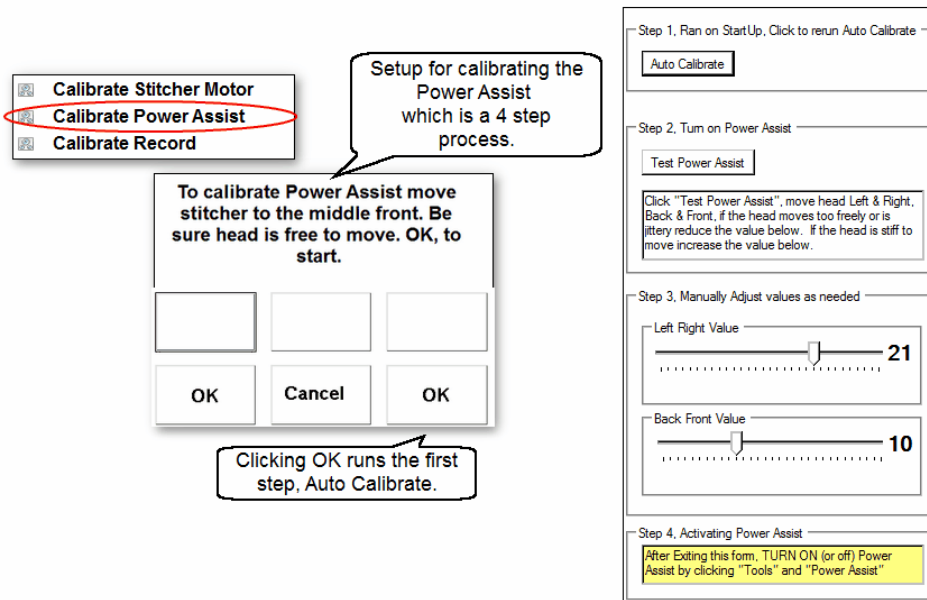
4.7.4.2 Calibrate Power Assist

The Statler Stitcher has been installed on numerous different machine heads, which vary in weight and 'float' depending on the wheels and other mechanical devices. Power Assist makes the sewing head seem lighter because it adds a little 'motor

power' making it easier to move.

Power Assist needs to be adjusted by each individual until the 'touch' is comfortable. There is a calibration utility that determines the initial default settings. It also allows additional adjustments, making it 'feel' right.

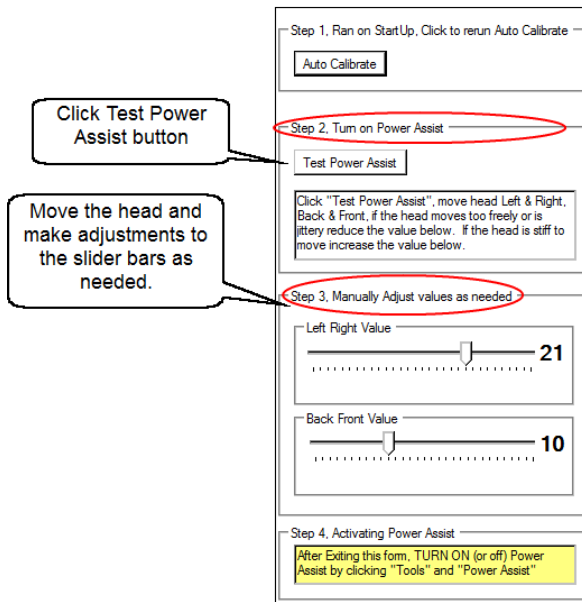
Calibrate Power Assist - allows you to adjust the 'weight' of the machine until you can control the movements comfortably. You will be prompted to move the machine to the middle front. It will move by itself during calibration.



The Power Assist dialog box and remains on the screen until it is closed.

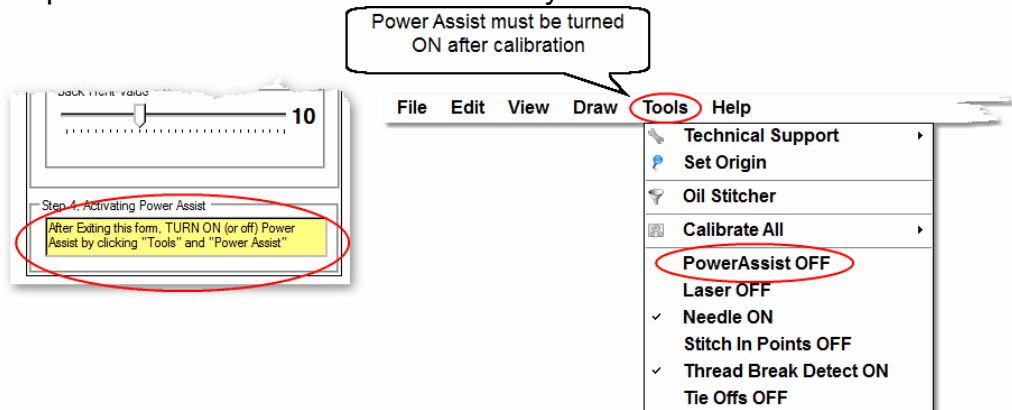
Step 1. Click Auto Calibrate. Clicking OK starts this step. The sewing head will move about 12 inches front to back, and side-to-side. CS suggests some default settings.

Step 2 and Step 3. CS has turned off PA, so click 'Test Power Assist' to continue. Follow the instructions, and adjust the settings to suit your personal preference. When the machine is difficult to move, the settings are too low. If the machine head continues to move or feels jerky at a stopping point, the settings are too high.



As a safety feature, CS turns off the Power Assist before it accepts the new settings. So, you will need to click the Test Power Assist button every time you want to adjust the settings.

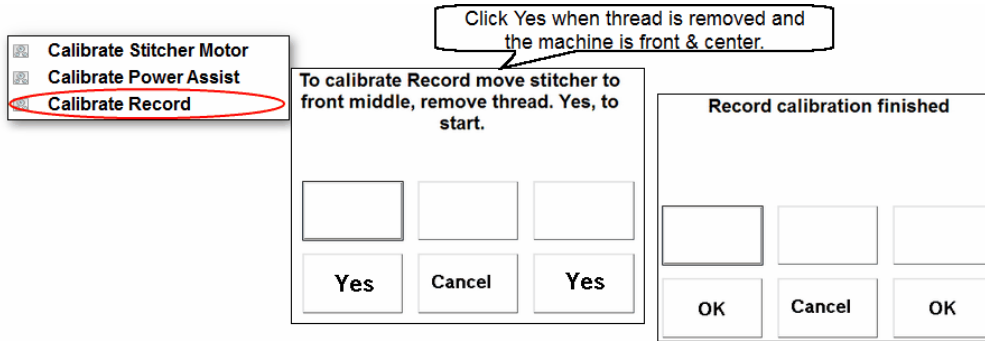
Step 4. Activate the Power Assist Utility.



Calibrating the Power Assist does not turn it on automatically, so click on the Power Assist choice in the Tools section of the command bar. Once it is turned on, PA will remain on until it is turned off, even if CS is shut down and restarted.

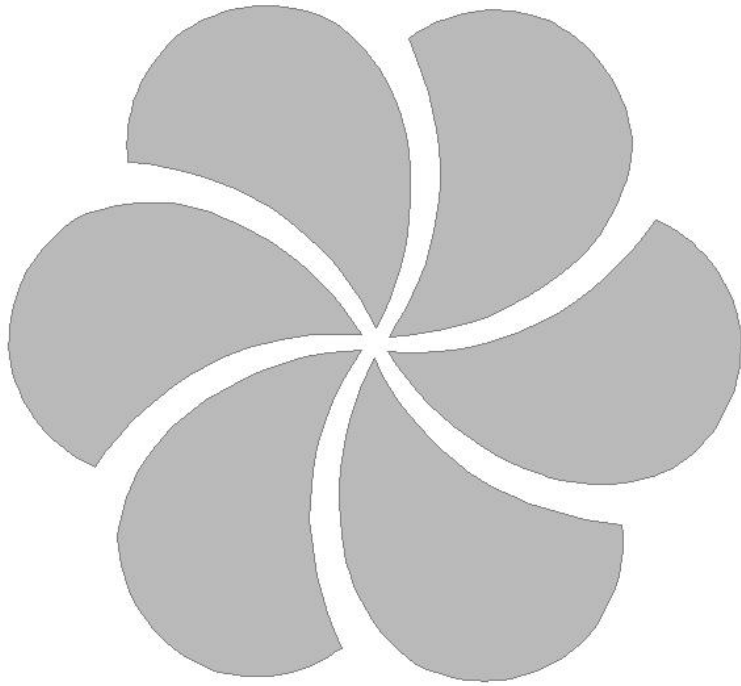
4.7.4.3 CalibrateRecord

Calibrate Record ensures that the patterns recorded will play back at their true sizes. When calibrating, it is important to move the machine front and center. It will move by itself in a diagonal direction.



When the routine is done, click OK to clear the message.

Part V





















5 Quick Reference Sheets

5.1 Quick Ref Icons Shortcuts










CreativeStudio® Quick Start Icons and Shortcuts

Stitching Icons: ✓ is an abbreviation for 'click'

Icon	Icon Name - description & shortcut keystrokes included.
	Tip - Created for the documentation only
	DIY - Design It Yourself - Tips on pattern design and shortcuts.-
	Boundary - Begins the process to define a bounded area. Alt+B starts a boundary, Right ✓ will end it, Esc to cancel.
	Pattern_To_Boundary (Standard or Stretch) - Moves the selected pattern into the selected boundary, using either Standard mode or Stretch mode.
	Start_Quilting - Begins the quilting process
	Advance & Continue - Continues the quilting sequence after the quilt is rolled
	Point_To_Point - (Line or Pattern) - Begins the P2P placement for lines or patterns.
	Repeat_Patterns - Begins the process for moving multiple copies of a selected pattern to the preview area
	Border_Corner - Begins the process of moving the corner and border patterns into the border boundary.
	Edge_To_Edge - Begins the setup process for doing E2E quilting.
	Trim - (Inside or Outside) - Begins the Trim process for Inside or Outside trims. Alt+T starts a trim, Right ✓ will end it, Esc to cancel.
	Measure - Starts the prompt sequence for using the sewing head to take measurements. Right ✓ - after measuring to transfer measurements.
	Restart_Quilting - Starts the process of finding the correct point to restart.
	Regulated_Sewing - Sewing with the stitch regulator (Original, Plus, or Smooth) Shift+Channel Lock will change or Increment the channel lock angle. Shift+Exit will Exit.
	Baste - Basting with the stitch regulator. Shift+Channel Lock will change or Increment the channel lock angle. Shift+Exit will Exit.
	Constant_Sewing - Sewing without the stitch regulator. Shift+Channel Lock will change or Increment the channel lock angle. Shift+Exit will Exit.
	View All - Adjusts the Zoom distance so all patterns are viewable in the preview area.
	Select All Patterns - Selects all patterns in the preview area

Quick Reference Icons for Projects:

The project content can be changed using these icons.

Icon	Icon Name & location
	Save (Project) - Saves the current project
	Add Pattern - Starts the process for adding patterns
	Delete Pattern - Deletes the selected pattern
	Check Project Details - Displays the Project Details dialog box
	Add Quilt Group - Creates a new Quilt Group Tab
	Remove Quilt Group - Removes the current Quilt Group Tab
	Undo - Reverses the last instruction(s)
	Export - Creates a new pattern
	Virtual Stitchout - Follows the stitch path checking for breaks

General Purpose Shortcuts:

KeySeq	Is the same as:	What it will do:
< >		Selects stacked patterns sequentially.
k,l		Selects stacked boundaries sequentially.
i,o		Selects stacked trim boundaries sequentially.
Pg↑ Pg↓		Navigates from one quilt group to the next.
Alt + ↑ ↓ ← →		'Nudge' does tiny adjustments when in Editing. It moves the pattern in tiny increments to aid in pattern placement, with handles showing.
Ctrl + ↑ ↓ ← →		'Nudge' does tiny adjustments when in Editing. It moves the pattern in tiny increments to aid in pattern placement, with no handles showing.
Esc		Escape from a command sequence or mode.
Del		Delete the highlighted object (pattern, line, text, etc.)
Ctrl+✓		Selects multiple items, Esc to deselect
Ctrl+A		Select All
Ctrl+N	✓File, ✓New	Create a new project.
Ctrl+O	✓File, ✓Open	Open an existing project
Ctrl+S	✓File, ✓Save	Save the current project
Ctrl+Z	✓Edit, ✓Undo	Reverse the most recent command
Ctrl+Y	✓Edit, ✓Redo	Re-execute the command – <i>or undo the undo</i>

Feature Specific Shortcuts:

Feature:	KeySeq	What it will do:
Measure	Right✓	Transfer the measurement. Right click destination field, click on the number to xfer.
	F1	Help
	F2	Virtual Stitchout - checks the path of a new pattern.+ to speed up, - to slow down.
	F5	Refresh Screen, resets stitcher connection and takes time - use only if needed.
Draw	F7	Node Mode, display all pattern nodes
Draw	F8	Set Sew Order, display and change pattern direction and sequence
Draw	F9	Pattern anchor is 'Edge'.
Draw	F10	Pattern anchor is 'Center'
Draw	F11	Pattern anchor is 'Endpoint'
Draw	F12	Pattern anchor is 'Stretch'
Draw	G	turn on (or off) the Gridpoint Snap
Draw	E	turn on (or off) the Endpoint Snap
Draw	Alt+B	begin a Boundary, Right✓ to end.
Draw	Alt+T	begin a Trim, Right✓ to end.
Draw	Alt+A	begin a Sewable Arc, Right✓ to end, Esc to cancel.
Draw	Alt+C	begin a Sewable Curve, Right✓ to end, Esc to cancel.
Draw	Alt+L	Begin a P2P Line. Stop will create a Jump Stitch, Shift+Esc will end the line.
Draw	Alt+P	Begin a P2P Pattern. Stop creates a Jump Stitch, Shift+Esc ends the pattern.
Draw	Alt+M	Begin to measure objects on the Preview area. ✓ start and end points. Esc to cancel.

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5.2 Quick Ref Regulated

Feature: Regulated Baste Constant Speed sewing

There are three choices for the regulated stitching process: Original, Plus and Smooth. Constant Speed and Baste have their own icons but the screens and the process of stitching are the same as Regulated Sewing. Constant Speed runs the stitcher without a stitch regulator.

Baste is essentially a repeated single stitch. The basting stitch is a long stitch and is usually temporary. It is the most common technique used around the outer edges. The hopping foot actually applies less pressure than normal which prevents the fabric from being pushed and stretched. Stitch Length for basting begins with a 'B'. Often basting stitches are measured in IPS (Inches Per Stitch) instead of SPI (Stitches Per Inch), but CS can do either. With minor exceptions, the screens for Baste and Constant Speed are the same as Regulated, which are explained here.

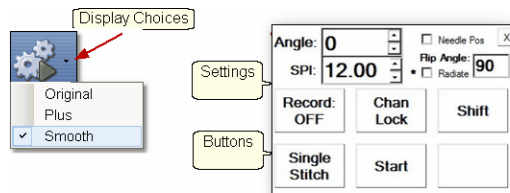
Steps to follow:

1. Choose a style of sewing.

Click on the small black arrow to the right of the Regulated Sewing icon to see the choices. Original, Plus and Smooth vary only in the speed of the needle moving up & down.

2. Click on the Regulated Sewing icon.

A Dialog box shows settings and buttons.



Regulated and Constant Speed Settings:

Angle: This is the current angle that will be used when Channel Lock is turned on.

Stitches Per Inch - Change with up/down arrows or use mouse & keyboard.

Flip Angle: If Radiating Lines is not checked, this angle can replace the current angle. To flip the angle, press and hold the shift button on the keypad, and press the Chan Lock button. To flip it back again, repeat the 2-button sequence.

Radiating Lines - When checked, CS increases the current angle by the number of degrees shown in Flip Angle. To increase the current angle, press and hold the Shift Button on the keypad, and press the Chan Lock Button. Repeat this to increase it again.

Needle Position - If checked, the sewing head works like the 'Plus' machines, allowing a half stitch to be taken instead of a full single stitch. Press the button once and the needle goes down & stays there. Press it again to bring the needle back up. If it is down when stitching starts, it will go back down when it stops.

Buttons:

Record Off means the motions are not being recorded,

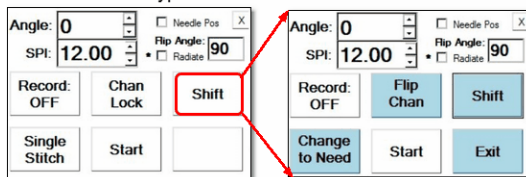
Chan Lock (on/ off) locks the sewing head so it stitches a straight line at one angle.

Shift - Press this once and additional keypad functions appear & stay for a couple seconds. This is for reference only - each blue button requires a 2-button sequence.

Single Stitch - press this to take a full single stitch. If the Needle Position box is checked, this button is labeled 'Needle Position', and pressing it takes a half stitch.

Start - starts the stitching process, and STOP ends it.

When the Shift button is pressed,
the keypad buttons have additional functions.



Additional Functions: These functions (light blue buttons) are initiated by using a 2-button sequence; press and hold the Shift button and then press the second button.

Flip Chan Lock - Changes the current angle.

* If Radiating Lines is not checked, this will change the current angle to whatever the Flip Angle is set at. To flip the angle, press and hold the shift button on the keypad, and press the Chan Lock button. To flip it back again, repeat the 2-button sequence.

* If Radiating Lines is checked, CS increases the current angle by the number of degrees shown in Flip Angle. To increase the angle, press and hold the shift button on the keypad, and press the Chan Lock button. Repeat to increase it again. It will go up to 90 degrees and return back to 0 degrees.

Shift - used to display additional functions (light blue buttons) and to execute them.

Change to Need Pos - is used to 'check' (or choose) the Needle Position option, making the Lower Left button change to 'Needle Position'. Press and hold the Shift button and press Change To Need Pos button. Repeat the 2-button sequence to return to Single Stitch.

Start - starts the stitching process, and STOP ends it.

Exit - To exit regulated mode, press and hold the Shift button and press the Exit button.
Using the mouse & screen works too.

3. Press Start on keypad when ready to sew and Stop on keypad to stop. Dark blue buttons mean the stitcher is running. Notice that the two buttons on the left have changed in meaning.

Inc SPI means Increase the Stitches per Inch.

Dec SPI is decrease stitches per inch.

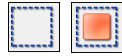
4. Press Shift and Exit on keypad when ready to exit regulated mode.

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5.3 Quick Ref Single Block

Feature: Single Block

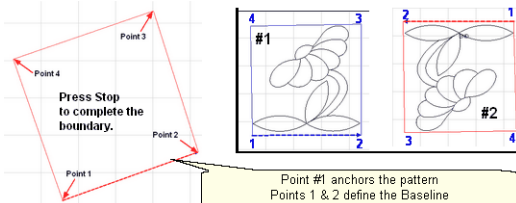


(using Boundary and Pattern_to_Boundary features)

Step 1: Define the Boundary

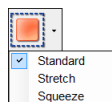
Boundaries are used in many of the CS techniques. They might be required by a technique (such as defining the quilting surface of an E2E design) or used as a convenient reference for guiding the placement of patterns. Either way, they synchronize the quilt top with the screen image.

* Click on the Boundary icon to begin defining the boundary. CS will prompt for points that define the area.



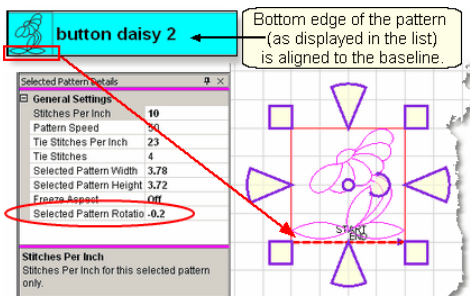
About boundaries:

- * A bounded area must have at least 3 points (a triangle) and can have hundreds.
- * The first point is considered the anchor. The lower left corner of the pattern will always be aligned to the first point clicked.
- * The first two points define the baseline which determines the pattern rotation.
- * Pressing Stop completes the boundary. CS will connect the first and last points, enclosing the area.
- * Choose the baseline and always click the points in a counter clockwise direction. Patterns are aligned to the baseline as shown:
- * Once a boundary is defined, it can not be changed. It can however be deleted and a new boundary defined. Or, it can be converted to a pattern, then moved, and converted back to a boundary.
- * To delete a boundary, first select it, then press the Delete key on the keyboard.



Step 2: Move Patterns into Boundary

- * Choose which 'fit' you prefer from the drop-down box:
 - * **Standard** is used when the boundary shape resembles the pattern shape.
 - * **Stretch** is used when the shapes are different. CS stretches the sides to fit.
 - * **Squeeze** is used when the boundary is very irregular. CS tries to reshape the pattern to squeeze it into the boundary.
- * Click on a boundary to select it. (It turns red).
- * Click on a pattern to select it. (it turns cyan)
- * Click on the Pattern_To_Boundary icon to move the pattern in. The pattern is moved into the bounded area and resized to fit.

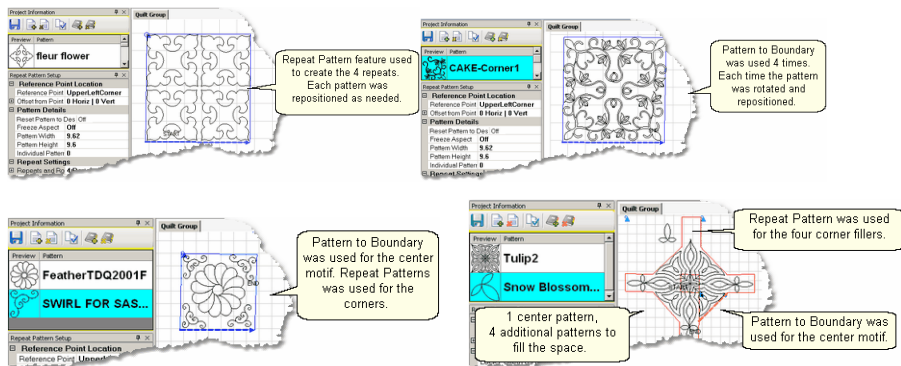


When a pattern is moved into a boundary, it will be aligned to the baseline so if it slopes up (or down) the pattern will be rotated accordingly. The slope is displayed in the Selected Pattern Rotation field of the details.

* The Preview area is focused on the pattern most recently used. To see all patterns and boundaries, click View All icon.

Step 3. Click on Start_Quilting and the sewing head will move to the Start of the pattern. CS will prompt for pulling up the bobbin thread. **Press OK** when ready to quilt. At the end of the quilting sequence you will be prompted to pull up the bobbin thread and click OK. Be sure to click OK because it completes this process.

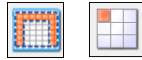
More elaborate designs can be stitched using combinations of single block patterns. Here are some examples:



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5.4 Quick Ref Borders and Corners

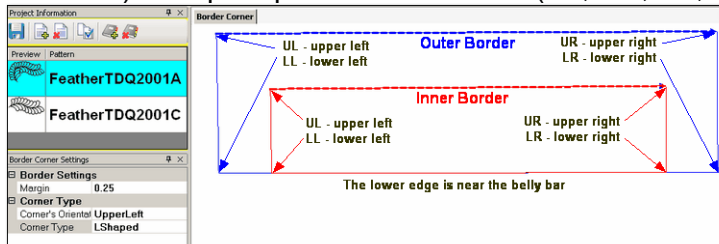
Feature: Borders and Corners



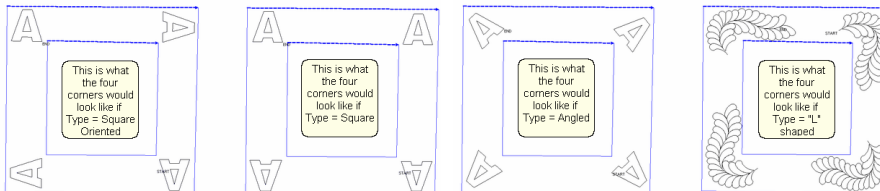
Using Border / Corner and Repeat Patterns features

Steps to follow for corners and borders:

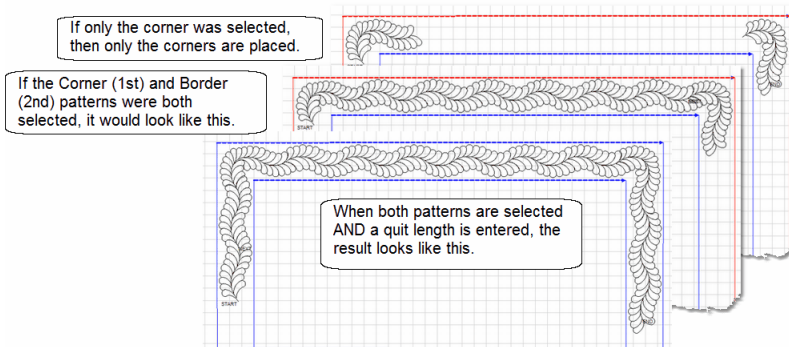
1. Select the patterns, choosing the corner first, hold the Ctrl, choose the border next.
2. Click on the Border_Corner icon. CS prompts for outer border boundaries: Click (UL, UR, LR, LL corners). CS prompts for Inner border (UL, UR, LR, LL corners).



3. Adjust the settings, choosing a corner type and orientation that best fits the quilt.



4. CS moves the top corners and borders into the preview area. If the Quilt Length is provided, CS will calculate the sizes for the side borders, and place as many as will fit.



5. Click on Start_Quilting and the sewing head moves to the Start of the first pattern. CS will prompt for pulling up the bobbin thread and choosing OK when ready to quilt. CS will stitch the first pattern and move to the next, repeating the prompts for bobbin pull-ups. At the end of the quilting sequence, you will be prompted to pull up the bobbin thread the last time and click OK. Be sure to click OK because it completes this process.

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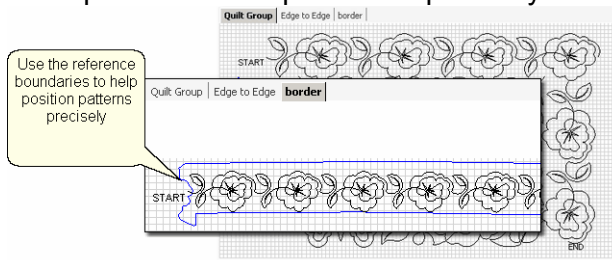
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5.5 Quick Ref Borders

Feature: Borders (Repeat Pattern - without corner patterns)

Steps to follow for borders:

1. Measure the top border height first and determine the height of the pattern. (Maximum border size less margins).
2. Measure the top border width next, using the border seamline as the baseline. Be sure to measure in the direction you will be stitching because the measure process will also determine the square-up angle of the border. Write down these numbers on the diagram for use later.
3. Boundaries are optional but very helpful because they will show (in the preview area) any curvature in the seamlines. Reference boundaries can also trace the edge of a pattern so the border pattern can be positioned precisely around the corners.



4. Click on the pattern to be used. This highlights it (cyan) in the Project Info area.
5. Click on Repeat Patterns icon, edit the pattern details, and choose a Reference point. Move the machine head to that reference point and press OK to set it. CS moves the pattern(s) to the area anchored by the reference point.
6. Edit the size and repeats using the Pattern Details or Repeat Setting Details first. When done, Save the project.
7. Make final adjustments in the preview area last. When done, Save the project.
8. Click on Start_Quilting, CS moves the sewing head & prompts for bobbin pull-up. Press OK when ready to quilt and OK again at the end of the quilting as prompted because this completes the process.

Tip: To audition E2E patterns for a quilt that has a border:

- * Draw a boundary the same height as the border.
- * Move multiple border patterns into the border boundary, using the correct sizing.
- * Move one (or more) E2E patterns into the preview area, and position them next to the border patterns.
- * Modify the size of the E2E pattern until the quilting density is reasonably close to the border.
- * Record the size (height and width) of one of the E2E patterns, and use this size as the beginning size when you begin the E2E process.

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5.6 Quick Ref Panto using Repeats

Feature: Pantograph (E2E) using Repeat Patterns

Background patterns (pantographs) are stitched using the Repeat Pattern features to control the size and positioning. It uses Relocate for alignment after rolling the quilt.

Assumptions: The machine is threaded, bobbins wound, belts engaged and patterns have been added to the project.

Prep Step #1.) Measure the quilt length and width accurately before loading the quilt.


Prep Step #2) Load the quilt and baste the outer edges.

Prep Step #3) Choose a pattern and set the scale.

Prep Step #4) Change the pattern details (height and width) to reflect the scale you prefer.

Steps to follow:

1. Click Boundary icon and click on the UL, UR, LR, LL corners to show quilting space.

2. Click on Repeat_Patterns icon 

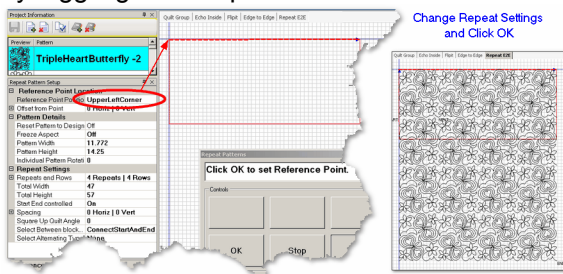
3. Change the Repeat Settings following these steps:

- * Turn Freeze Aspect=On, Enter Total Width

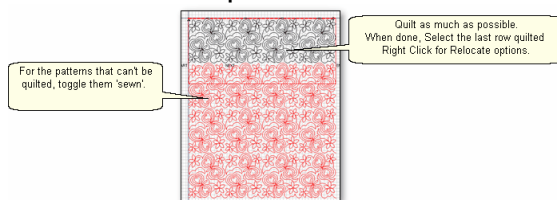
- * Turn Freeze Aspect=Off, Enter Total Height

- * Set Reference Point = Upper Left Corner, move machine to UL corner.

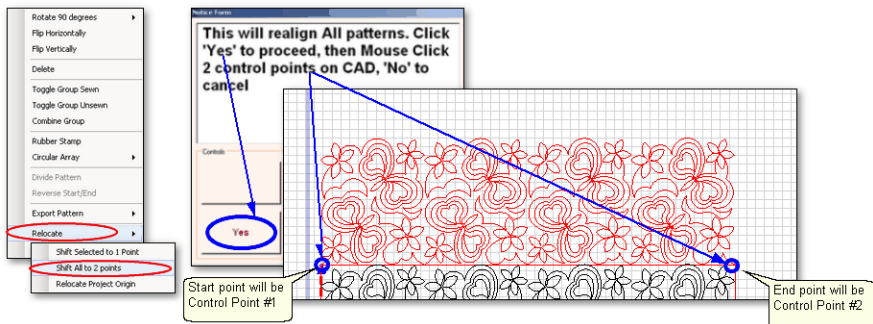
4. Click OK. An image of your entire quilt appears in the Preview area. This method for doing pantographs does not monitor how much area can be quilted at one time, so you need to do it by toggling rows of patterns as sewn or unsewn.



5. Select all the patterns that can't be quilted in the first section, toggle them sewn. Quilt as much as possible.

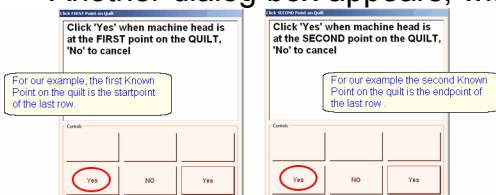


6. Roll the quilt. Choose 2 control points (easy to find on the screen and quilt) to use for alignment. This example uses the start and end points of the previously sewn row, but they could be any 2 points.

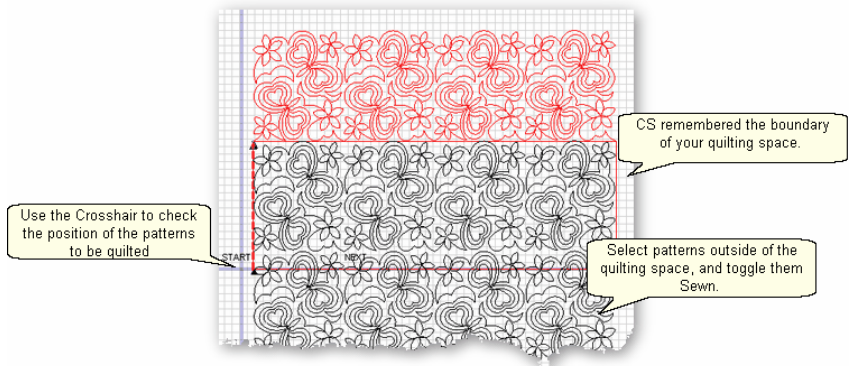


Select the last row quilted, Right Click these patterns.

- Choose "Relocate" and Choose "Shift All to 2 Points".
- A dialog box appears, giving instructions.
 - Click 'Yes' button to remove the dialog box.
 - Use the mouse to click 2 Control Points on the screen.
 - Another dialog box appears, with more instructions.



7. Now you will identify the two corresponding control points on the quilt. Following instructions, Move machine head to Control Point #1 and Click Yes. Following instructions, Move machine head to Control Point #2 and Click Yes.
8. Check the positioning by using the machine crosshairs.

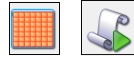


9. Continue until the entire quilt is done.

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5.7 Quick Ref Panto using E2E

Feature: Edge to Edge (E2E)



Assumptions:

Prep Step #1) Measure the quilt length and width accurately before loading the quilt. If you need to stitch off the edge of the quilt, increase your total quilt length. If you are leaving a margin at the top and bottom, be sure to reduce your total quilt length by this amount. Also it is a good idea to reduce the length a little to accommodate shrinkage caused by the quilting. This could be from 1% to 5%, depending on the fabrics, batting and quilting density.

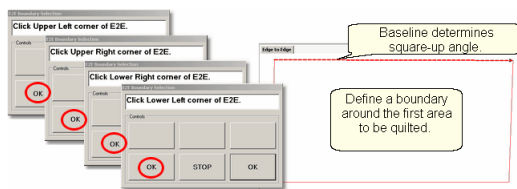
Prep Step #2) Load the quilt and baste the outer edges.

Prep Step #3) Choose a pattern and think about the scale. Large scale, open quilting results in a more supple quilt and small scale, dense quilting is a bit stiffer.

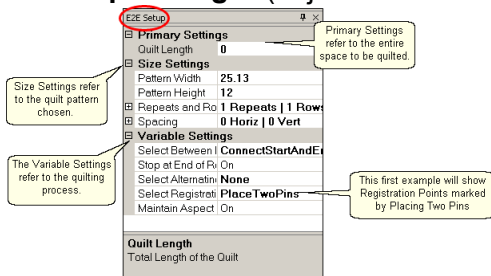
Prep Step #4) Change the pattern details (height and width) to reflect the scale you prefer.

Steps to follow:

1. Click the E2E icon. CS prompts you to click the four corners of the first boundary.



2. Enter the quilt length (adjusted if needed) in the Primary Settings area.



CS measured the width in step 1, and gets the length from the Primary Settings. It now has enough information to automatically calculate the number of repeats and rows required. This is just a suggestion! All settings can be changed in Setup mode (but not in Edit mode).

3. Check the E2E Setup Details:

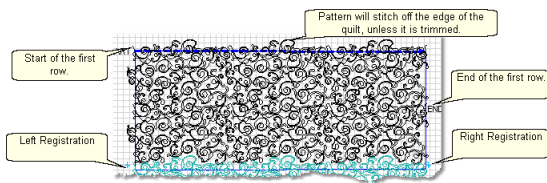
Size Settings:

- * Pattern Width and Pattern Height may be different from what you started with.
- * Repeats and Rows have been set but can be changed if you do it in the setup mode.
- * Spacing refers to the amount of space between patterns, both horizontally and vertically. Adjust these numbers if needed to add or remove space between patterns, especially between the rows.

Variable Settings:

- * Select Between Blocks use Connect Start And End for pantographs
- * Select Alternating type – allows staggered rows.
- * Select Registration Place Two Pins is the default (& method shown here)
- * Maintain Aspect is similar to freeze aspect.

4. Look at the image in the preview area. WYSIWYQ - What you see is what you quilt, so if you don't like it, change it now.



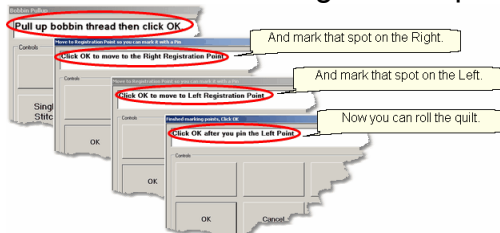
The top edge is the baseline which is used to square up the patterns. The pattern in the example has irregular edges which make it nest nicely. However, the pattern will stitch off of the edge when positioned to eliminate the side gaps. The Trim-Inside function can be used to trim off the excess - just make sure to include the extra space in the "Quilt Length" dimension. When it looks good, Save the project.

5. Click Quilt The machine moves to the start of the first pattern, takes a single stitch and prompts you to pull up the bobbin, so do that. Press OK on the keypad when ready. The first row now begins.

6. At the end of the row, CS stops and prompts you to cut the bobbin thread. It doesn't matter how the bobbin thread is pulled up, secured or trimmed. Just be sure to click OK because it completes this process.

6A. IF you have room for another row *the machine will move to the beginning of the next row, take a stitch, prompt for Bobbin pull-up and click OK to quilt the next row. Repeat these steps until all the rows for the current section are complete.*

7. When CS finishes the last row that fits, you will be prompted to cut the bobbin thread and mark the two registration points. Here is what will happen:



* CS finishes the last row that will fit, prompts you to cut the bobbin thread, and Click OK to complete the end-of-row process.

* CS prompts you to click OK when ready to mark the Right registration point. **Click OK** and the stitcher moves to the first registration point. Mark this spot (where the needle would enter the fabric).

* CS prompts you to click OK when ready to mark the Left registration point. **Click OK** and the stitcher moves to the second registration point. Mark this spot (where the needle would enter the fabric). **Click OK** to complete the process.

[Save the project](#)⁶⁷.

8. Roll the quilt - baste the sides if desired and check the bobbin thread. It is also a good idea to check that the quilt is still square. Use the channel lock to check that both registration marks are on the same horizontal line.

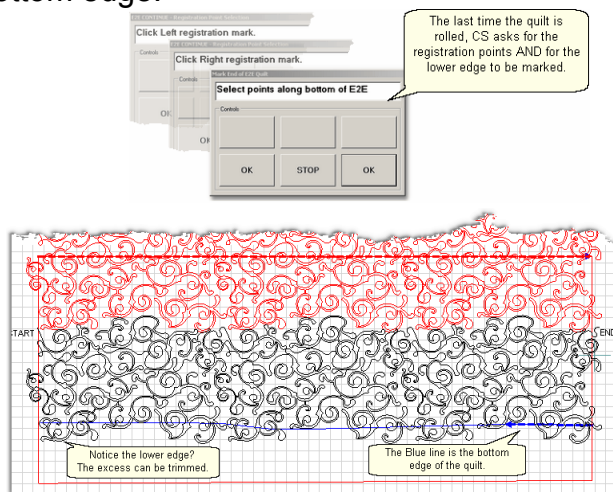
Now finish the quilt by using the Feature: Edge To Edge Continue.

Feature: Edge To Edge - Continue

Assumptions: The first section (or more) is done, the registration points have been marked and the quilt has been rolled.


9. Click EdgeToEdge_Continue
10. CS prompts for left and right registration marks.
11. Check the screen and adjust if needed.
12. Click Quilt. The first row of the new section now begins.
At the end of the row, CS stops, prompts for bobbin pull-up, Click OK.
Repeat each row until the entire current section is done.
CS will again prompt for marking registration points.
Roll the quilt.
Repeat steps 9 - 12 until the last section - when bottom edge of the quilt makes its way up to the current quiltable space.

13. Last Section adjustments are often necessary so the last time you roll the quilt, the prompts are a little different. Click the Left registration mark, Click the Right registration mark, Click points along bottom of E2E, following the actual contour of the quilt, even if the bottom edge is irregular. Press 'Stop' button when done with the bottom edge.



If the pattern extends past the blue boundary line, adjust or trim now.

[Save the project](#)  67.

14. **Click Quilt**  The machine moves to the start of the pattern, takes a single stitch and prompts you to pull up the bobbin, so do that. Press OK on the keypad when ready. The first row of the new section now begins.

15. **At the end of the last row**, CS prompts you to cut the bobbin thread and click OK.

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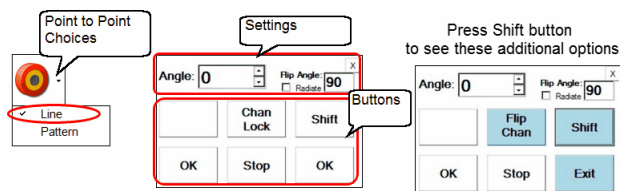
5.8 Quick Ref P2P Line

Feature: Point To Point - Line

Point to point describes a CS process where a series of connected line segments are positioned and stitched. The quilter clicks the points and CS stitches a perfect line between each contiguous pair. Each 'point' is identified by moving the sewing head to each point (in order) and pressing the OK button.

Steps to follow:

- 1. Choose P2P-Line** - (Click on the black arrow to the right of the icon).
- 2. Click on the P2P icon** - A dialog box appears with options:



Settings:

Angle: This is the current angle that will be used when the Channel Lock is turned on.

Flip Angle: The change in the number of degrees, used by the Channel Lock option.

Radiate - Check this option to increase the angle (by flip angle) instead of replace it.

Buttons:

Chan Lock - locks the head so it moves along one fixed angle.

Shift: Press to see additional options (blue buttons). If using the 6-button keypad, press both the Shift and the second option (Flip Chan or Exit) at the same time.

Flip Chan (or increase in Radiate mode) changes the current angle.

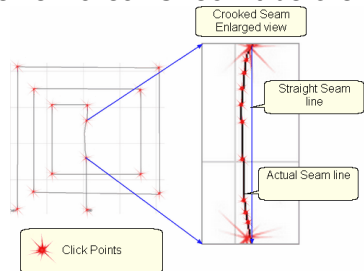
OK (either button) selects the point, based on the position of the needle.

Stop indicates the end of the P2P- line sequence.

Exit will end the P2P mode.

- 3. Press OK to define the path.** Move the machine head from one point to the next, clicking OK on each one. The machine makes a 'pop' noise every time the OK button is pressed. This sound confirms that the point has been registered. The image appears in the preview area of the screen. Press Stop button to create a jump stitch.

- 4. Press 'Shift' and 'Exit' to complete the line segments.** The images appear in the preview area. Check it before stitching.



- 5. Click on Start_Quilting** and the sewing head moves to the Start of the pattern, prompts for bobbin pull up. **Press OK** when ready. At the end, pull up the bobbin thread and click OK to complete the process.



Design It Yourself - It is possible to use the P2P - Line feature using the mouse and working directly in the preview area on the screen.

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5.9 Quick Ref P2P Pattern

Feature: Point To Point - Pattern



Point to point describes a CS process where a series of patterns are positioned and stitched. The quilter clicks the points and CS stitches a pattern between each contiguous pair. Each 'point' is identified by moving the sewing head to a spot on the quilt top (in order) and pressing the OK button.

Prep Step #1 - Optional - Define boundaries to check the P2P placement.

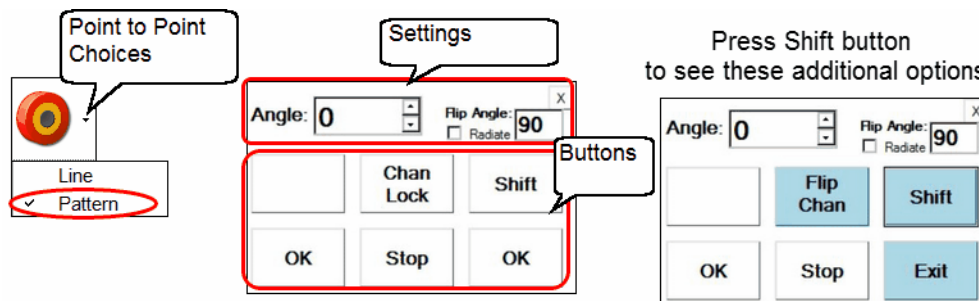
Prep Step #2. Choose a pattern. P2P patterns must stitch from left to right and can be concatenated. Use the Ctrl key to choose multiple patterns.

Prep Step #3. Change pattern details if needed. Be aware of the pattern size, proportion and any margins. Use the Preview area to audition pattern size and placement if desired.

Prep Step #4. Plan the 'Point Layout' before beginning. Most patterns look the best when they maintain their original proportion (Freeze aspect= On), but this means you need to have P2P intervals that also allow the pattern to fill the space.

Steps to follow:

1. **Choose P2P-Pattern** - This is one of the style choices.
2. **Click on the P2P icon** - A dialog box appears with options:



Settings:

Angle: This is the current angle that will be used when the Channel Lock is turned on.

Flip Angle: The change in the number of degrees, used by the Channel Lock option.

Radiate - Check this option to increase the angle (by flip angle) instead of replace it.

Buttons:

Chan Lock - locks the head so it moves along one fixed angle.

Shift: Press this to see additional options (blue buttons). The options appear for several seconds, so press them before they revert back to the defaults. If using the 6-button keypad, press both the Shift and the second option (Flip Chan or Exit) at the same time.

Flip Chan (or increase in Radiate mode) changes the current angle.

OK (either button) selects the point, based on the position of the needle.

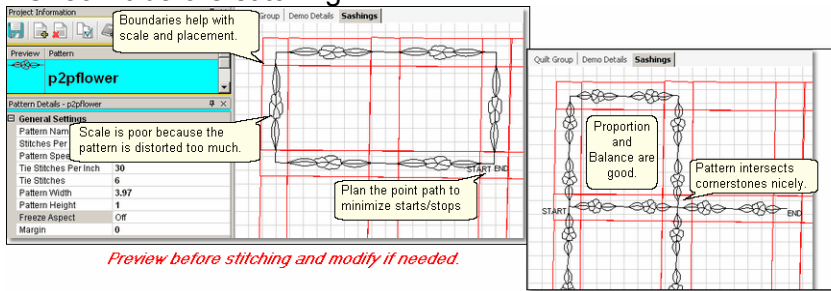
Stop indicates the end of the P2P-pattern sequence.

Exit will end the P2P mode.


3. **Define the path.** Move the machine head from one point to the next, clicking OK on each one. The machine makes a 'pop' noise every time the OK button is pressed. This sound confirms that the point has been registered. The image appears in the preview area of the screen.

4. **Press 'Shift' and 'Exit' to complete the path.** The images appear in the preview area.

Check it before stitching.



5. Click on **Start_Quilting** and the sewing head moves to the Start of the pattern and CS prompts for the bobbin pull-up. **Press OK** when ready to quilt. At the end of the quilting sequence you will be prompted to pull up the bobbin thread and click OK. Be sure to click OK because it completes this process.


 **Design It Yourself** - It is possible to use the P2P - Pattern feature using the mouse and working directly in the preview area on the screen. See [Draw P2P Pattern](#)

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5.10 Quick Ref Trim Inside

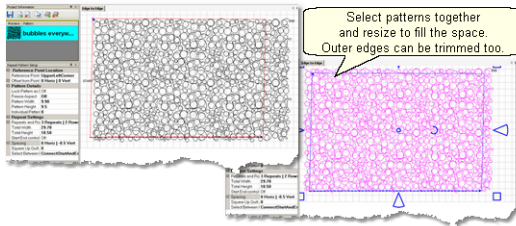
Feature: Trim Pattern - Inside

Steps to follow:

1. Click on the Boundary icon  and follow the prompts to define the boundary of the background area. If the project were to fill the background of an applied block, this would be the outer edges of the block.

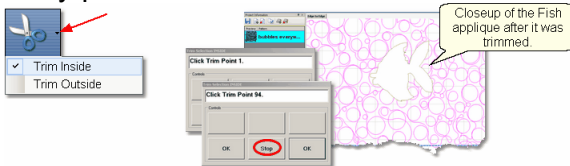
2. Move the background filler pattern in.

Use Pattern_to_Boundary  or Repeat Patterns  depending on how many repeats are needed to fill the area. This example shows repeat patterns, nested vertically by -.5". There is a gap on one side border and an overlap on the other which need to be adjusted.



3. Group the patterns together before adjusting the size and position. If the pattern doesn't fit exactly, let it extend past the outer boundary, and trim the excess.

4. Choose Trim Inside and Click on the Trim icon. CS will prompt for a boundary. Use as many points as needed to define the boundary of the applique.



5. Click Stop when done and CS will erase everything inside the boundary, leaving the filler pattern in the background. Save the project often. Continue with additional Trims as needed.

6. Click on Start_Quilting and CS moves the sewing head to the start of the pattern and prompts for pulling up the bobbin thread. **Click OK** when ready to quilt. If multiple patterns were moved into the boundary, they will stitch in the order they were moved. **Click OK** at the end of the quilting as prompted.

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5.11 Quick Ref Trim Outside

Feature: Trim Pattern - Outside



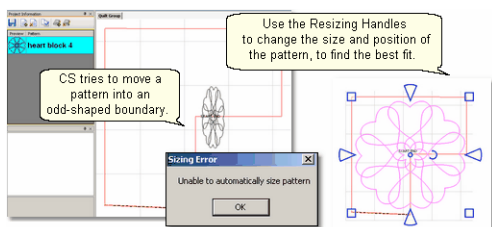
Assumptions: This assumes that the following preparation steps have been completed.

Prep Step #1. Click on Boundary icon. Define the boundary and finish by pressing Stop.

Prep Step #2. Highlight the pattern to be used.

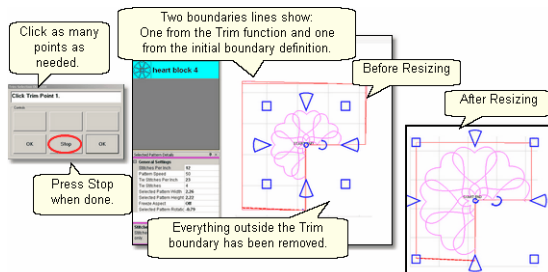
Prep Step #3. Click on Pattern into Boundary icon. When the boundary is odd shaped, CS may have trouble automatically resizing the pattern to fit the space. It will generate a warning message, but still try to resize the pattern.

Prep Step #4. Click on the pattern and resize using the handles until satisfied.



Steps to follow:

1. Click on the pattern image in the preview area to select it (pink).
2. Choose Trim Outside.
3. Click on the Trim icon. CS will prompt for a Trim boundary.
4. Click Stop when done and CS will erase everything outside the boundary.



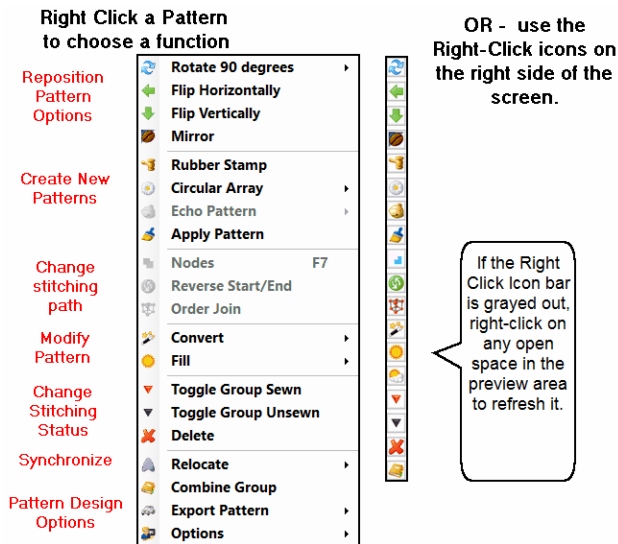
5. **Reposition the pattern image.** Click on the pattern(s) to select if needed. Use the handles to re-size and reposition the pattern so it aligns to the Trim boundary.

6. **Click on Start_Quilting** The sewing head will move to the Start of the pattern. CS will prompt for pulling up the bobbin thread and choosing OK when ready to quilt. At the end of the quilting sequence, you will be prompted to pull up the bobbin thread and click OK. Be sure to click OK because it completes this process.

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5.12 Quick Ref Right Click Options

The Right Click Options appear when selected patterns are Right Clicked. Options presented depend on the patterns selected.



Reposition Options -



Rotate - rotates the pattern as many degrees as you like.



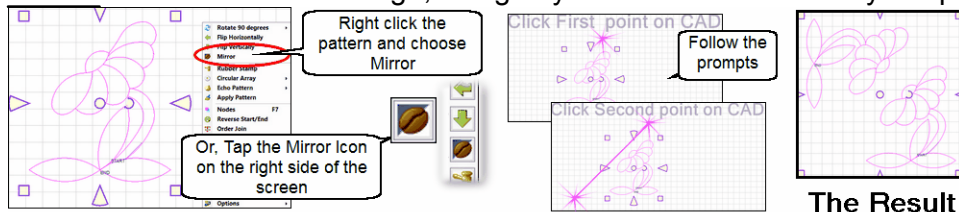
Flip Horizontally - turns the pattern sideways.



Flip Vertically - turns the pattern upside down.



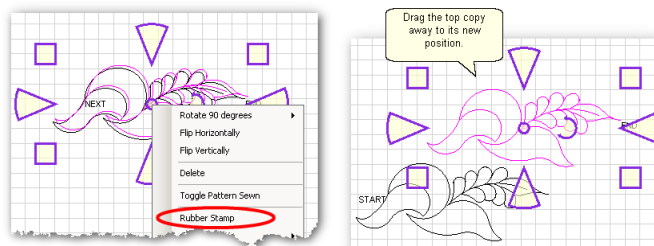
Mirror - creates a mirror image, using any rotation axis defined by the prompts.



Rubber Stamp - makes an exact copy an existing pattern or group of patterns.

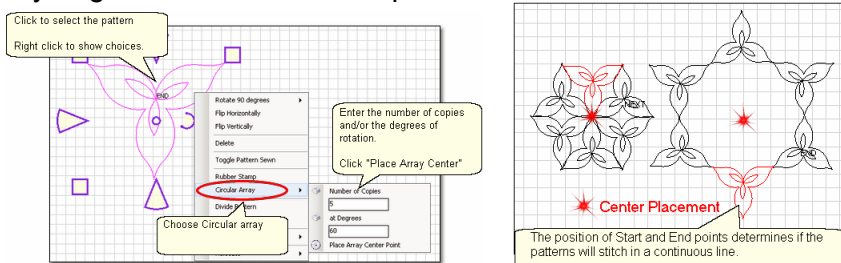
When there are several patterns selected, CS will combine patterns first, and then make a copy of the group, and tag it as being unsewn. Once several patterns are grouped together, there is no Bobbin Pull-up prompt between them and they stay grouped for the entire project.

If patterns are stacked more than 2 deep, use <, > to select them.

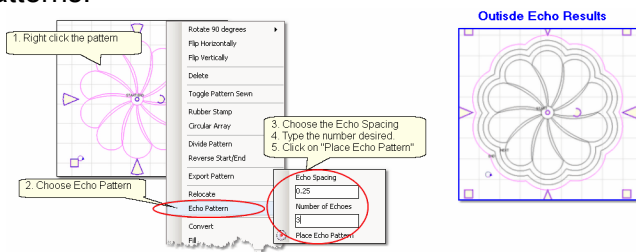




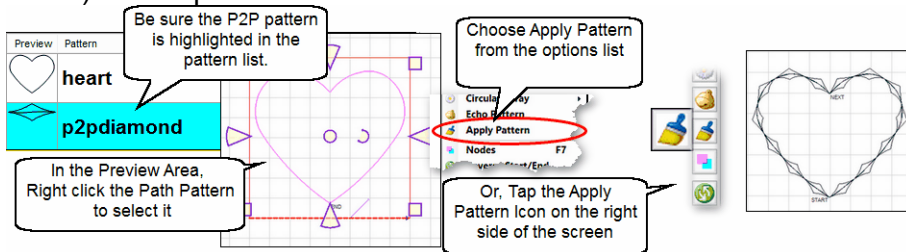
Circular Array - creates a new circular pattern by repeating and rotating a single pattern. CS only needs to know which pattern to use, how many repeats are needed, how many degrees between each repeat and where the center should be placed.



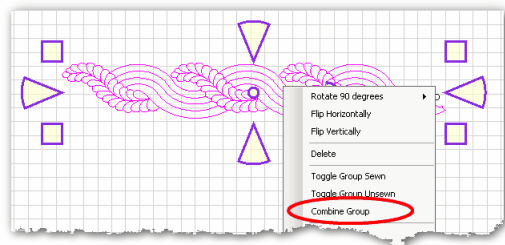
Echo Pattern - means CS creates a new pattern that is an outline of the original. The number of echoes and the spacing is easy. Negative spacing will create inside echo patterns.



Apply Pattern - places multiple P2P patterns along another pattern's path. Choose a simple pattern for the path, and a P2P pattern to be applied (OK to concatenate the P2P patterns) to that path.

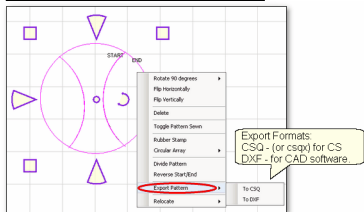


Combine Patterns - groups together all the selected patterns, and treats them like a single pattern for the duration of the project. Be sure to select the patterns in their proper stitching order because that is how they will stitch out.





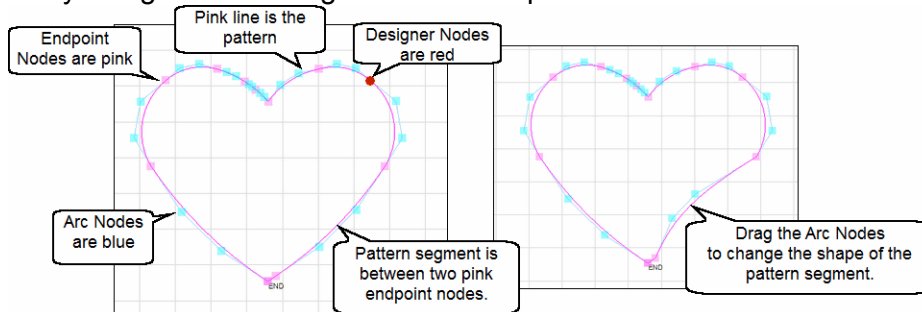
Export Patterns - saves the new design for future use as a special CS file type.



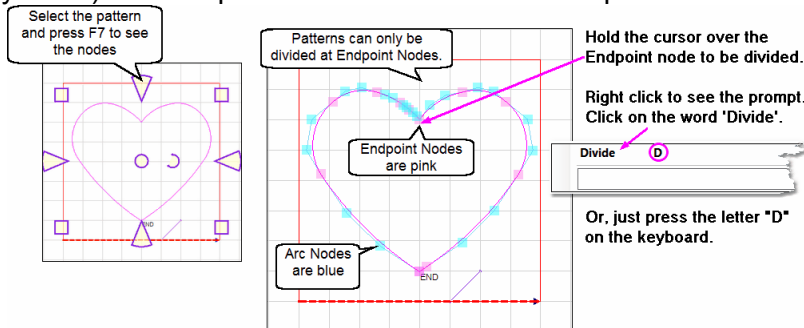
Selecting multiple patterns and then exporting them will result in one exported pattern, not multiples. Use Virtual Stitchout (F2) before exporting to make sure the new pattern will stitch out in one continuous line design. Give the pattern a descriptive name.



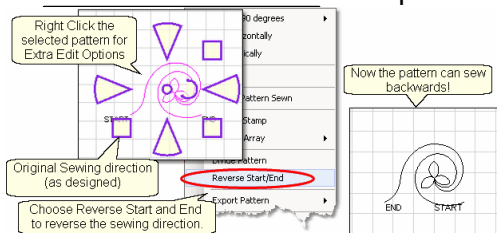
Node Mode (F7) displays the pieces of each pattern, showing all nodes. Endpoint Nodes are pink squares and are used when moving, dividing or combining pattern segments. Arc nodes are blue squares and they are used to reshape the pattern segments, but not for dividing or combining pattern segments. Designer nodes are red dots and can be used by designers to change some of the pattern attributes .



Divide Pattern - Is a function of Node Mode (F7). Right click any Endpoint node and choose Divide (or hover over any pink endpoint node, and press the "D" on the keyboard) and the pattern will be divided at that point.



Reverse Start/End - swaps the start and end points, so patterns stitch backwards!





Order Join - is used when a pattern has been separated into segments for modification, and needs to be reconnected. The pattern segments are combined and resequenced based on their relative positions.

Select the first pattern segment, right click it and choose Order Join.

Order Join checks all the pattern segments on the screen and groups them automatically, based on their relative positions.



Convert - can change the characteristics of patterns, boundaries and trims, making the virtually interchangeable. Patterns can become trims, boundaries, outlines and curves.

Select the pattern being changed.

Right click the pattern, Choose Convert and choices appear.

or Tap the Convert Icon and Convert Choices appear.

- P2T Pattern to Trim
- P2B Pattern to Boundary
- P2O Pattern to Outline
- P2C Pattern to Curve
- B2P Boundary to Pattern
- B2T Boundary to Trim
- T2P Trim to Pattern
- T2B Trim to Boundary



Convert - Boundary (to trim or pattern) requires right clicking an open space in the Preview area.

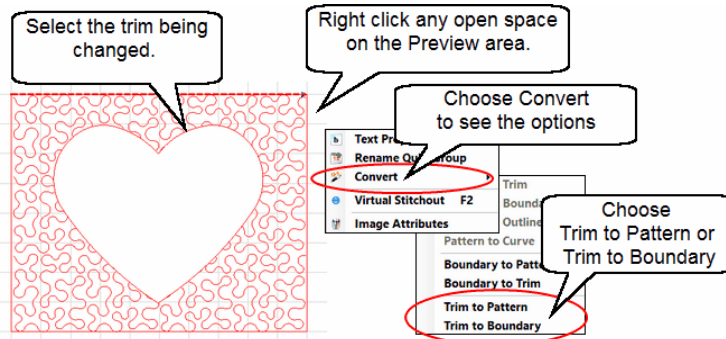
Select the boundary being changed.

Right click any open area on the Preview area.

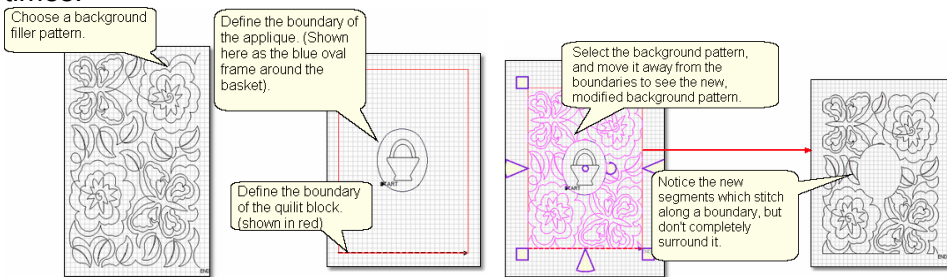
Choose Convert to see the options



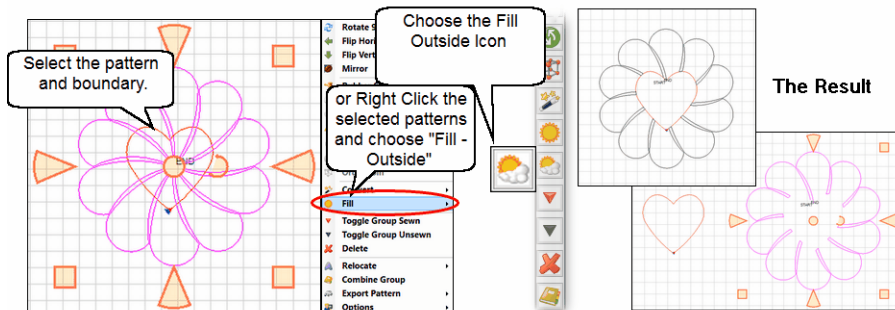
Convert - Trim (to boundary or pattern) requires right clicking an open space in the Preview area.



Fill Inside - is a special feature that uses boundaries and patterns to create a new pattern that stitches in the background. The background fill pattern is modified to fit inside the block, but not stitch over the oval frame. The resulting pattern can be used multiple times.



Fill Outside - is useful for stitching a background design behind an applique, if the background design doesn't need to be bound. There is only one boundary needed for the applique.



Change Stitching Status -



Toggle Pattern Sewn (or Toggle Group Sewn) means it won't stitch out again.



Toggle Pattern Unsewn (or toggle group unsewn) means it will stitch again.



Delete removes the pattern from the preview area.

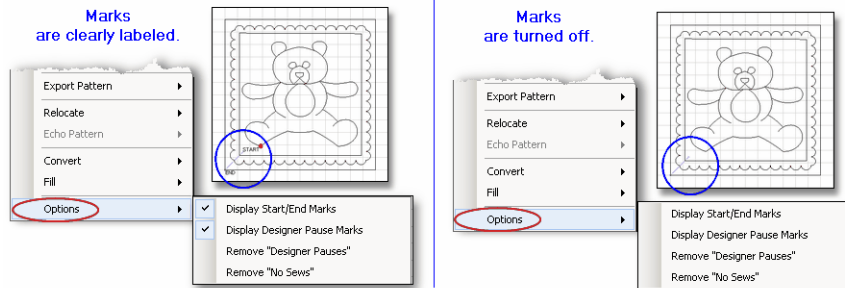
Relocate Patterns - means changing the alignment between pattern positioning on the screen and the quilt. CS has the ability to realign one, several, or all patterns.

- * Shift Selected to 1 Point - will relocate the selected pattern(s). When a quilt has been tightened, or loosened, or shifted for any reason the patterns won't always line up with the original placement, so shift the patterns to fit the quilt!
- * Shift All to 1 Point - will relocate all of the patterns in the active quilt group without

changing the rotation angle.

- * Shift All to 2 Points - will relocate all of the patterns in the active quilt group. This makes it much easier to design a whole cloth quilt, and stitch sections out individually. Using 2 points allows the squareup angle to be determined.
- * Relocate Project Origin - is similar to shifting pattern(s) but it shifts the [Point Of Origin](#)⁶⁷ to force all the patterns to fit the quilt. It uses the starting stitch of one pattern and all the other patterns are realigned automatically. When an E2E pattern becomes mis-aligned, this is the procedure for synchronizing the quilt with the patterns in the preview area.

Options - refer to how patterns are displayed or stitched. Designers can put special notes and pauses in their patterns, and quilters can choose to see them or not.

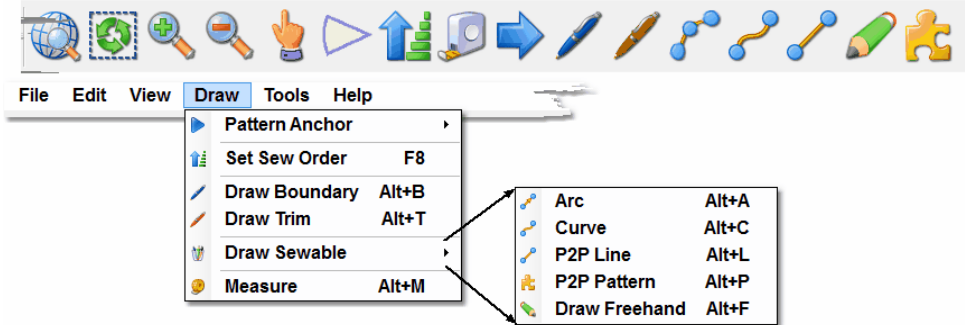


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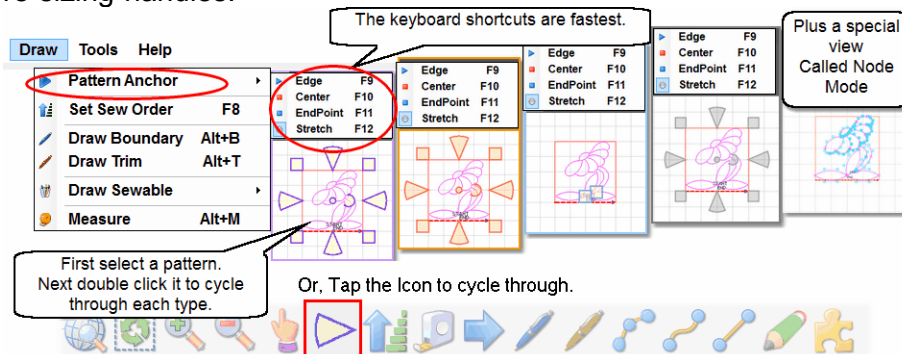
5.13 Quick Ref Draw Options

Design It Yourself: These Draw functions are the keyboard shortcuts referred to in these DIY tips throughout this manual.

A remarkable feature of CS is the ability to draw patterns from scratch, but the power comes from the many choices available to make this very easy.



Pattern Anchor determines how a pattern will behave when it is being modified using the re-sizing handles.

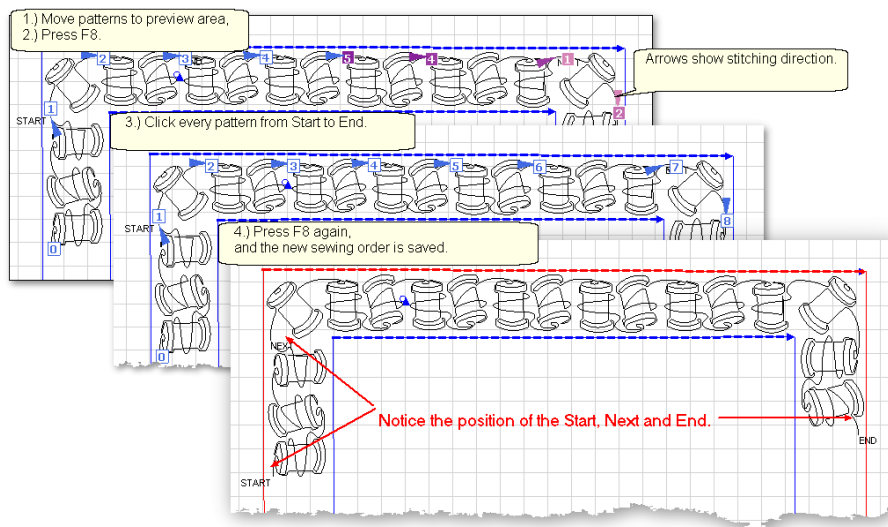


The Pattern Anchor choices are:

- * Edge (F9) The re-sizing handles are purple. When one handle is moved, the opposite edge (or corner) remains fixed or anchored.
- * Center (F10) The re-sizing handles are orange. When any of the handles are moved, the center remains anchored.
- * Endpoint (F11) The re-sizing handles are 2 blue squares, at just the beginning and end of the pattern. When one of the two handles is moved, the other is anchored.
- * Stretch (F12) The re-sizing handles are gray. When one handle is moved, the opposite is fixed. The handle being moved is not limited to one direction, so pattern stretching is possible.
- * Node Mode (F7) is a special view showing all the nodes.

F8 - Set Sew Order

- * Click on Draw command and choose Sew Sew Order (or press F8). All the patterns in the preview area will be numbered (boxes at the beginning of each pattern) and will show a directional arrow (at the end of each pattern). The color of the pattern's number and directional arrow match, so it is clear which arrow belongs to which pattern.



- * Start clicking on the number boxes in the order you want them to stitch. The box background color changes temporarily to white and the arrows change to navy blue, to indicate which patterns have already been changed.
 - * Click on the arrows to reverse the start and end of the pattern.
 - * Press Esc at any time to cancel.
 - * Press F8 when done, and the new order is saved.
- Note: It is always a good idea to use F2 - Virtual Stitchout, to verify the path before you stitch.

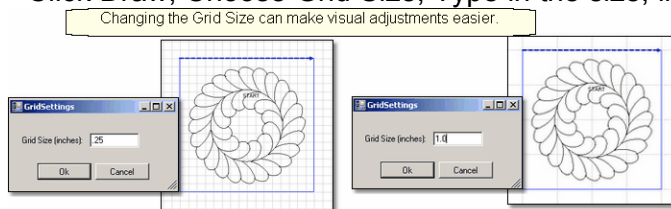
Display Grid & Grid Size

Having a grid really helps when comparing or aligning patterns.

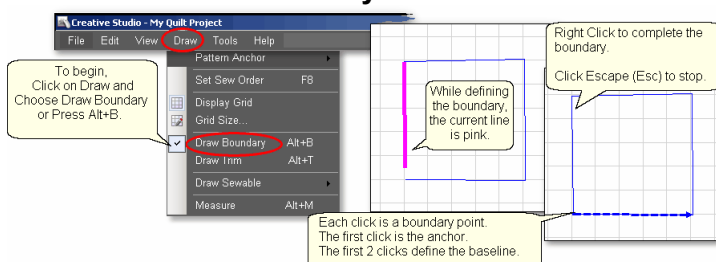
- * Click Draw, Choose Display Grid. A background grid now appears.

To change the size:

- * Click Draw, Choose Grid Size, Type in the size, in inches.



Alt+B Draw Boundary



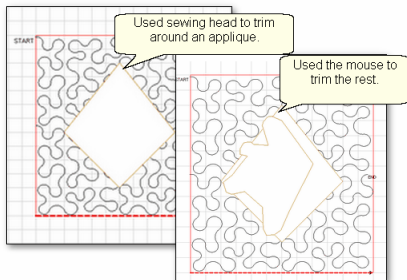
To use Draw Boundary,

- * Click Draw and choose Draw Boundary.
- * Start clicking boundary points on the preview area of the screen. CS assumes you know the process and does not display instructions on the screen. Just like boundaries created using the [Boundary Icon](#)³⁸, the first point is the anchor, the first 2 points define the baseline.

- * Click as many points as needed to define the space.
- * Press Escape to cancel the current boundary if needed.
- * Right Click anywhere in the preview area to complete the boundary. CS will join the last click with the first, enclosing the area. The point identified by the Right click is NOT one of the boundary points.
- * To exit from the Draw Boundary mode, press Esc or Alt+B again.

Alt+T Draw Trim

- * Click Draw and choose Draw Trim.
- * Start clicking trim points on the preview area of the screen. CS assumes you know the process and does not display instructions on the screen.
- * Click as many points as needed to define the area to be trimmed.
- * Press Escape to cancel the current boundary if needed.
- * Right Click anywhere in the preview area to complete the boundary. CS will join the last click with the first, enclosing the area. The point identified by the Right click is NOT one of the boundary points. As soon as you complete the trim boundary, the results appear in the preview area.

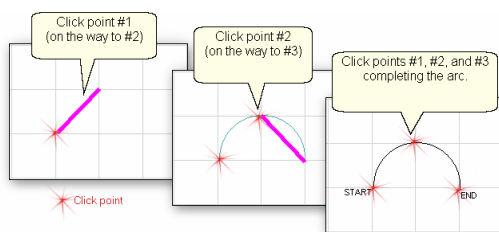


- * Use as many trims as needed to complete the task. Trims can overlap and they remain active for the duration of the project or until they are deleted. Therefore, if patterns are added and/or moved to where a trim is - even after the trim boundary is defined - they will still be trimmed.
- * CS stays in Trim mode, so to exit, press Esc or Alt+T again.

Alt+A Draw Sewable - Draw Arc.

To draw an arc,

- * Press Alt+A (or Click Draw, choose Draw Sewable, choose Arc)

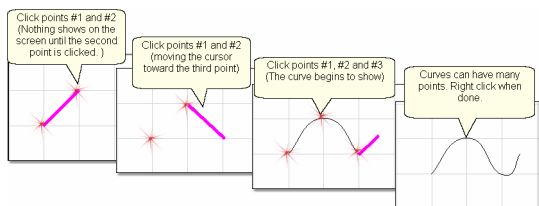


- * With the mouse, click 3 times:
#1 is the start point of the arc, #2 is the middle of the arc (which will be the peak) of the arc,
#3 is the end point of the arc.
- * When done drawing curves, Press Esc or Alt+A.

Alt+C Draw Sewable - Draw Curve.

To draw an curve,

- * Press Alt+C (or Click Draw, choose Draw Sewable, choose Curve)

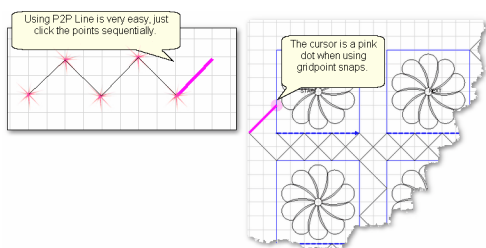


- * With the mouse, click as many times as needed:
#1 will not appear on the screen immediately, but it is there.
#2 will show the location of #1, but does not begin to curve yet.
#3 will begin to show the curvature.
- * When done drawing curves, Press Esc or Alt+C.

Alt+L Draw Sewable - Draw P2P Line.

To begin the line drawing,

- * Press Alt+L (or Click Draw, choose Draw Sewable, choose P2P Line)

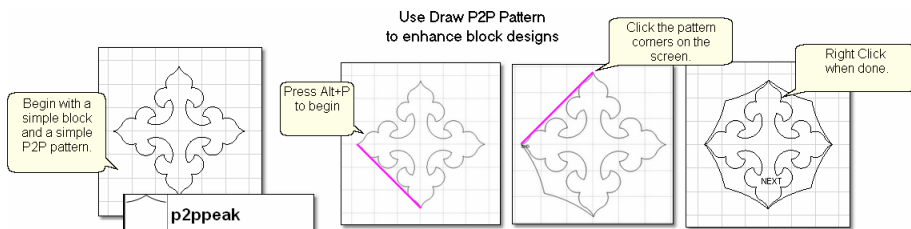


- * Click each point sequentially. Set gridpoint snaps 'on' if desired.
- * Right click to complete the pattern.
- * Continue to define more crosshatching lines as needed.
- * Press Esc or Alt+L again to end line drawing,

Alt+P Draw Sewable - Draw P2P Patterns.

The following demonstrates how to make new patterns by enhancing existing ones using Draw - P2P Pattern.

- * Choose a simple block design & move it to the preview area.
- * Choose a simple P2P pattern (Freeze aspect = On is a good idea).
- * Press Alt+P (or Click Draw, choose Draw Sewable, choose P2P Pattern)

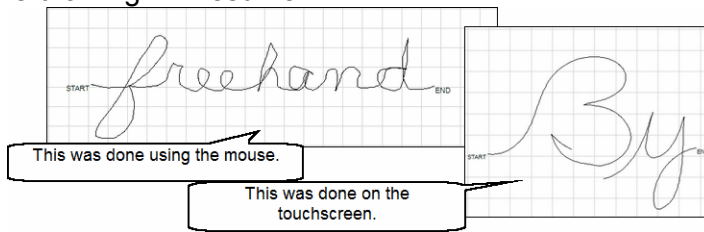


- * Click each point sequentially. Set gridpoint snaps 'on' if desired.
- * Right click to complete the pattern.
- * Continue to define more designs as needed.
- * Press Esc or Alt+P again to end drawing P2P patterns

Alt+F Draw Freehand

If using the mouse to draw, the cursor changes shape, becoming a "+". Press and hold the left mouse button down to begin drawing and move the mouse as smoothly as possible. Releasing the mouse button stops the drawing, but pressing it again begins the drawing again. Each of the resulting pattern sections is really a separate pattern which can be moved, edited and stitched individually.

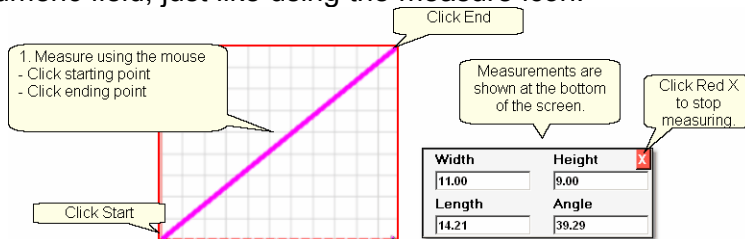
If using a touch screen, touch the screen and move along smoothly, keeping pressure on the screen. Releasing the pressure stops the drawing on the screen. Resume the pressure and the drawing will resume.



* To exit from the Draw Freehand mode, press Escape, or Alt+F, or right click the screen.

Alt+M Measure on the screen

Use the mouse to measure objects that are on the screen. The measurements will be displayed in a dialog box at the bottom of the screen. Measurements can be transferred to numeric field, just like using the measure icon.



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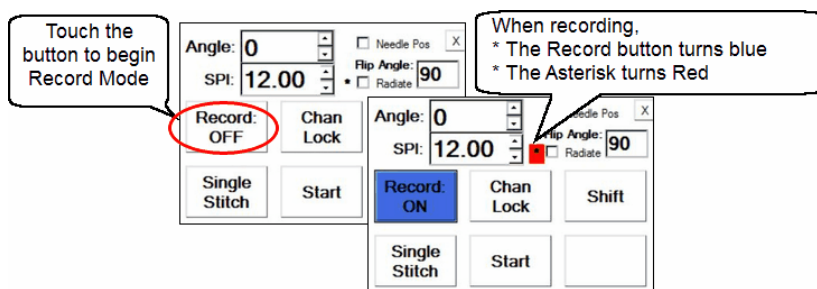
5.14 Quick Ref Record Patterns

Feature: Record mode (using Regulated Sewing feature)

The Record Mode is a subset of the Regulated Sewing feature. All the functions in Regulated Sewing work the same way when the Record mode is active. Recording is possible without the belts being engaged. The belts need to be engaged when stitching the newly recorded pattern however.

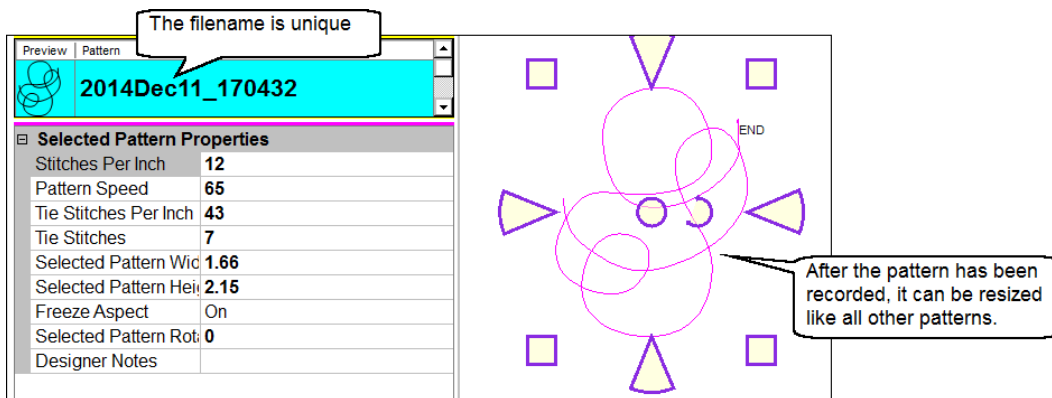
Steps to follow:

1. Choose a style of Regulated_Sewing
2. Click on the Regulated Sewing icon. Move the sewing head to the beginning of the pattern to be recorded.
3. Press Record to begin. Move the stitcher to create a new pattern.



Tip: If you create a boundary first, and zoom to fill the screen, the recording will actively show on the CAD. Some users find it more useful to watch the screen rather than the quilt when recording.

4. Press Record again to end. CS automatically creates a pattern, gives it a name, and saves it to a special folder; C:\Patterns Recorded\yyyyMondd_hhmmss.csq.



Tip: Record the design multiple times if needed. Choose the best and delete the rest. It is a good idea to rename the chosen pattern file if it will be kept for future use.

Press Shift (to see additional keypad choices) and Exit to exit the Regulated Sewing feature.

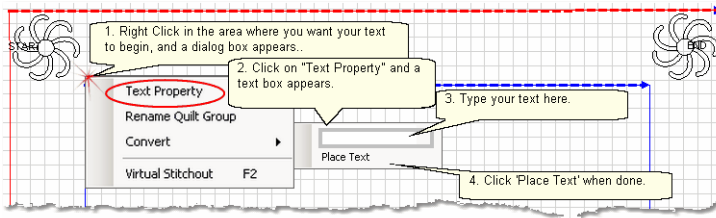
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5.15 Quick Ref Text Patterns

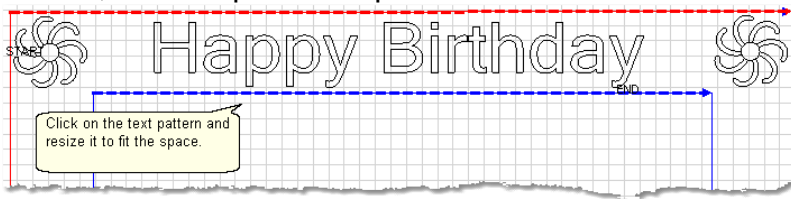
Feature: Creating Text Patterns

Steps to follow:

1. Right Click in an open area of the preview area.
2. Click on 'Text Property' in the dialog box that appears.
3. Click in the text box and type your message. Each message is a pattern that does NOT do word-wrap, but the text patterns can be divided to simulate word wrap.




4. Click on 'Place Text' when done, and the Font dialog box appears.
5. Choose the font style you like. See the 'Sample' box for a preview.
6. Click 'OK', the text pattern is positioned. Resize as needed.



Tip: Each letter in a text block is stitched individually. If you want to hand-tie all threads and bury them yourself instead of using tieoff stitches, change the settings in the configuration form to de-select 'tieoffs', select 'Stop at Jump Stitch' and select 'Bobbin Stitch'. Now CS will stop and prompt for a bobbin pull-up instead of doing tieoff stitches.

7. [Save the Project.](#) 

8. Click on Start_Quilting  and the sewing head will move to the Start of the first letter. CS stitches all letters continuously, dragging the thread between them, and only stops for the bobbin pull-up at the end of the phrase pattern. Remember to click OK because it completes this process.

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5.16 Quick Ref Restart

Feature: Restart



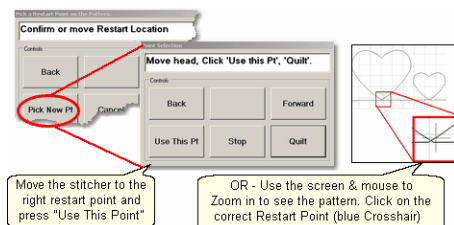
Restarts are needed for a variety of reasons. Either the thread break sensor stops the machine or the machine is stopped by the quilter or an obstacle.

1A. Thread Break: If the machine stopped because it detected a thread break, the pop-up box offers an '**Auto Restart**' option, so press that button. The machine head moves to where CS detected the thread break.

1B. Manual Stop: If the machine was stopped for any other reason, click the **Restart Quilting Icon**. The sewing head goes back to the spot where it detected the 'Stop' command.

2. CS asks if you want to confirm or move the Restart Point. If the stitcher is close to the right spot, use **Back** and/or **Forward** to move the sewing head 7 stitches at a time until the sewing head is positioned properly. **Press Quilt** when ready, and continue to sew.

3. Because there is a delay between the thread breaking and the sensor stopping the machine, the Restart Point probably needs to be moved. Press "**PickNewPoint**" to release the sewing head so you can move it to a different spot. The new point can be identified using the stitcher or the computer screen.



3A. To find the restart point using the sewing head - move the machine until the needle is just above the point where you want to continue stitching. **Press "Use This Pt"** on the keypad. CS moves to the closest stitch and waits for another response. If it looks good, **Press Quilt** and continue to sew. If not, try again by pressing "**Use This Pt**" until the right spot is found.

3B. To find the restart point using the computer screen - look at the image on the screen and find the crosshair mark - it is a long, skinny blue plus "+" sign. Zoom in and out using the roller on the mouse. Find the spot on the screen that corresponds to the restart point on the quilt, and click that spot with the mouse. The blue crosshair will move to this location on the screen and the stitcher will move to that location on the quilt.

4. When ready, **press Quilt**, and continue to sew.

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Statler Stitcher

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