Melco-EMT16x User Guide

Introduction

The Melco EMT-16x is a fully automated 16 needle Industrial embroidery machine used to create multicolored embroidery projects. The purpose of this guide is to break down the process of using the Melco EMT 16x. It will discuss how to utilize two computer programs, Design Shop and Melco OS, which will be used for project preparation and monitoring, Basic maintenance of the machine, usable materials and file types, and a step by step guide to using the machine. This tutorial is intended to be used by students at PCC as a reference after being formally trained by a staff member of the PCC Maker Lab. Once Completed the reader should be able to setup and sew out an embroidery design on the EMT-16X

Safety Information

Operation of this machine involves the use of **sharp objects moving at high speeds**, posing potential hazards. To ensure your safety and the safety of makerothers, please adhere to the following precautions:

- **Secure Work Area:** ensure that your space is clean and organized to prevent accidents and facilitate smooth operation.
- **Inspect Equipment:** Inspect the machine for any signs of wear, damage, or malfunction. Promptly report any issues to a MakerLab technician.
- **Keep Hands Clear:** Avoid placing hands or any body part near the moving parts of the machine while the machine is in motion.
- **Emergency Stop:** Familiarize yourself with the emergency stop function of the machine. In case of an emergency or unexpected situation, use the emergency stop immediately to halt the operation.
- **Monitor Project:** watch machine at all times, Do not leave machine unattended while in operation (Edit Later) Turn machine off after use

Plan Your Project

Before you start, take the time to make (Tutorial Here) or pick out a design from the sample designs folder. If you are bringing your own design, ensure that it is in an appropriate format. A full list of appropriate file formats can be found in the index.

Required Materials

Materials that are required to operate this machine are provided by the PCC MakerLab and can be found next to the machine. Specialty Fabrics and Colors will need to be sourced separately.

Operation of this machine requires the following:

- **Embroidery Design File**
- **Embroidery hoop**
- **Fashion Fabric**
- **Fabric Stabilizer**

Available Hoop Sizes

Mighty Hoop 5.5" x 5.5" - Magnetic embroidery hoop good for most patches and small to medium embroidery projects.

**Strong Magnets: keep away from pacemakers, pinch hazard*

5.5" Round Hoop - Non magnetic alternative to the mighty hoop safe for people with pacemakers/cochlear implants

4.5" Round Hoop -

14.25" x 11.75" - Good for large embroidery projects such as jacket backs or creating batches of patches

Red WACF - Hat Embroidery

Compatible Fabric

Use Freely: Canvas, Home Decor, Felt, Fleece, Cotton BroadCloth

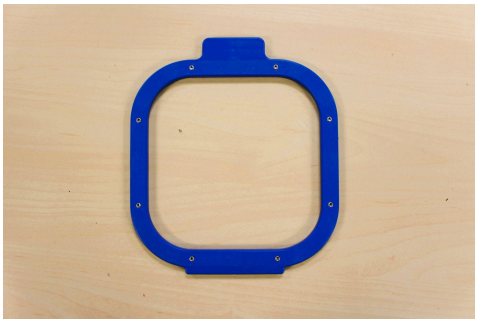
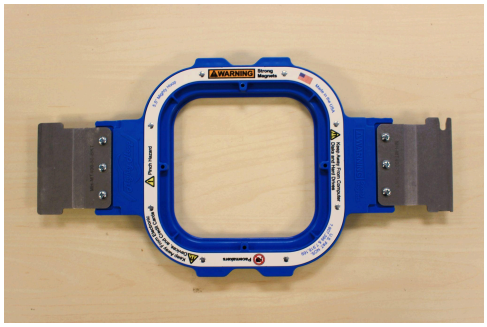
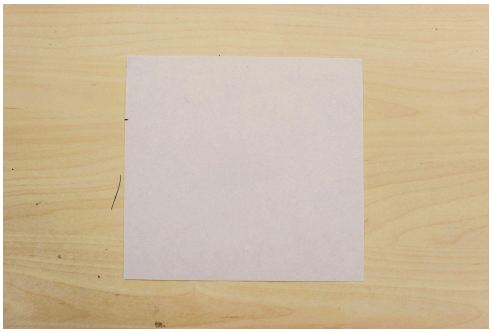
Use With Tech Approval: Jersey, Athletic Fabrics, Chunky Knits, Thick Clothing, Faux Fur

Do Not Use: Tulle, bonded fabrics, Brittle/ Aged Materials

Preparing Fabric

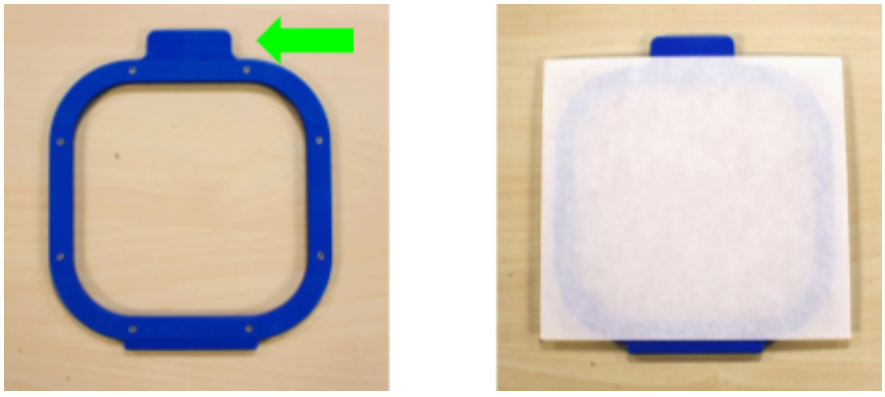
In this walkthrough we will be using the **Mighty Hoop 5.5” x 5.5”** but the process is the same for the other available hoops.

To hoop your fabric you will need the following:

Hoop Bottom 	**Hoop Top** 
Stabilizer Fabric 	**Fashion Fabric** 

1. **Place your stabilizer fabric on top of the hoop bottom**

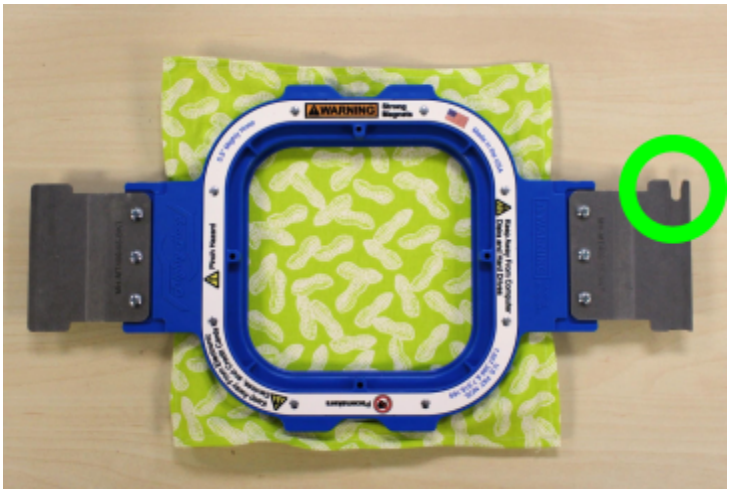
   **note the orientation of the hoop bottom with the handle at the top*



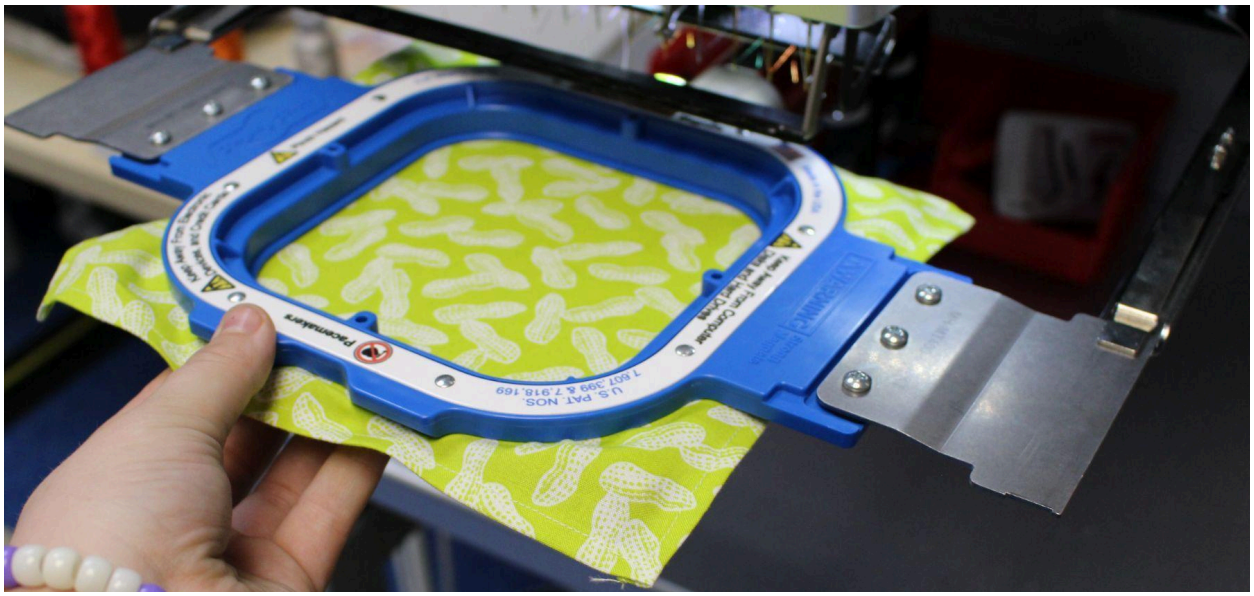
2. **Place your chosen fabric on top of the Stabilizer** ensuring your fabric is covering all four edges of the hoop.

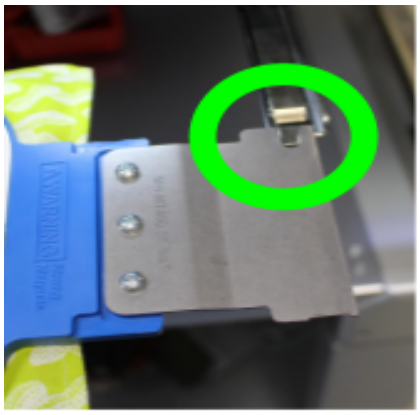


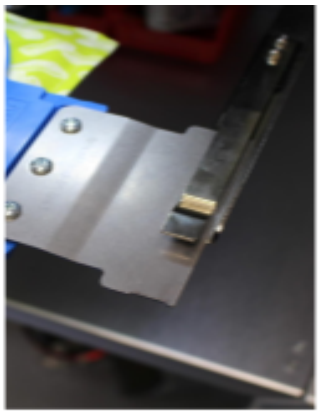
3. **Drop The Hoop Top onto the previous layers** note the orientation of the top hoop and the notch in the metal on the right side.



4. **Load your hooped fabric into the machine**, making sure the notch is oriented towards the machine and the handles are positioned below the latches. Confirm proper insertion by listening for clicks on both sides.









Design Shop

To embroider on the Melco EMT16x you will need an embroidery file, in a compatible file format. *A full list of compatible file types can be found In the index of this document.*

Before proceeding, open Design Shop on the workstation next to the Embroidery Machine. Familiarize yourself with the locations of the following tools located on the Main Bar, View Bar, and Project Panel in the software.



	**View Hoop:** Displays the hoop limits of the currently selected hoop. right-click on this Icon to change the selected hoop.
	**Ruler:** Measures and displays the projected length of the design. Click and drag to use.
	**Load Design:** Sends the design to the machine operating software and loads the design.
	**Notes:** Holds information on Design's Scalability, Digitization, and Intended Materials.

1. **Open your embroidery file in Design Shop** by double clicking the file in your computer, or selecting File > Open in the Design Shop Software.

   ** Sample Project files can be found in the "Designs" folder on the desktop*

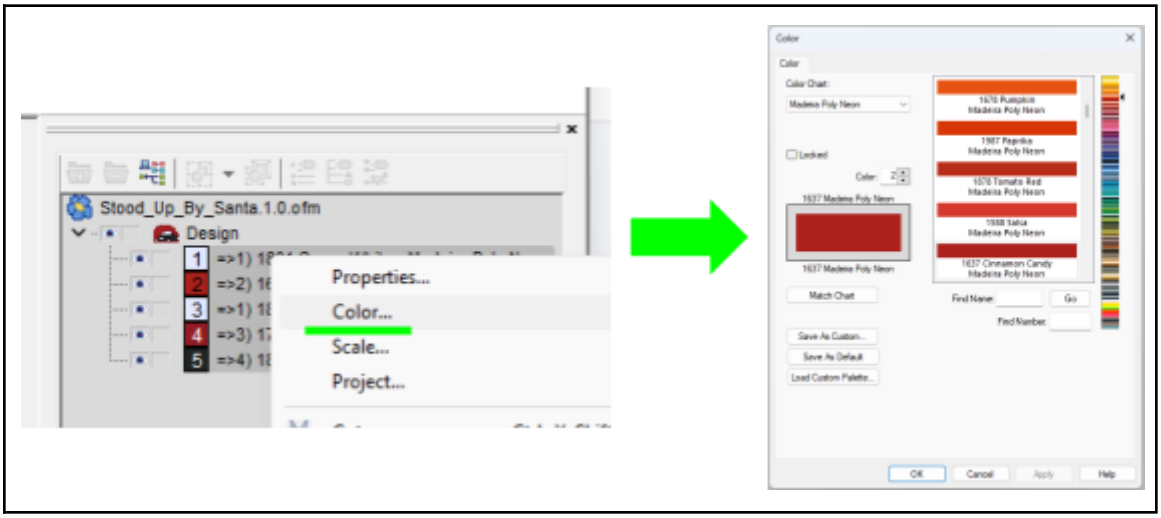
2. **Enable Hoop Visibility** by clicking on the view hoop icon. If needed, Change to the desired hoop by right-clicking the View hoop icon and selecting the appropriate hoop from the *Hoop Name:* drop down menu.

3. **Scale your project to an appropriate size** by selecting your design then right-clicking the design and selecting scale. This will bring up the scale menu where the size can be viewed and adjusted.

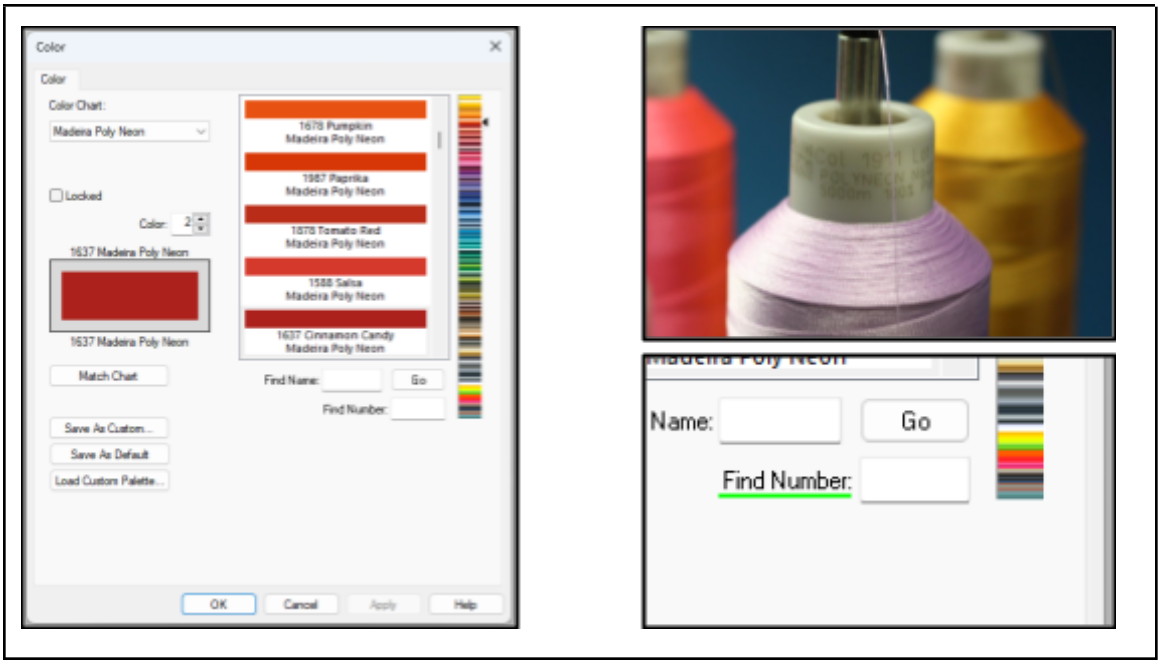
   **Scaling up or down by more that 20% may result in poor sew outs.*

   ⚠️**Your Design should not exceed the Hoop Limits**

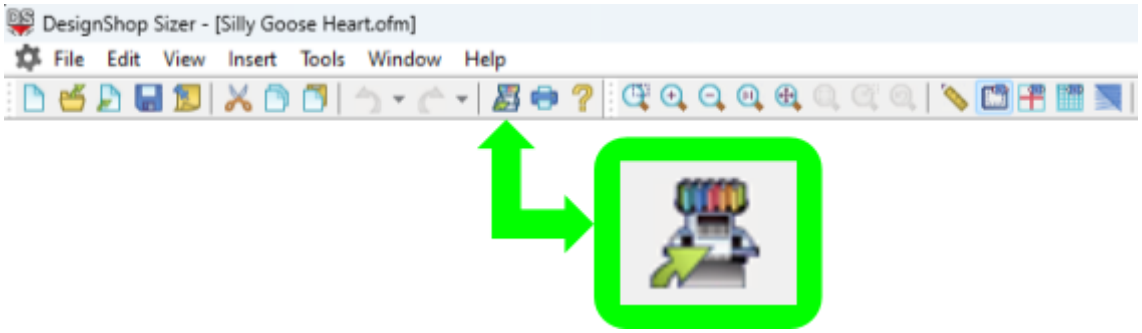
4. **Access the Color Properties window** by right-clicking a color in the Project Panel and choosing "Color."



5. **Assign Your Design Colors**, by selecting a color in the Project Panel, then entering the 4-digit color code of the thread that will be used in the "Find Number" text box. Locate this code at the top of each spool of thread. Repeat for each color.



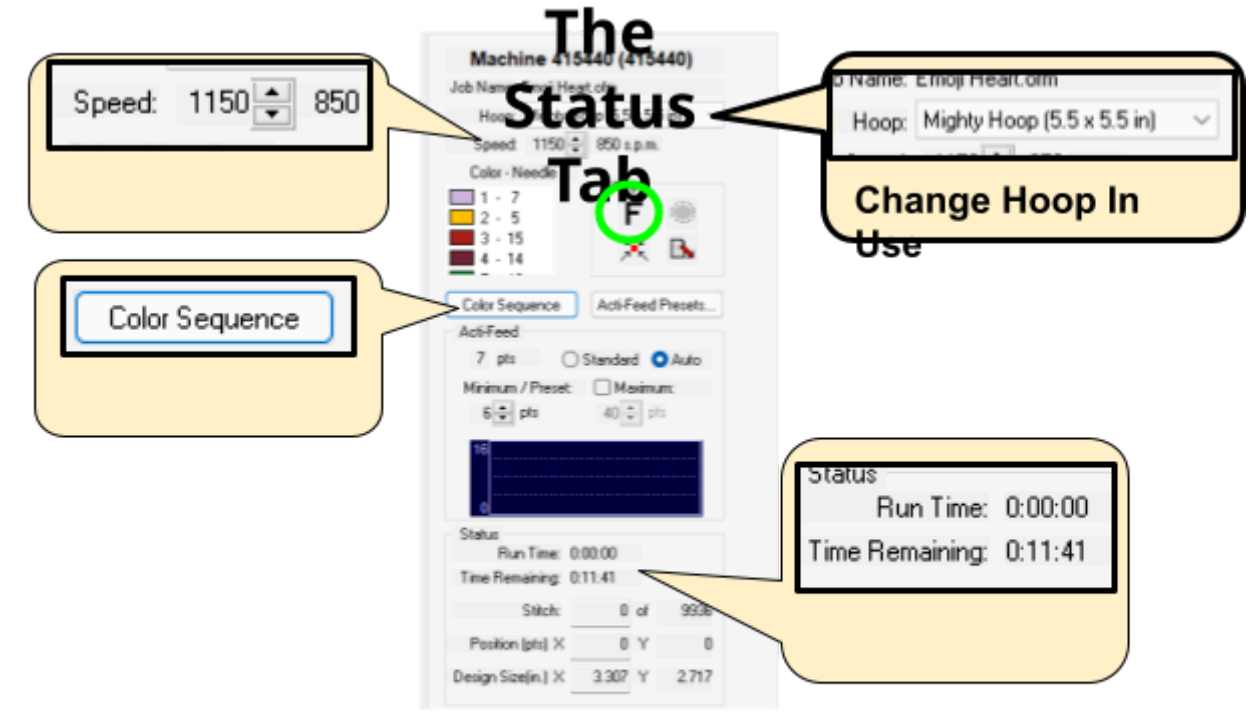
6. Send the edited embroidery file to Melco OS using the “Load Design” button



MELCO OS

In this program we will finish the setup of the embroidery file as well as monitor the progress of the embroidery. Follow these steps once your project has been loaded to the machine from Design Shop

Before you begin Familiarize yourself with the following actions in the software and on the Machine Keypad





F	**Rotate Design:** Rotates The Design By 90 Degrees
3D	**Show in 3D** Display the design rendered with the illusion of depth.

	**Stitches Sewn Only** Displays the design on screen as the design is being sewn.
 	**Center Hoop** will initiate a movement on the machine to move the hoop arms to hoop center.
	**Trim Immediate** Performs a trim command. 
	**Emergency Stop** Press this emergency stop button to stop immediately and cut power to the motors of the machine. Turn the knob clockwise to release.
	**Stop** Press to stop sewing
	**Start** Press to start sewing. Machine will not start if hoop limits have been exceeded.
	**Adjust Speed** Adjusts Sewing speed by +/- 50 spm
	**Trace Design** Traces around the outer edges of the design.
	**Frame Back / Forward** Move through a design one stitch at a time without stitching. Hold to move. Release to stop.

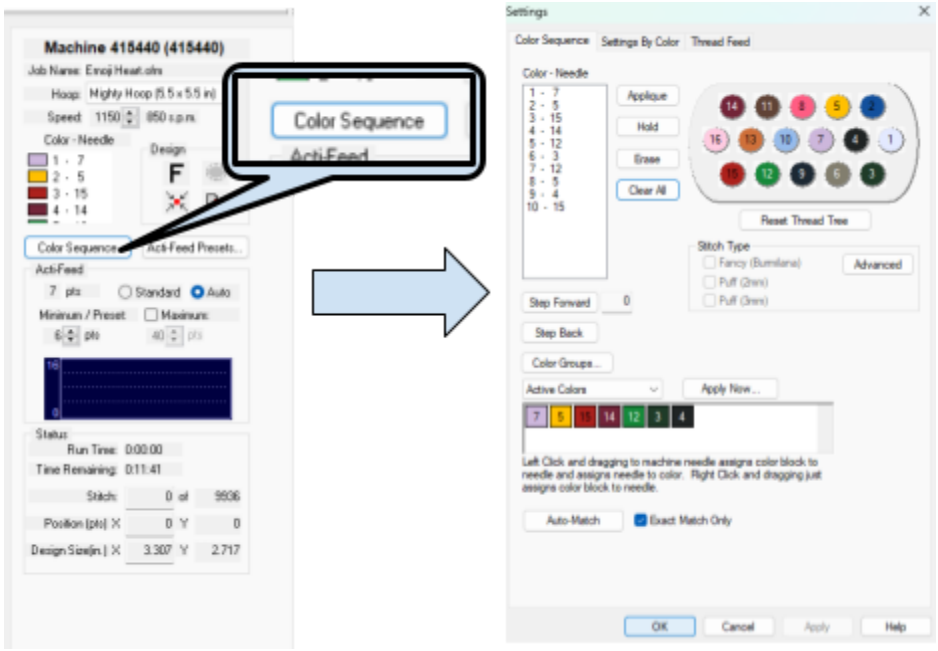
Checking the hoop

1. Click on the hoop selection drop down to View Available hoops
2. Select the hoop that has been prepared for your project.
3. Check that your design is fully within the boundaries of your hoop limits (The dotted line)

   ⚠️**Your Design should not exceed the Hoop Limits**
4. Center the hoop using the machine keypad or, the icon located in the toolbar of the OS

Assigning the colors

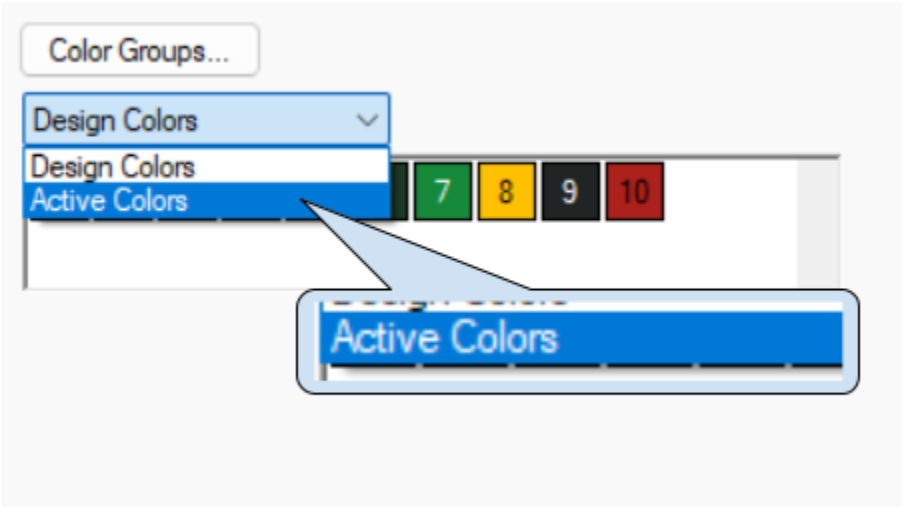
1. **Click the color sequence button** to open the color sequence panel



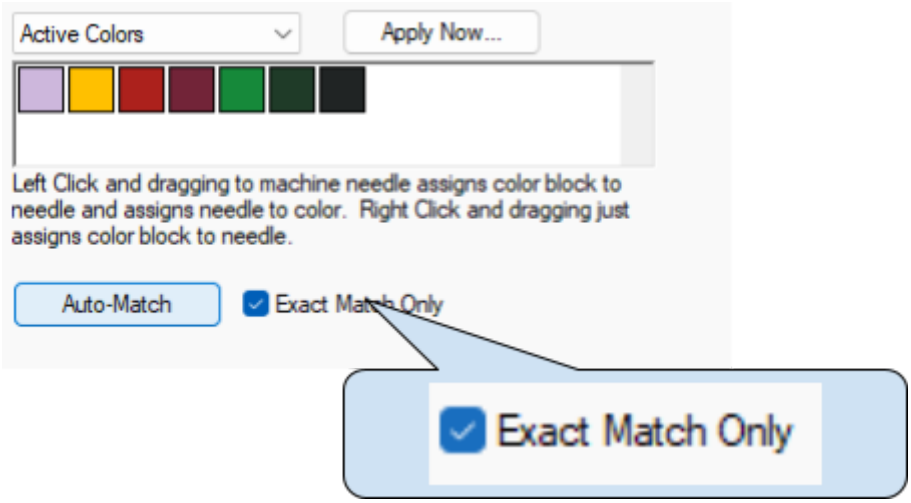
2. **Clear Previous Color Sequence** by clicking clear all



3. **Select active colors** in the drop down menu of the color sequence panel



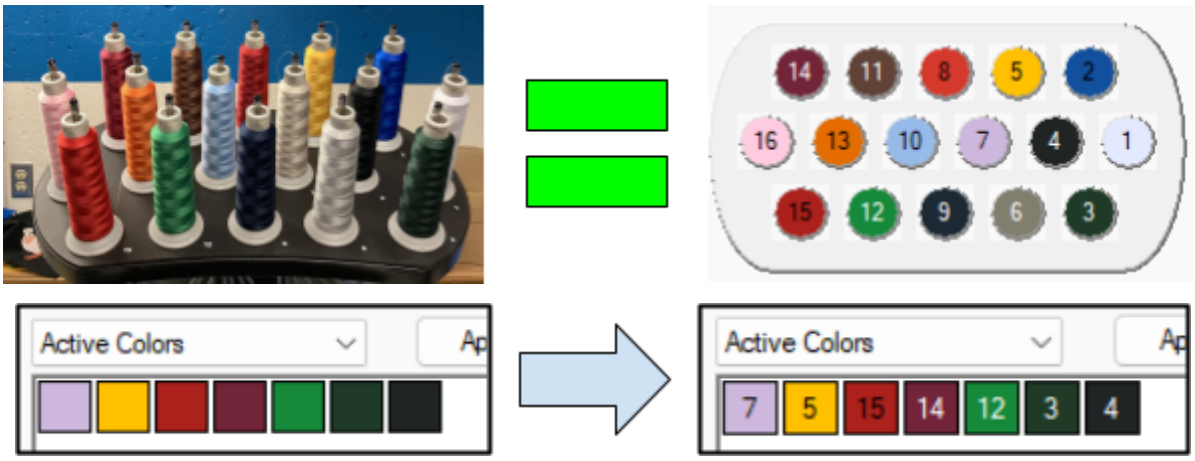
4. **Click auto match** ensuring that the exact match textbox is checked



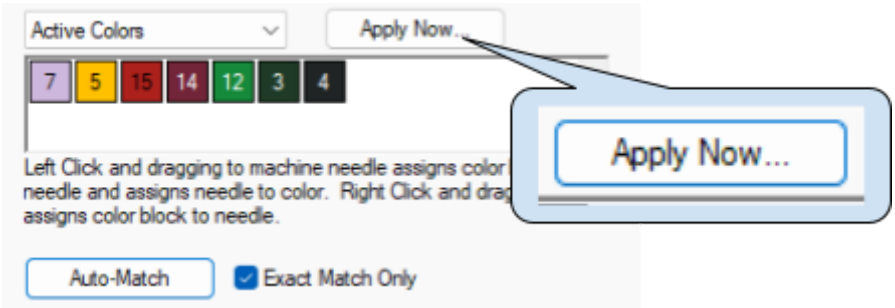
5. **Check all colors in project are assigned to a needle**

5.1. Verify needle locations are accurate between software and machine alert staff if colors don't match.

5.2. If any needles are left unassigned go back to Design shop and check your Design Colors.

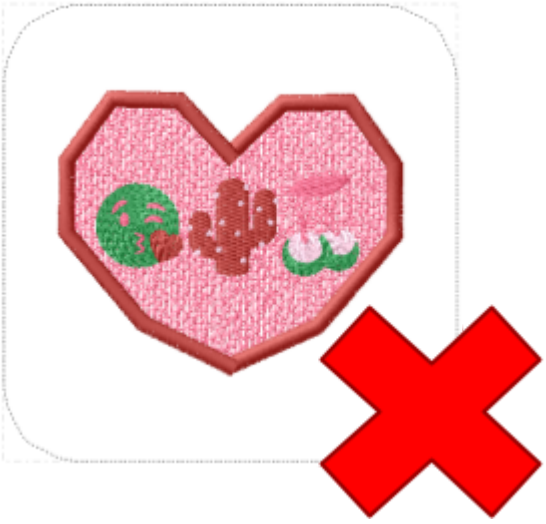


6. **Click Apply**



7. **Check your design,** close the color window and make sure all colors look correct.





Starting the design

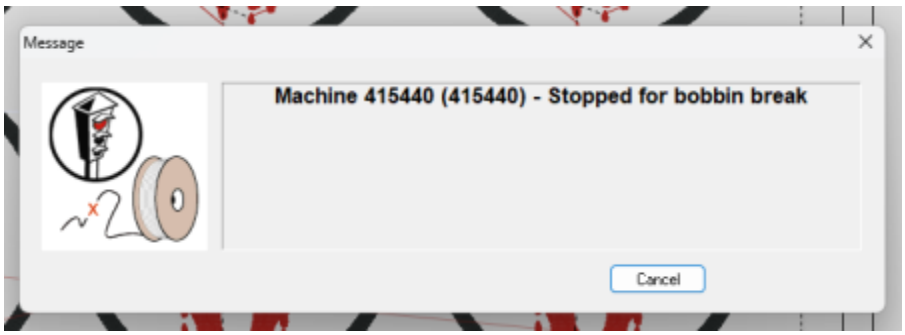
1. **Preflight check**
    a. Is the correct hoop In the machine?
    b. Is the embroidery design within the hoop limits?
    c. Are all colors assigned?
    d. Is your hoop centered?
    e. Do the colors in the software match the colors loaded in the machine?
2. **Trace the design**
3. **Take note of the**
4. **Press The Green start button**
5. **Watch your sew-out**
6. After completion, **Pull out the hoop** by lifting the hoop lock tabs on each side of the hoop.

Congratulations! You have completed your first embroidery project!

Troubleshooting

Most “Real” troubleshooting of the embroidery machine should be addressed by Technicians of the MakerLab. Many issues are file based. Edit later

Bobbin Thread Breaks



If this is your 1st bobbin break ever Alert a Technician, and they will walk you through the Steps Below.

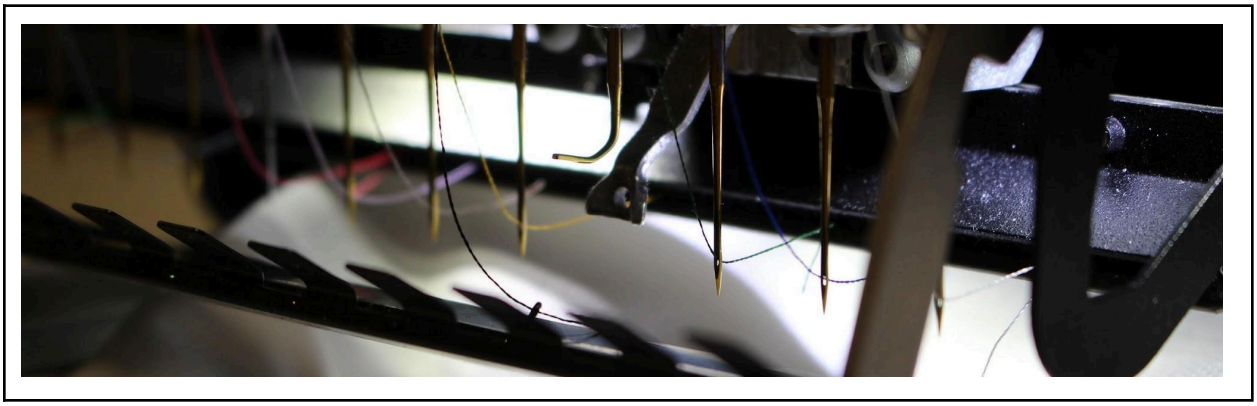
If you are experiencing Multiple bobbin breaks (around 3+) in your design, the speed may be too high, or The issue may be in the design file itself. Ask a Technician for assistance before proceeding.

1. **Trim the Thread** by pressing the Sweeper Button and Needle Button simultaneously
2. **Remove Bobbin case**
3. **Ensure that the Bobbin has Thread**, if there is none do the following:
    a. Remove
    b. Get a new bobbin and find the loose thread
    c. While holding the Thread place the Bobbin in the Bobbin case
    d. Guide the thread through the slit on the side of the case
    e. Wrap the thread around the “Piggy Tail”
4. **Place the bobbin back** into the machine
5. **Continue design**

Thread Breaks

In the case of a Thread Break Ask a Technician for assistance.

Needle Breaks



In the case of a Needle Break Ask a Technician for assistance.

Index

Compatible Embroidery File Types

Extension	File Types		Extension	File Types
.ofm	Melco Project		.shv	Viking D1
.cnd	Melco Condensed (v7 and earlier)		.vip	Husqvarna / Viking
	Melco Condensed (v9 and later)		.dsz	ZSK DSZ
.exp	Melco Expanded		.psf	Pulse PSF
.dst	Tajima		.emb	Wilcom
.fdr	Barudan FDR		.art	Bernina Artista
.fmc	Barudan FMC		.art 50	Bernina Artista
.zsk	ZSK		.art60	Bernina Artista
.pes	Baby Lock / Bernina / Brother		.art70	Bernina Artista
.pec	Baby Lock / Bernina / Brother		.art80	Bernina Artista
.sew	Elna / Janome		.art42	OESD Explorations
.jef	Janome		.jan	Janome Designer
.jef+	Janome +		.hus	Viking
.pcs	Pfaff		.oef	OESD
.pcm	Pfaff Macintosh		.pat	Saurer SHC
.csd	Poem / Singer Embroidery Unlimited		.gnc	Great Notions Condensed
.xxx	Singer		.emd	Elna