GARMENT PRODUCTION

Level-III

Based on November 2023, Curriculum Version II





Module Title: Set and Produce Digital Embroidery

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ACRONYM

IDSP -- Interactive Design Selection Process

OHS - -Occupational health and safety

PPE - --Personal Protective Equipment

RHB –- Incident Reporting Form

TTLM -- Teaching, Training and Learning Materials

MSDs --- Musculoskeletal disorders

SDS -----Safety data sheets

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INTRODUCTION ABOUT THIS MODULE

Digital embroidery is used to add logos and monograms to business shirts or jackets, gifts, and team apparel as well as to decorate household linens, draperies, and decorator fabrics that mimic the elaborate hand embroidery of the past. This unit of competence covers works requirements, software program features, work pieces and workstation, produces digital embroidery and dispatch completed work. In generally, this module is designed to meet the Garment industry requirement under the garment production occupational standard, particularly for the unit of competency: Set and produce digital Embroidery

This module covers the units:

- Work Requirements
- Work pieces and workstation
- Produce Digital embroidery
- Dispatch Completed Work

Learning Objective of the Module

- Obtain Work Requirements
- Prepare work pieces and workstation
- Produce digital embroidery
- Dispatch completed work

Module Instruction /for the module/

For effective use this modules trainees are expected to follow the following module instruction:

1. Read the information written in each unit
2. Accomplish the Self-checks at the end of each unit
3. Perform Operation Sheets which were provided at the end of units
4. Do the “LAP test” giver at the end of each unit and
5. Read the identified reference book for Examples and exercise

UNIT ONE: Work Requirements

This unit is developed to provide you the necessary information regarding the following content coverage and topics:

- Specifications for embroidery
- Required program features
- Garment considerations
- Machine requirements

This unit will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Identify embroidery specifications
- Identify software program features
- Identify garment considerations
- Identify machine requirements

1.1 Specifications for embroidery

Embroidery is a decorative art form that involves stitching designs onto fabric using a needle and thread. The specifications for embroidery can vary depending on the desired outcome, but here are some general considerations:

1. **Design:** Begin by determining the design you want to embroider. It can be a pre-existing pattern or something you create yourself. Consider factors such as size, complexity, and level of detail.
2. **Fabric:** Choose a suitable fabric for embroidery. Common choices include cotton, linen, silk, denim, and various blends. Ensure that the fabric is stable and can withstand the stitching process without distorting or tearing.
3. **Thread:** Select the appropriate thread for your project. Embroidery threads come in various materials such as cotton, silk, rayon, polyester, and metallic.
4. **Needle:** Use an embroidery needle that is suitable for your fabric and thread. The size of the needle may vary depending on the thickness of the fabric and thread. Thicker fabrics may require larger needles to accommodate the thread.
5. **Hoop or frame**: Consider using an embroidery hoop or frame to stabilize the fabric during stitching. Hooping keeps the fabric taut, preventing wrinkles and ensuring more accurate stitching.
6. **Stitching techniques:** There are numerous embroidery stitches to choose from, including satin stitch, backstitch, running stitch, French knot, chain stitch, and many more. Select the stitches that best complement your design and achieve the desired effect.
7. **Color and shading:** Determine the color scheme for your embroidery project. Consider using complementary or contrasting colors to make your design stand out. Shading techniques, such as blending different thread colors or using variegated threads, can add depth and dimension to your embroidery.
8. **Placement:** Decide where you want to place the embroidery on your fabric.
9. **Finishing:** Once the embroidery is complete, you may want to secure the back of the fabric to prevent the threads from unraveling. This can be done by adding a backing fabric or using a fray check product.

10. **Care instructions:** Finally, consider any special care instructions for your embroidered piece. Some embroider may be delicate and require hand washing or gentle machine washing, while others may be more durable and suitable for regular laundering.

Remember that these specifications are general guidelines, and specific projects may have additional considerations. Experimenting with different techniques and materials can help you achieve unique and personalized embroidery results.

1.2 Embroidery software program

Garment embroidery software programs offer a range of features to help users create and customize embroidery designs for garments. Here are some common features found in garment embroidery software:

1. **Design Creation and Editing:** Software programs provide tools for creating and editing embroidery designs. Users can draw or import artwork and convert it into embroidery designs. They can modify the design by resizing, rotating, and mirroring elements, adjusting stitch types, and adding or removing elements as needed.
2. **Stitch Types and Effects:** Garment embroidery software offers various stitch types and effects to enhance the design. Users can choose from options like satin stitches, fill stitches, appliqué stitches, running stitches, and more. They can adjust stitch density, stitch length, and other parameters to achieve the desired look and texture.
3. **Lettering and Monogramming:** The software often includes built-in fonts and monogramming features. Users can add text to their designs, customize the font style, size, and spacing, and create monograms with multiple letters or initials.
4. **Thread Color Customization:** Users can select thread colors from a thread library or specify custom colors using RGB or Pantone color codes. The software allows users to assign different thread colors to different elements of the design, giving them control over the final appearance.
5. **Design Manipulation:** Garment embroidery software enables users to manipulate designs in various ways. They can merge or separate design elements, group or ungroup objects, align and distribute elements, and create mirror images.

6. **Virtual Preview:** Software programs often provide a virtual preview feature that allows users to see how the design will look when stitched on a garment or fabric. This helps users visualize the final result and make any necessary adjustments before stitching.
7. **File Format Support:** Garment embroidery software supports different embroidery file formats, such as DST, PES, EXP, and more. This allows users to save their designs in a format compatible with their embroidery machines.
8. **Machine Compatibility:** Some software programs are specifically designed to work with certain embroidery machine brands or models. They provide compatibility and integration features to ensure seamless transfer of designs from the software to the embroidery machine.
9. **Stitching Order and Sequence:** The software helps users define the stitching order and sequence of elements in the design. This is important to ensure proper layering and avoid unnecessary jumps or thread trims during the embroidery process.
10. **Design Management and Organization:** Garment embroidery software often includes features for managing and organizing design files. Users can create folders, categorize designs, add tags or descriptions, and easily search for specific designs when needed.

These are some of the common features found in garment embroidery software programs. The specific features may vary depending on the software brand and version.

What is Digital embroidery?

Digital embroidery is a process that combines traditional embroidery techniques with modern technology. It involves creating or importing embroidery designs into specialized software, customizing them, and converting them into digital embroidery files. These files are then stitched onto fabric using an embroidery machine.

- Digital embroidery offers several advantages over traditional hand embroidery. It allows for more accurate and precise designs, faster production times, and consistent reproduction of complex designs. The software enables easy customization and editing, making it suitable for both small-scale and large-scale production. Digital embroidery machines can handle multiple colors and intricate details with ease.

- This technique is widely used in industries such as fashion, home decor, promotional products, and personalized gifts. It is commonly used to create embroidered logos, monograms, patches, appliqués, and intricate designs on garments, accessories, and textiles

Best Practices for Digitizing Embroidery File Types, Formats and Software Advice, tips, and tricks for apparel decorators learning to digitize embroidery designs.

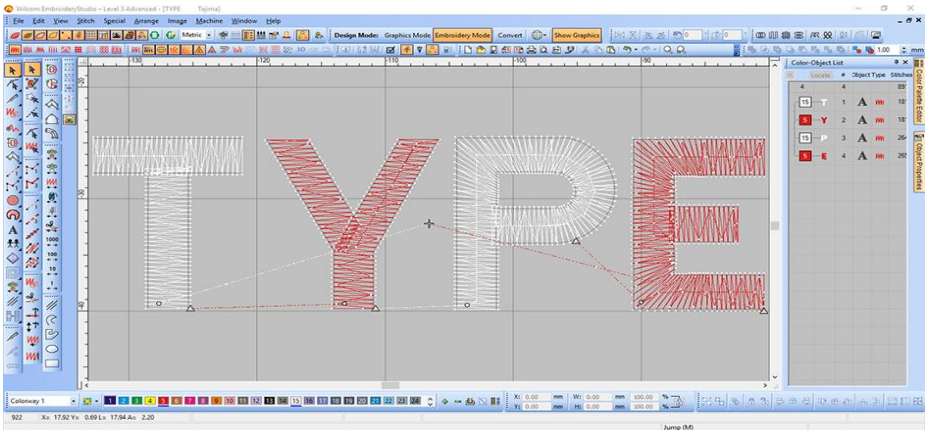


Figure 1.1 digitize embroidery designs

Embroidery is the craft of decorating fabric using a needle to apply thread or yarn. Embroidery may also incorporate other materials such as pearls, beads, quills, and sequins. In modern days, embroidery is usually seen on caps, hats, coats, blankets, dress shirts, denim, dresses, stockings, and golf shirts. Embroidery is available with a wide variety of thread or yarn color. Some of the basic techniques or stitches of the earliest embroidery are stitch, buttonhole. Blanket stitch, running stitch, satin stitch, cross-stitch. Women long embroidery dress.



Figure 1.2 Women long embroidery dress

The concept of computerized embroidery is quite simple. A design file in machine readable form is created using suitable software on a computer. Now the design file containing the complete information about the no. of stitches required, the colour scheme and the fabric is saved in either a floppy or a pen drive. The saved file is now transferred into the control panel of the embroidery machine. The pre embroidery process is completed and the machine is then switched on the machine now stitches the embroidery on the fabric sample or other similar item. This is how the whole computerized embroidery is completed.

The following are some required program features for digital embroidery:

1. **Design creation and editing:** The program should allow you to create and edit embroidery designs. This includes features such as drawing tools, shape tools, and text tools.
2. **Digitizing:** The program should be able to digitize embroidery designs. This is the process of converting a design into a machine-readable format.
3. **Stitch generation:** The program should be able to generate embroidery machine files. These files contain all of the information needed for the embroidery machine to sew the design.
4. **Previewing:** The program should allow you to preview the embroidery design before stitching it. This allows you to check for any errors in the design and to make any necessary adjustments.
5. **Printing:** The program should allow you to print embroidery designs. This can be useful for transferring designs to fabric or for creating templates.

In addition to these required features, some digital embroidery programs may also include additional features such as:

6. **Support for multiple embroidery machines:** The program may support multiple embroidery machines from different manufacturers. This allows you to use the same program to embroider on different machines.
7. **Stitch libraries:** The program may include a library of pre-made stitches. This can be useful for creating embroidery designs without having to create your own stitches.

8. **Embroidery fonts:** The program may include a library of embroidery fonts. This allows you to add text to your embroidery designs.
9. **Image tracing:** The program may be able to trace images and convert them into embroidery designs. This can be useful for creating embroidery designs from existing images.
10. **When choosing a digital embroidery program**, it is important to consider the features that are important to you. If you are a beginner, you may want to choose a program with a user-friendly interface and a variety of pre-made designs. If you are more experienced, you may want to choose a program with more advanced features such as stitch libraries and embroidery fonts.

Here are some additional tips for choosing a digital embroidery program:

11. **Read reviews of different programs online.** This can help you to get an idea of the pros and cons of different programs and to choose a program that is right for you.

Try out different programs before you buy one. Many digital embroidery programs offer free trials. Consider your budget. Digital embroidery programs can range in price from a few dollars to several hundred dollars. Choose a program that fits your budget and your needs. By following these tips, you can choose a digital embroidery program with the features you need to create beautiful embroideries.

Garment embroidery software programs

Some popular garment embroidery software programs include:

1. **Wilcom Embroidery Studio:** Wilcom is a well-known provider of embroidery software, offering a comprehensive suite of tools for design creation, editing, and production management.
2. **Pulse ID:** Pulse ID is another widely used embroidery software program that offers advanced design capabilities, including digitizing, lettering, and stitch editing.
3. **Tajima DG/ML by Pulse:** Tajima DG/ML is a powerful embroidery software program that supports a wide range of embroidery machine formats and provides tools for design creation, editing, and production management.

4. **Hatch Embroidery:** Hatch Embroidery is a popular embroidery software program that caters to both beginners and professionals. It offers a range of features for design creation, customization, and production planning.
5. **Floriani Total Control:** Floriani Total Control is a comprehensive embroidery software program that provides advanced design editing tools, lettering options, and production management features.

These software programs typically offer features such as design digitizing, lettering, stitch editing, color management, and machine compatibility settings. They allow users to import or create designs, customize them with various stitch types and colors, and prepare them for stitching on embroidery machines.

It's important to note that the specific features and capabilities of each software program may vary. It's recommended to research and choose a software program that best suits your specific needs and requirements.

Features of computerized embroidery process

The computerized embroidery is quite a reliable process.it has the provision for repeatability of designs and helps in faster and mass production of embroidered products and thus has a lot of significance in the textile industry.

Multicolored designs can be obtained through this process and the transfer of data from the computer to the design is quite a simple process as it just requires a storage media like a floppy or a pen drive.

1.3 Garment consideration of digital embroidery

When identifying garment considerations for digital embroidery, the following factors should be considered:

A. **Fabric type:** Not all fabrics are suitable for digital embroidery. Some fabrics, such as delicate fabrics such as silk and chiffon, are more difficult to embroider than others. Fabrics that are too stretchy may also be difficult to embroider.

B. Fabric weight: The weight of the fabric will also affect the embroidery process. Heavier fabrics will require a heavier thread and a more powerful embroidery machine.

C. **Fabric construction:** The construction of the fabric will also need to be considered. For example, fabrics with a lot of seams or darts may be more difficult to embroider than fabrics with a simpler construction.

D. **Garment design:** The design of the garment will also need to be considered. For example, garments with a lot of detail or embroidery may be more difficult to embroider than garments with a simpler design.

E. **Embroidery placement:** The placement of the embroidery on the garment will also need to be considered. For example, embroidery on the front of a garment will be more visible than embroidery on the back of a garment.

In addition to the above factors, the following garment considerations may also need to be taken into account:

F. **Thread color:** The color of the thread should complement the garment and the embroidery design.

G. **Embroidery size:** The size of the embroidery should be appropriate for the garment and the embroidery design.

H. **Embroidery finish:** The embroidery should be finished in a way that is appropriate for the garment and the embroidery design. For example, embroidery on a delicate fabric may need to be finished with a soft backing. By considering all of these factors, you can ensure that your digital embroidery project is a success.

Here are some additional tips for identifying garment considerations for digital embroidery:

I. **Consult with a professional embroiderer.** If you are unsure about any of the garment considerations for your digital embroidery project, consult with a professional embroiderer. They can help you to identify the best considerations for your project and ensure that the embroidery is completed to a high standard.

J. **Use a digital embroidery software program.** Digital embroidery software programs can be used to create and edit embroidery designs, as well as to generate embroidery machine files. These programs can help you to ensure that your digital embroidery project meets all of the required garment considerations.

K. **Test the embroidery design on a scrap of fabric.** Before embroidering your final project, it is a good idea to test the design on a scrap of fabric. This will help you to ensure that the embroidery is sewn correctly and that the garment meets your expectations. By following these tips, you can ensure that the garment considerations for your digital embroidery project are identified correctly and that your embroidery is completed to a high standard.

Garment Selection Embroidery works best with heavy weight garments like fleece products (hoodies/joggers), which provide adequate support for the embroidery to be sewn into the garment. With that being said, we also provide embroidery services on some lighter weight garments like t shirts. Special care with regards to artwork and design selection must be used when embroidering on t shirts and light weight garments. Since these garments are thin, it is easy for embroidery to create small holes, especially around the sharp edges of artwork. We recommend designs with limited stitch counts, and no sharp edges for t shirts and other lightweight garments.

1.4 Embroidery machine requirements

To identify the machine requirements for digital embroidery, you should consider the following factors:

1. **Embroidery machine type:** There are different types of embroidery machines available, such as single-head machines, multi-head machines, and commercial machines. The type of embroidery machine you need will depend on the size and complexity of your projects.
2. **Embroidery machine features:** Embroidery machines come with a variety of features, such as different stitch types, stitch density adjustments, and automatic thread changing. Consider which features are important to you and choose a machine that has those features.
3. **Embroidery machine performance:** Consider the performance of the embroidery machine, such as its stitching speed and embroidery area. Choose a machine that can handle the size and complexity of your projects.

4. **Embroidery machine price:** Embroidery machines can range in price from a few hundred dollars to several thousand dollars. Set a budget before you start shopping and choose a machine that fits your budget and your needs.

In addition to the above factors, you may also want to consider the following:

Requirements for a Good Embroidery Machine

If you're someone who loves embroidery, investing in a good embroidery machine can be one of the best decisions you ever make. With the right machine, you can create intricate designs on all sorts of fabrics, from clothing to home decor items. But with so many options out there, how do you know which machine to choose? That's where our list of the best embroidery machines of 2023 comes in. We've done the research so you don't have to, and we're confident that the machines on our list are the cream of the crop.

But once you've invested in a quality embroidery machine, you'll want to make sure you've got the right accessories to go with it. Here are a few key accessories to consider:

A. **Embroidery hoops:** These are the circular frames that hold your fabric steady while the machine stitches your design. You'll likely need a few different sizes of hoops depending on the size of your project.

B. **Stabilizers:** These are materials you use to reinforce your fabric so it stays in place while you're embroidering. There are lots of different types of stabilizers to choose from, including tear-away, cut-away, and water-soluble.

C. **Bobbins:** These are the small spools of thread that go inside your machine and hold the lower thread in place. Make sure you have plenty of bobbins on hand so you don't run out mid-project.

D. **Thread:** Of course, you'll also need plenty of thread in all sorts of colors. Look for high-quality embroidery thread that won't fray or break easily.

E. **Scissors and snips:** You'll need a good pair of scissors to cut your fabric and thread, as well as a small snip for trimming thread ends close to your design.

Investing in these embroidery machine accessories will not only make your projects go more smoothly, but it will also help you get more professional-looking results. So, if you're serious about embroidery, don't skimp on the accessories!

Requirements for embroidery work

The requirements for embroidery work

- Embroidery machine with accessary
- Fabric. In general, you can embroider on any fabric.
- Embroidery Floss. Stranded Cotton.
- Needles. Embroidery or Crewel Needles.
- Embroidery Hoops.
- Scissors. .
- Fabric Marking Pens
- Different frames
- Embroidery threads

SELF- CHECK 01

Part - I: Multiple Choices

INSTRUCTION:-choose the answer for the following question you have given 2 Minute for each question. (Each question carries 1 Point)

1. Which one of the following can NOT important factors to consider when selecting for embroidery work?
   A. Fabric
   B. Hoop or frame
   C. Design
   D. None of the above
2. ---------- is a decorative art form that involves stitching designs onto fabric using a needle and thread.
   A. Design C. Digital embroidery
   B. Embroidery D. All the above
3. Which one of the following is a common feature found in garment embroidery software?
   A. Lettering and Monogramming
   B. Design Creation and Editing
   C. Thread Color Customization
   D. All the above
4. When identifying garment considerations for digital embroidery, the following factors should be considered.
   A. Fabric type
   B. Embroidery size
   C. Embroidery placement
   D. All
5. What are embroidery hoops used for?
   A. Holding fabric steady while stitching
   B. Reinforcing fabric during embroidery
   C. Holding bobbins in place
   D. Trimming thread ends close to the design

Part - II: short Answer

Instruction: write short answer for the given question. You are provided 4 minute for question and have 2 points.

1. What is Digital embroidery?
2. What are common requirements for embroidery work?
3. What are some required program features for digital embroidery?
4. List the machine requirements for digital embroidery?
5. What are some popular garment embroidery software programs?

UNIT TWO: Select and use Program Features

This unit to provide you the necessary information regarding the following content coverage and topics:

- Program Features digital embroidery
- Motif stock design
- Edit designs
- Set program

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Select program Features digital embroidery
- Select motif/lettering
- Edit embroidery designs
- Set program for operation

2.1 Program Features digital embroidery

To select and use program features for digital embroidery, you will need to consult the user manual for your specific software program. However, there are some general tips that can follow:

- Start by selecting the design creation and editing feature. This will allow you to create or edit your embroidery design.
- Once you have created or edited your design, select the digitizing feature. This will convert your design into a machine-readable format.
- Once your design has been digitized, select the stitch generation feature. This will generate the embroidery machine file that your machine will use to sew the design.
- Once the embroidery machine file has been generated, select the previewing feature. This will allow you to preview the design before stitching it. This is a good opportunity to check for any errors in the design and to make any necessary adjustments.
- Once you are satisfied with the design, select the stitching feature. This will start the embroidery process.

In addition to these basic steps, you may also want to use some of the other features of your digital embroidery software program, such as:

A. **Stitch libraries:** Stitch libraries contain pre-made stitches that you can use in your designs. This can be a great way to save time and to create professional-looking embroideries.
B. **Embroidery fonts:** Embroidery fonts allow you to add text to your designs. This can be a great way to personalize your embroideries or to add labels to your projects.
C. **Image tracing:** Image tracing allows you to convert images into embroidery designs. This can be a great way to create embroideries of your favorite photos or images. By using the features of your digital embroidery software program, you can create beautiful and unique embroidered designs. Here are some additional tips for selecting and using program features for digital embroidery:
D. **Read the user manual for your software program.** This will help you to learn about all of the features that your program has to offer and how to use them.
E. **Experiment with different features.** The best way to learn how to use the features of your software program is to experiment with them. Try out different features and see what they do.
F. **Ask for help from other embroiderers.** If you are unsure about how to use a particular feature, ask for help from other embroiderers. There are many online forums and groups where you can ask questions and get help.

By following these tips, you can select and use the program features for digital embroidery to create beautiful and unique embroidered designs.

2.1 Motif or lettering from stock design

What is a motif in embroidery?

Embroidery motifs are preset design elements such as Hearts leaves or border patterns which are stored in dedicated Motif sets. A key element of a well-designed motif is consistency, which helps to create emphasis and ensure that the theme is reinforced throughout your document. Repetition also plays an important role in creating a strong foundation for your theme.

By using themes and motifs consistently, you can help readers focus on what matters most. Finally, consider incorporating motifs into your content in order to differentiate it from other pieces on the same topic. This will help to highlight your writing and make it more memorable.

Embroidery design selection

An embroidery design selection is new process is described that assists engineers in making complex decisions during the design process. The Interactive Design Selection Process (IDSP) allows designers to collect design information, compare candidate designs, build user preferences, and ultimately zero in on the best designs.

To select motifs or lettering for digital embroidery, you can consider the following factors:

1. **Purpose of the embroidery:** What is the embroidery going to be used for? Is it for a garment, a home décor item, or a gift? The purpose of the embroidery will help you to choose the right motif or lettering.
2. **Style of the embroidery:** What style of embroidery do you want? Do you want a traditional style, a modern style, or a whimsical style? The style of the embroidery will help you to choose the right motif or lettering.
3. **Complexity of the embroidery:** How complex do you want the embroidery to be? Do you want a simple design or a complex design? The complexity of the embroidery will help you to choose the right motif or lettering.
4. **Size of the embroidery:** How big do you want the embroidery to be? The size of the embroidery will help you to choose the right motif or lettering.
5. **Color of the thread:** What color of thread do you want to use? The color of the thread will help you to choose the right motif or lettering.

Once you have considered these factors, you can start to look for motifs or lettering for digital embroidery. There are many resources available online and in libraries. You can also find motifs and lettering in embroidery magazines and books.

- Look for motifs or lettering that are appropriate for the purpose of the embroidery. For example, if you are embroidering a gift for a child, you may want to choose a whimsical motif. If you are embroidering a garment, you may want to choose a more classic motif.
- Choose motifs or lettering that are the right size for the embroidery. If the embroidery is going to be small, you will need to choose a small motif or lettering.
- Choose motifs or lettering that are the right color for the embroidery. If the embroidery is going to be on a light-colored fabric, you may want to choose a dark-colored thread. If the embroidery is going to be on a dark-colored fabric, to choose a light-colored thread.
- Experiment with different motifs and lettering. The best way to find the right motif or lettering for your embroidery is to experiment.



Figure 2.1 Motif embroidery design

2.2 Edit digital embroidery designs

Once a design has been digitized, an embroiderer can use software to edit it or combine it with other designs. Most embroidery programs allow the user to rotate, scale, move, stretch, distort, split, crop, or duplicate the design in an endless pattern. Most software allows the user to add text quickly and easily. Often the colors of the design can be changed, made monochrome, or re-sorted. More sophisticated packages allow the user to edit, add, or remove individual stitches. Some embroidery machines have rudimentary built-in design editing features. Loading the design After editing the final design, the file is loaded into the embroidery machine. Different machines require different formats that are proprietary to that company. Common design file formats for the home and hobby market include .ART, .HUS, .JEF, .PES, .SEW, and .VIP.

Embroidery patterns can be transferred to the computerized embroidery machines through cables, CDs, floppy disks, USB interfaces, or special cards that resemble flash or compact cards. Due to some commonality between the controllers and the software manufacturers, some of the formats are headers and additional information surrounding similarly encoded stitches. .TAP is a .DST file without the header. .EXP file stitches are very close to .JEF, .SHV and .SEW but without the surrounding data about thread color and hoop positioning. .10o is encoded in the same manner as .F01, .GT, .DSB, .DAT, .INB and .U01 but with different headers and surrounding information.

To edit digital embroidery designs, you can use a digital embroidery software program. These programs allow you to create, edit, and digitize embroidery designs.

A. **To edit a digital embroidery design**, first need to open the design in your software program. Once the design is open, use the various tools in the program to make changes to the design.
B. **Resize the design:** use the resize tool to make the design larger or smaller.
C. **Move the design:** use the move tool to move the design around on the screen.
D. **Rotate the design:** use the rotate tool to rotate the design.
E. **Change the stitch type:** use the stitch type tool to change the type of stitch used in the design.
F. **Change the stitch density:** You can use the stitch density tool to change the number of stitches per inch in the design.
G. **Add or remove stitches:** use the add or remove stitches tools to add or remove stitches from the design.
H. **Change the thread color**: use the thread color tool to change the color of the thread used in the design.



Figure 2.2 Edited embroidery design

Designs are edited to achieve specifications digital embroidery

To edit digital embroidery designs to achieve specifications, you can use a digital embroidery software program. These programs allow you to create, edit, and digitize embroidery designs. To edit a digital embroidery design to achieve specifications, you will first need to open the design in your software program. Once the design is open, you can use the various tools in the program to make changes to the design to meet the specifications. For example, you may need to:

- Resize the design: use the resize tool to make the design larger or smaller to meet the specified size.
- Move the design: use the move tool to move the design around on the screen to meet the specified placement.
- Rotate the design: use the rotate tool to rotate the design to meet the specified orientation.
- Change the stitch type: use the stitch type tool to change the type of stitch used in the design to meet the specified stitch type.
- Change the stitch density: use the stitch density tool to change the number of stitches per inch in the design to meet the specified stitch density.
- Add or remove stitches:

Material Selection

Materials selection is an ordered process by which operators can systematically and rapidly eliminate unsuitable materials and identify the one or a small number of materials which are the most suitable. Same embroidery materials:-

1. Fabric. In general, you can embroider on any fabric. ...
2. Embroidery Floss. Stranded Cotton. ...
3. Needles. Embroidery or Crewel Needles. ...
4. Embroidery Hoops. ...
5. Scissors. ...

6. Fabric Marking Pens

2.3 Set program

Garment embroidery software programs are specialized computer applications designed specifically for creating and managing embroidery designs for garments. These software programs provide a user-friendly interface and a range of features to facilitate the design, customization, and production of embroidered designs.

To set up a garment embroidery software program for operation, follow these steps:

Steps 1 - Install the software: Begin by installing the embroidery software program on your computer. Follow the instructions provided by the software manufacturer for a successful installation.

Steps 2 - Connect the embroidery machine: Ensure that your embroidery machine is properly connected to your computer. Use the appropriate cables or wireless connection method as specified by the machine's manufacturer.

Steps 3 - Launch the software: Open the embroidery software program on your computer. It may be accessible through a desktop shortcut or from the Start menu.

Steps 4 - Set up machine settings: Access the machine settings within the software program. Configure the settings according to the specifications of your embroidery machine, such as hoop size, needle positions, and stitch speed. Refer to the machine's user manual for guidance if needed.

Steps 5 - Import or create designs: Depending on your requirements, you can either import existing embroidery designs or create new ones within the software program. Follow the software's instructions to import designs from external files or use the built-in design tools to create your own.

Steps 6 - Customize designs: Use the software's features to customize the imported or created designs. This may include selecting thread colors, adjusting stitch types, resizing or rotating the design, and positioning it on the virtual fabric.

Steps 7 - Prepare the design for stitching: Once you are satisfied with the design customization, prepare it for stitching. This involves specifying the order of stitching, setting thread colors, and adding any necessary instructions or notes for the machine operator.

Steps 8 - Transfer the design to the embroidery machine: Use the software's transfer function to send the design to the connected embroidery machine. Ensure that the machine is ready and properly set up to receive the design.

Steps 9 - Start the embroidery process: With the design transferred to the machine, initiate the embroidery process. Monitor the machine's operation to ensure that the design is stitched accurately and without any issues.

Remember to consult the user manual and any additional resources provided by the software manufacturer for detailed instructions specific to your embroidery software program

SELF-CHECK 02

Name: _____ Date: _____

Test: Short Answer Questions

Instruction: write short answer for the given question. You are provided 4 minute for question and have 2 points.

1. What is a motif in embroidery?
2. When selecting motifs or lettering for digital embroidery, what factors should be considered?
3. How to edit digital embroidery designs, explain with steps?
4. What is embroidery design selection?
5. What is garment embroidery software program?

OPERATIONAL SHEET 01

Operation Title: Set up a digital embroidery software program for operation

Purpose: To show how to set up a digital embroidery software program for operation

Conditions/ Situations for the Operation: Trainees should know the techniques of set up a digital embroidery software program.

Equipment, Tools and Materials: digital embroidery machine, embroidery software and design files…etc.

Precautions: In order to use Pe-Design 11, the included "Pe-Design Software Key" must be plugged into a USB port of the computer. The "Pe-Design Software Key" prevents unauthorized use of this software. The software cannot be started if the "PE-DESIGN Software Key" is not plugged in.

Quality Criteria: All steps were completed in the correct sequence, the computer should operate correctly and your work should be accurate.

PROCEDURES:

STEPS – To set up a garment embroidery software program for operation, follow these steps:

Step 1: Install the software

Step 2: Connect the embroidery machine

Step 3: Launch the software

Step 4: Set up machine settings

Step 5: Import or create designs

Step 6: Customize designs

Step 7: Prepare the design for stitching

Step 8: Transfer the design to the embroidery machine

Step 9: Start the embroidery process

LAB TEST – 01

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 2 hours.

TASK: Perform a digital embroidery software program set up

Tasks 1: Install the software

Tasks 2: Connect the embroidery machine

Tasks 3: Launch the software

Tasks 4: Set up machine settings

Tasks 5: Import or create designs

Tasks 6: Customize designs

Tasks 7: Prepare the design for stitching

Tasks 8: Transfer the design to the embroidery machine

Tasks 9: Start the embroidery process or ready for operation

UNIT THREE: work pieces and workstation

This unit to provide you the necessary information regarding the following content coverage and topics:

- Work pieces
- Suit fabric
- Workbench and seating
- Equipment adjust
- Perform routine minor maintenance
- Report and record problems

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Laid out work pieces
- Select backing pieces to suit fabric
- Workbench and seating
- Set up and Adjust equipment
- Perform routine minor maintenance
- Report and record problems

3.1 Laid out work pieces

"**Laid out work pieces**" in the context of digital embroidery refers to the arrangement or positioning of the different elements or components of an embroidery design on the fabric or garment before the stitching process begins. These work pieces typically represent the individual elements or sections of the design that will be embroidered.

For example, if a digital embroidery design consists of a floral motif, a text element, and a border, the laid out work pieces would involve placing these elements in their desired positions on the fabric or garment. This arrangement ensures that the design is correctly positioned and aligned before the embroidery machine starts stitching. It's important to note that the term "laid out work pieces" is not a commonly used industry term and may vary depending on the specific context or practices of a particular embroidery workshop or software.

To prepare work pieces and workstation for digital embroidery, you will need to:

Work pieces:

A. **Cut the fabric to size.** The fabric should be slightly larger than the embroidery design. This will give you enough fabric to hoop the fabric and to leave a seam allowance around the design.

B. **Iron the fabric.** The fabric should be smooth and wrinkle-free before you hoop it.

C. **Hoop the fabric.** Hoop the fabric tightly in an embroidery hoop. The fabric should be taut but not too tight.

D. **Trim the excess fabric.** Trim the excess fabric around the hoop, leaving a seam allowance of about 1/4 inch.

Workstation:

- Set up your embroidery machine in a well-lit area.
- Make sure that the embroidery machine is level.
- Have all of your embroidery supplies on hand. This includes things like needles, threads, stabilizers, and backing.

- Here are some additional tips for preparing work pieces and workstation for digital embroidery:
- Use the right stabilizer. The type of stabilizer you use will depend on the type of fabric you are embroidering. For example, stretchy fabrics will require a stretchy stabilizer.
- Use the right backing. The backing will support the fabric during the embroidery process and will help to prevent the fabric from puckering.
- Test the design on a scrap of fabric. Before stitching the design on your final project, it is a good idea to test the design on a scrap of fabric. This will help you to ensure that the design is sewn correctly and that the stabilizer and backing are working properly.

By following these tips, you can prepare your work pieces and workstation for digital embroidery and create beautiful and unique embroideries.

3.1.1 Laid out work pieces for digital embroidery

To lay out work pieces for digital embroidery, you will need to:

1. **Choose the right layout.** The layout of your work pieces will depend on the size and shape of the design, as well as the size of the embroidery machine hoop.
2. **Center the design on the fabric**. The design should be centered on the fabric so that it is evenly embroidered.
3. **Hoop the fabric.** Hoop the fabric tightly in an embroidery hoop. The fabric should be taut but not too tight.
4. **Trim the excess fabric.** Trim the excess fabric around the hoop, leaving a seam allowance of about 1/4 inch.

Here are some additional tips for laying out work pieces for digital embroidery:

- Use a layout grid. A layout grid can help you to center the design on the fabric and to position the work pieces accurately.
- Use pins or basting stitches to secure the work pieces. This will help to prevent the work pieces from shifting during the embroidery process.

- Leave enough space between the work pieces. This will allow the embroidery needle to move freely around the design.
- Test the layout on a scrap of fabric. Before stitching the design on your final project, it is a good idea to test the layout on a scrap of fabric. This will help you to ensure that the design is positioned correctly and that the work pieces are secured properly.

By following these tips, you can lay out your work pieces for digital embroidery and create beautiful and unique embroideries.

3.2 Backing pieces to suit fabric

The selection of backing materials for digital embroidery depends on various factors such as the type of fabric, the design complexity, and the desired outcome. Here are some general considerations when selecting backing materials for digital embroidery based on fabric types:

1. **Light to Medium-weight Fabrics:** For fabrics like cotton, linen, or lightweight synthetics, a medium-weight cutaway stabilizer is commonly used. It provides support and stability to prevent puckering or distortion during stitching. Knit or Stretchy Fabrics: Knit fabrics require more flexibility, so a lightweight to medium-weight tear away stabilizer or a specialized backing for knits can be used. The stabilizer should provide stability during stitching and tear away easily afterward.
2. **Sheer or Delicate Fabrics:** For delicate or sheer fabrics like chiffon, organza, or silk, a lightweight stabilizer or a water-soluble stabilizer can be used. Water-soluble stabilizers can be dissolved after embroidery, leaving no visible residue.
3. **Heavyweight or Dense Fabrics:** Fabrics like denim, canvas, or heavy twill may require a heavyweight cutaway stabilizer to provide sufficient support and prevent fabric distortion.

It's essential to consider the specific characteristics of the fabric and the requirements of the embroidery design. It's recommended to consult with embroidery professionals, suppliers, or refer to the machine manufacturer's guidelines for specific recommendations on backing materials for different fabric types. Ultimately, the best approach is to conduct testing on a small sample of the fabric to determine the most suitable backing materials and techniques for achieving optimal embroidery results



Figure 3.1 backing fabric pieces for digital embroidery

3.3 Workbench and seating digital embroidery

When setting up a workbench and seating for digital embroidery, it's important to consider Occupational Health and Safety (OHS) practices to ensure a safe and ergonomic working environment. Here are some guidelines to follow:

1. **Workbench Height:** Ensure that the height of the workbench is suitable for the embroiderer. The ideal height is typically around elbow height, allowing for comfortable arm and hand positioning during embroidery work. Adjust the height of the workbench accordingly to maintain proper posture and reduce strain.
2. **Seating:** Choose a chair or stool that provides proper support and adjustability. Look for a chair with adjustable height, backrest, and lumbar support. The chair should allow the embroiderer to sit with their feet flat on the floor or on a footrest, maintaining a neutral posture.
3. **Lighting:** Proper lighting is crucial to avoid eye strain and ensure clear visibility of the embroidery work. Provide adequate lighting at the workbench area, avoiding glare or shadows. Consider using adjustable task lighting to direct light precisely where it is needed.
4. **Work Area Organization:** Keep the work area clean, clutter-free, and well-organized. Ensure that frequently used tools, embroidery threads, and supplies are within easy reach to minimize unnecessary stretching or reaching movements.

5. **Ergonomic Accessories:** Consider using ergonomic accessories to enhance comfort and reduce strain. This can include wrist supports, footrests, or ergonomic embroidery hoops or frames that minimize hand and wrist fatigue.
6. **Breaks and Stretching:** Encourage regular breaks and stretching exercises to prevent prolonged static postures. Embroidery work can be repetitive, so taking short breaks and stretching helps reduce the risk of musculoskeletal issues.
7. **Training and Awareness:** Provide training and education on OHS practices specific to digital embroidery. Ensure that embroiderers are aware of proper workstation setup, posture, and techniques to minimize the risk of injuries.

It's important to note that OHS practices may vary depending on the specific regulations and guidelines of your region or workplace. It's recommended to consult local OHS authorities or seek professional advice to ensure compliance with applicable standards and regulations. Additionally, consider conducting ergonomic assessments or involving an occupational health professional for a comprehensive evaluation of the work environment and to address any specific concerns related to digital embroidery.

How to set up an ergonomic workshop



Figure 3.2 Set-up work bench

Musculoskeletal disorders (MSDs) are a common problem in embroidery work sectors due to repetitive tasks and awkward postures. MSDs are one of the leading causes of long-term sick leave, accounting for 6.9 million lost working days in the UK in the 2018-2019 period according to the Health and Safety Executive. The right work environment can reduce the chance of repetitive strain injuries and encourage healthier postures by providing furniture and equipment adapted to the work tasks, leading to more productive workdays and fewer sick days.

3.4 Set up and Adjust equipment and materials for digital embroidery

When setting up and adjusting equipment and materials for digital embroidery, consider the following steps:

1. **Embroidery Machine Setup:**
   - Ensure the embroidery machine is placed on a stable and level surface.
   - Connect the machine to a reliable power source and ensure proper grounding.
   - Follow the manufacturer's instructions to install any necessary software or firmware updates.
   - Calibrate the machine as per the manufacturer's guidelines.
   - Hooping and Frame Setup:
2. **Select the appropriate hoop or frame size based on the design and fabric.**
   - Place the fabric securely in the hoop or frame, ensuring it is taut but not stretched.
   - Adjust the hoop tension or frame clamps as needed to maintain proper fabric tension.
3. **Thread and Bobbin Preparation**:
   - Choose the appropriate thread type, weight, and color for the design.
   - Thread the machine following the specific threading path as per the machine's manual.
   - Wind and insert bobbins with the same thread used for the top embroidery thread.
4. **Needle Selection and Installation:**
   - Select the appropriate needle type and size based on the fabric and design requirements.
   - Follow the manufacturer's instructions to install and secure the needle in the machine.
   - Ensure the needle is properly aligned and positioned for optimal stitching.
5. **Stabilizer Placement:**
   - Select the appropriate stabilizer type based on the fabric and design complexity.

- Cut the stabilizer to the size needed to fit within the hoop or frame.
- Place the stabilizer on the underside of the fabric, ensuring it covers the entire design area.

6. **Design Transfer and Positioning:**
   - Transfer the desired embroidery design to the machine using the preferred method (e.g., USB, WiFi, or direct connection).
   - Use the machine's software or interface to position and align the design on the fabric within the hoop.
7. **Machine Settings and Test Run:**
   - Adjust machine settings such as stitch density, speed, and thread tension based on the fabric and design.
   - Conduct a test run on a scrap fabric or a designated test area to ensure the design stitches out correctly and the tension is balanced.
8. **Ongoing Monitoring and Adjustments:**
   - Regularly monitor the embroidery process to ensure proper thread tension, stitch quality, and fabric alignment.
   - Make adjustments as necessary, such as repositioning the fabric, changing the thread tension, or replacing the needle.

Remember to consult the machine's manual and follow the manufacturer's instructions for specific guidance on setup and adjustment procedures. Regular maintenance and cleaning of the equipment are also important to ensure optimal performance and longevity.

3.4.1 Equipment and materials for digital embroidery

To perform digital embroidery, you will need specific equipment and materials. Here is a list of the essential items required for digital embroidery:

1. **Embroidery Machine:** The primary equipment used for digital embroidery, available in various sizes and models.



Figure 3.3 digital Embroidery Machine

2. **Embroidery Software**: Used to create and edit embroidery designs, allowing customization and manipulation of design files.

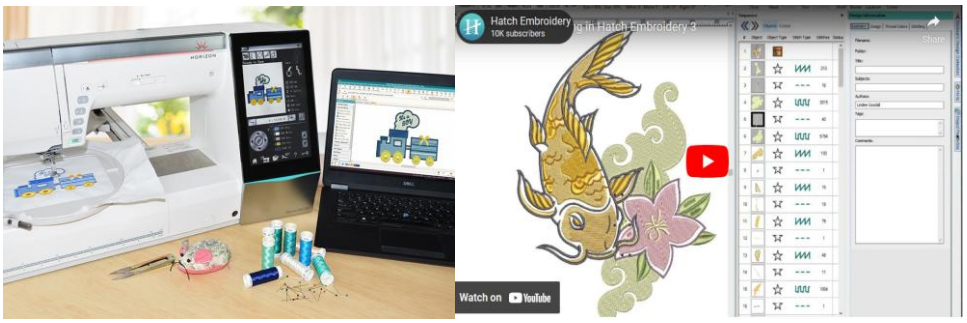


Figure 3.4 Auto-Digitizing with Hatch Embroidery Software

3. **Design Files:** Digital files containing embroidery design information, obtained from libraries, digitizers, or created using embroidery software.
4. **Hoops:** Used to hold the fabric or garment in place during embroidery, available in different sizes.

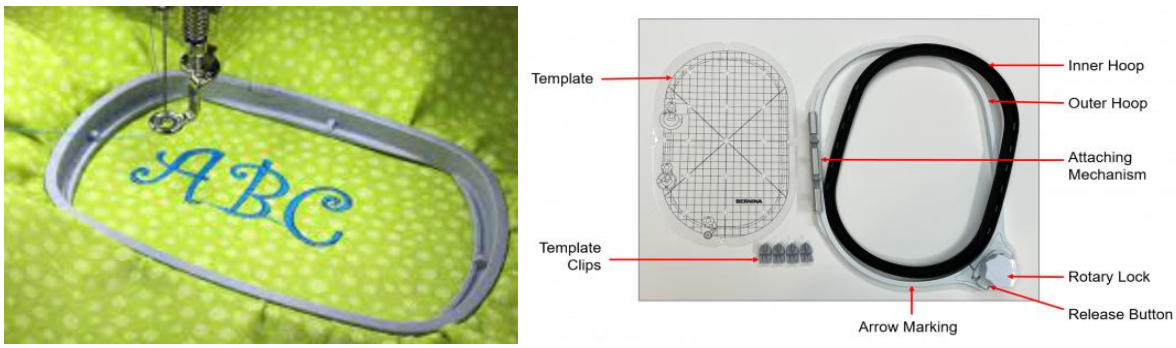


Figure 3.6 Machine Embroidery Hoops with parts

5. **Stabilizers:** Materials placed beneath or on top of the fabric to provide support and prevent distortion during embroidery.



Figure 3.7 Stabilizers

6. **Embroidery Threads:** Specialized threads made of polyester, rayon, metallic, or cotton, available in various colors.



Figure 3.7 Embroidery threads

7. **Needles:** Specifically designed for embroidery machines, with a larger eye and special point for smooth thread flow.



Figure 3.8 Embroidery machine needles

8. **Fabric or Garments:** Choose suitable fabrics that can withstand the embroidery process.



Figure 3.9 Embroidery fabrics or suit fabrics

9. **Scissors and Thread Clippers:** Used for trimming excess threads and jump stitches after embroidery.



Figure 3.10 Scissors and Thread Clippers:

10. **Optional Accessories:** Additional items like different-sized hoops, specialty threads, bobbin thread, backing materials, and design transfer tools.



Figure 3.11 Optional Accessories

Remember to follow manufacturer instructions for safe and efficient embroidery operations.

3.5 Perform routine minor maintenance

Routine minor maintenance for a digital embroidery machine helps ensure its smooth operation and longevity. Here are some common maintenance tasks to consider:

1. **Cleaning:** Regularly clean the machine using a soft brush or lint-free cloth to remove lint, dust, and debris. Pay attention to areas around the needle, bobbin case, and thread path.
   - Use a vacuum or compressed air to gently remove any accumulated debris from the machine's internal parts.
   - Follow the manufacturer's guidelines for cleaning specific components or areas of the machine.

2. **Lubrication:** Check the machine's manual to determine if lubrication is required. Some modern digital embroidery machines are designed to be lubrication-free.
   - If lubrication is necessary, use the appropriate lubricant recommended by the manufacturer.
   - Apply lubricant sparingly to designated points, such as the bobbin case or moving parts, according to the manufacturer's instructions.
3. **Bobbin Case Maintenance:** Regularly remove the bobbin case and clean it using a brush or lint-free cloth.
   - Inspect the bobbin case for any signs of wear or damage. If necessary, replace it with a new one following the manufacturer's specifications.
4. **Needle Maintenance:** Replace the needle regularly, following the manufacturer's recommended intervals or after a certain number of stitching hours.
   - Use the proper needle size and type for the fabric and design being embroidered.
   - Ensure the needle is correctly installed, securely tightened, and properly aligned.
5. **Thread Path Inspection:** Routinely check the thread path for any signs of thread buildup, tangles, or snags.
   - Remove any thread remnants or snags that may hinder the smooth flow of thread.
   - Ensure the thread is properly threaded through all the guides, tension disks, and the needle.
6. **Software Updates:** Stay updated with the latest software releases and updates provided by the machine's manufacturer.
   - Install any necessary firmware or software updates to benefit from performance improvements, bug fixes, or new features.
7. **Regular Testing:** Conduct regular test runs on scrap fabric or designated test areas to ensure stitch quality, tension balance, and proper functioning of the machine.
   - Monitor the embroidery process closely for any irregularities or issues, such as skipped stitches or thread breaks.

Always refer to the specific maintenance guidelines provided by the machine's manufacturer in the user manual or documentation. Following these routine maintenance practices will help keep your digital embroidery machine in good working condition and minimize the risk of unexpected issues during embroidery projects.

3.6 Record and reporting any problems

Recording and reporting a digital embroidery machine problem is essential for tracking issues, facilitating communication with technicians or support teams, and ensuring timely resolution. Here's a suggested process for recording and reporting machine problems:

1. **Documentation:** Create a dedicated log or record-keeping system to document machine problems. This can be a physical notebook or a digital spreadsheet or document. Include relevant information such as the date, time, specific machine model or serial number, and a detailed description of the problem encountered. Note any error messages or codes displayed on the machine's interface, if applicable.
2. **Problem Description:** Clearly describe the problem you're experiencing with the machine. Be specific and provide as much detail as possible to help identify the root cause. Include information about the specific embroidery design, thread type, fabric, and any other relevant factors that may have contributed to the issue. Attach photos or videos if they can provide additional clarity or demonstrate the problem more effectively.
3. **Contact the Support Team:** Reach out to the machine's manufacturer or authorized technical support team to report the problem. Use the designated channels of communication provided, such as phone, email, or online support portals.
4. **Follow-up Communication:** Maintain regular communication with the support team to ensure the problem is properly addressed. Respond promptly to any requests for additional information or troubleshooting steps from the support team. Keep a record of all conversations, including dates, names of the support representatives, and summaries of discussions or solutions proposed.
5. **Machine Service or Repair:** If the problem cannot be resolved through remote assistance, schedule a service appointment or arrange for the machine to be inspected and repaired.
6. **Resolution Documentation:** Once the problem is resolved, document the resolution details in your records. Include the actions taken, parts replaced and any additional recommendations or preventive measures provided by the support team.

By maintaining a systematic record of machine problems and following a clear reporting process, you can ensure that issues are properly addressed and that relevant information is available for future reference. This documentation can also be valuable for warranty claims, maintenance history, and future troubleshooting efforts

SELF-CHECK 03

Part - I: Multiple Choices

Instruction:-choose the answer for the following question you have given 2 Minute for each question. (Each question carries 1 Point)

1. What is the purpose of trimming the excess fabric when preparing work pieces for digital embroidery?
   A. To cut the fabric to size
   B. To iron the fabric
   C. To hoop the fabric tightly
   D. To leave a seam allowance around the design
2. What is one common maintenance task for a digital embroidery machine?
   A. Lubrication
   B. Painting
   C. Changing the light bulb
   D. Rewiring the machine
3. What type of stabilizer is commonly used for light to medium-weight fabrics like cotton, linen, or lightweight synthetics in digital embroidery?
   A. Medium-weight cutaway stabilizer
   B. Lightweight tear away stabilizer
4. What is an important step in laying out work pieces for digital embroidery?
   A. Choose the right layout
   B. Center the design on the fabric
   C. Hoop the fabric
   D. Trim the excess fabric
5. What is the purpose of creating a dedicated log or record-keeping system for machine problems?
   A. To track issues and facilitate communication with technicians
   B. To showcase embroidery designs
   C. To keep a record of thread colors used
   D. To document personal embroidery preferences

Part - II: short Answer

Instruction: write short answer for the given question. You are provided 3 minute for question and have 2 points.

1. List the Equipment and materials for digital embroidery?
2. What is the difference between work pieces and workstation for digital embroidery?
3. When setting up and adjusting equipment and materials for digital embroidery, what are the important steps to consider?
4. Explain the workbench and seating for digital embroidery?
5. What is "Laid out work pieces" in the context of digital embroidery?

OPERATIONAL SHEET 02

Operation Title: Prepare work pieces and workstation for digital embroider

Purpose: To standardize the procedures for preparing work pieces and workstations for digital embroidery, ensuring a consistent and high-quality product

Conditions/Situations for operation: Trainees should know the technique of produce work pieces and work station for digital embroidery.

Equipment, Tools and Materials: digital embroidery machine, work bench, setting chair,

Precautions: Always wear safety glasses when operating the embroidery machine, keep your hands away from the needle while the machine is running, be careful not to overload the hoop, as this can damage the machine and be sure to unplug the embroidery machine before cleaning or threading it.

Quality Criteria: The work piece should be properly hooped and the stabilizer should be securely attached, the embroidery machine should be properly threaded and calibrated, the embroidery design should be centered on the work piece and the embroidery should be free of defects, such as puckering, skipped stitches, and thread breaks.

PROCEDURES:

Steps 1 – Prepare the workstation.

- The work piece should be properly hooped and the stabilizer should be securely attached.
- The embroidery machine should be properly threaded and calibrated.
- The embroidery design should be centered on the work piece.
- The embroidery should be free of defects, such as puckering, skipped stitches, and thread breaks.

Steps 2 - Prepare the work piece.

- Choose the appropriate stabilizer for the work piece. The stabilizer should be the same size or slightly larger than the work piece and should be compatible with the fabric and embroidery design.
- Attach the stabilizer to the work piece. This can be done using spray adhesive, double-

sided tape, or basting stitches.

- Hoop the work piece. The hoop should be large enough to accommodate the work piece and stabilizer, and it should be centered in the hoop.
- Trim any excess stabilizer.

Steps 3 - Inspect the work piece and workstation.

- Make sure that the work piece is properly hooped and that the stabilizer is securely attached.
- Check the embroidery machine to ensure that it is properly threaded and calibrated.
- Once the work piece and workstation have been inspected, the operator can begin embroidering.

LAB TEST – 02

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 2hours.

Perform the following tasks by taking time study for each operation repeatedly, according to the time set and obtain the following result.

Tasks 1. Prepare the workstation and seating

Tasks 2. Prepare the work piece

Tasks 3. Inspect the work piece and Stations

UNIT FOUR: Produce Digital Embroidery

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- OHS practices
- Embroidery design
- Assess work and adjust machine
- Production problems

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Apply OHS practices
- Produce embroidery design
- Assess work and adjust machine
- Manage production problems such as thread breaks

4.1 Apply OHS practices

When producing digital embroidery, it's important to apply Occupational Health and Safety (OHS) practices to ensure a safe and healthy working environment. Here are some OHS practices to consider:

1. **Ergonomic Workstation Setup:** Set up your embroidery workstation following ergonomic principles. Ensure that your work surface, chair, and equipment are adjusted to the appropriate height and position to promote good posture and minimize strain on the body.
   - Maintain proper alignment of your body, including your back, neck, and limbs, while operating the embroidery machine.
2. **Adequate Lighting:** Ensure that your work area is well-lit to minimize eye strain and promote clear visibility of the embroidery work.
   - Use adjustable task lighting if necessary to direct light precisely where it is needed.
3. **Proper Ventilation:** Ensure that your work area is adequately ventilated to prevent the buildup of fumes or dust that may be generated during the embroidery process. If required, use local exhaust ventilation or wear personal protective equipment, such as masks or respirators, to protect against airborne particles or chemicals.
4. **Safe Handling of Materials and Chemicals:** Follow safe handling practices when working with materials, such as fabrics, stabilizers, and threads. Be aware of any potential hazards associated with the materials you are using and take appropriate precautions to minimize risks.
   - Store and handle chemicals, such as adhesives or cleaning agents, according to the manufacturer's instructions and any applicable safety data sheets (SDS).
5. **Electrical Safety:** Ensure that your embroidery machine and electrical connections are properly grounded and in good working condition. Avoid overloading electrical circuits and use surge protectors or circuit breakers as needed.
   - Regularly inspect electrical cords and plugs for signs of damage and replace them if necessary.

6. **Safe Tool and Equipment Use:** Follow safe operating procedures for the embroidery machine and any other tools or equipment you use during the embroidery process. Use guards, safety features, and lockout/tagout procedures as required preventing accidents or injuries.

- Regularly inspect tools and equipment for damage or wear and report any issues to the appropriate personnel.

7. **Regular Breaks and Stretching:** Take regular breaks during extended periods of embroidery work to prevent fatigue and reduce the risk of musculoskeletal injuries.

- Incorporate stretching exercises for your hands, arms, neck, and back to relieve tension and promote blood circulation.

8. **Training and Awareness:** Ensure that you receive proper training on safe work practices, including the operation of the embroidery machine, handling of materials and chemicals, and emergency procedures.

- Stay updated on OHS policies and procedures relevant to your work environment.

Remember to adhere to any specific OHS regulations or guidelines that apply to your region or workplace. If you have concerns about OHS practices or encounter any safety issues, report them to your supervisor or the appropriate OHS representative to ensure they are addressed promptly.

4.2 Produce digital embroidery

4.2.1 How to Produce Digital Embroidery

Embroidery is a beautiful and intricate art form that involves stitching designs onto fabric. In modern times, embroidery has become more accessible through the use of digital files, which can be created using specialized software and then used with embroidery machines.

To produce digital embroidery, follow these steps:

Step 1: Choose Your Design

The first step in creating a digital embroidery file is selecting the design you want to stitch. This can be a logo, an illustration, a text, or any other image you wish to embroider. Keep in mind that highly detailed or complex embroidery designs may require more time and effort to digitize effectively.



Figure 4.1 Choose Your Design

Step 2: Prepare Your Design

Once you have chosen your design, it's essential to prepare it for digitization. This involves cleaning up the image, adjusting the colors, and simplifying the design if necessary. Ensure that the design is clear, with distinct lines and shapes, as this will make the digitizing process more straightforward.



Figure 4.2 Prepare Your Design

Step 3: Choose Embroidery Digitizing Software

To create a digital embroidery file, you will need specialized embroidery digitizing software. There are various options available on the market, each with its own set of features and complexity levels. Popular software includes Wilcom, Pulse, and Hatch. Select a software that suits your skill level.



Figure 4.3 Choose Embroidery Digitizing Software

Step 4: Import and Edit the Design

Once you have your embroidery digitizing software, import your prepared design into the program. The software will allow you to view and edit the design in a digital workspace. You can resize the design, rotate it, and make any necessary adjustments to ensure it fits your intended embroidery area.

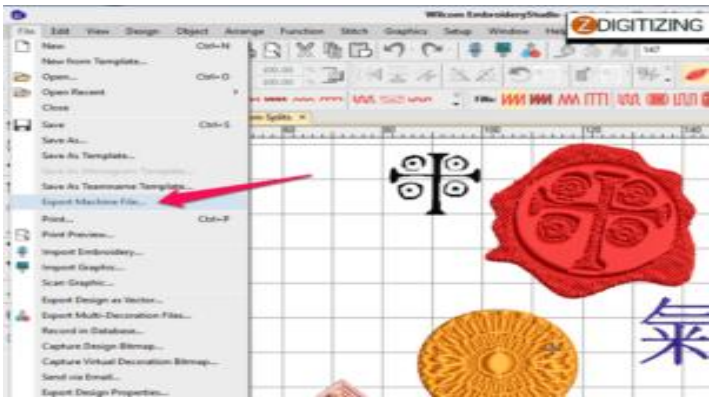


Figure 4.4 Import and Edit the Design

Step 5: Define Stitch Types and Parameters

Embroidery files are composed of different stitch types, each serving a specific purpose in creating the final design. In your digitizing software, you will have options to select stitch types such as satin stitches for outlines, fill stitches for solid areas, and run stitches for finer details. Experiment with different stitch types to achieve the desired effect.

Additionally, you can adjust various parameters to control aspects like stitch density, stitch length, and underlay stitches. These settings play a crucial role in determining the quality and appearance of the embroidered design. It's essential to find a balance that ensures the stitches are secure without being too dense or sparse.

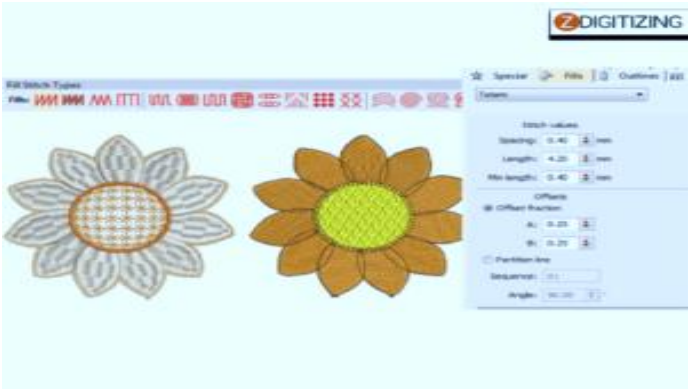


Figure 4.5 Define Stitch Types and Parameters

Step 6: Define Color Stops

Embroidery machines stitch designs using different thread colors. In your digitizing software, you can define color stops to indicate when the machine should change thread colors during the embroidery process. This feature ensures that your design is stitched accurately, with the correct colors in the right places.



Figure 4.6 Define Color Stops

Step 7: Test and Refine

Once you have defined the stitch types, parameters, and color stops, it's crucial to test your design before finalizing the digital file. Most digitizing software offers simulation or preview functions that allow you to see how the design will look when stitched. Review the simulation, paying attention to details, stitch angles, and color placements. Make any necessary adjustments or refinements to ensure the design meets your expectations.

Step 8: Save the Digital Embroidery File

After you have tested and refined your design, it's time to save the digital embroidery file. The most commonly used file formats for embroidery are DST, PES, and EXP. These formats are compatible with most embroidery machines. Save your file in the appropriate format, ensuring it is compatible with your specific machine or the machines of your intended embroidery service provider.

Step 9: Transfer the Digital File to the Embroidery Machine

To begin embroidering your design, you need to transfer the digital file to your embroidery machine. This can be done using various methods such as USB drives, memory cards, or connecting the machine directly to your computer. Consult your embroidery machine's user manual for instructions on how to transfer files.



Figure 4.8 Transfer the Digital File to the Embroidery Machine

To begin embroidering your design, you need to transfer the digital file to your embroidery machine. This can be done using various methods such as USB drives, memory cards, or connecting the machine directly to your computer. Consult your embroidery machine's user manual for instructions on how to transfer files.

Step 10: Set Up the Fabric and Thread

Before starting the embroidery process, prepare your fabric and thread. Choose the appropriate fabric type and stabilizer for your design. Hoop the fabric tightly, ensuring it remains that during the stitching process. Thread your embroidery machine with the colors specified in your digital embroidery file.

Step 11: Embroider Your Design

With the fabric hooped and the machine threaded, it's time to embroider your design. Follow the instructions provided by your embroidery machine manufacturer for setting up and operating the machine. Ensure that the machine is properly calibrated, and the design is aligned correctly with the fabric. Start the embroidery process and monitor it closely to address any issues that may arise.

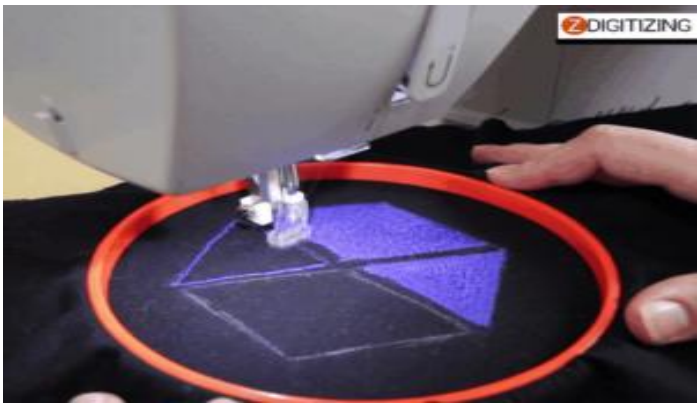


Figure 4.9 Embroider Your Design

4.2.2 Produce embroidery showing appropriate techniques and procedures

Hand embroidery is a traditional embellishment technique that is within the reach of any sewer. Watch to learn how to create the five basic embroidery stitches, chain stitch, fly stitch, blanket stitch, couching stitch, and web stitch. These five can be combined with each other to create decorative designs.

Types of embroidery techniques

Popular types of embroidery are: Outline Embroidery, White work Embroidery, Candle Wicking Embroidery, Patchwork Embroidery, and Shadow Work Embroidery. The most common types of embroidery stitches are: Backstitch, Running Stitch, Straight Stitch, French knot, Stem Stitch, Chain Stitch, and Satin Stitch.A

Procedures of embroidery work

Step 1: Purchase embroidery materials.

Step 2: Hoop the fabric.

Step 3: Pick the pattern.

Step 4: Trace the pattern onto the fabric.

Step 5: Thread the needle.

Step 6: Start stitching.

Step 7: Rethread the needle.



Figure 4.1 produce embroidery design

4.3 Assess works and adjusting machines

Assessing and checking digital embroidery work involves evaluating and examining the quality, accuracy, and overall appearance of the embroidery design. It includes assessing factors such as stitch quality, design placement, colour accuracy, and adherence to client requirements. Checking involves verifying stitching parameters, thread colours, design alignment, and cleanliness. The process helps identify issues and allows for necessary adjustments to ensure the final product meets the required standards and client expectations.

To assess and check digital embroidery work, follow these steps:

1. **Visual Inspection:** Carefully examine the embroidered design for any visible issues or defects, such as skipped stitches, loose threads, or puckering. Check the overall appearance of the design, ensuring that it is well-executed, clean, and aligned correctly
2. **Stitch Quality:** Evaluate the quality of the stitches by observing their uniformity and consistency. Look for any irregularities, such as uneven stitch lengths, thread tension issues, or distorted stitches. Assess the density of the stitches to ensure they adequately cover the design area without being too sparse or too dense.
3. **Colour Accuracy:** Compare the embroidered colours to the original design or color specifications. Ensure that the thread colours used match the desired colors accurately. Check for any inconsistencies or variations in colour placement.
4. **Design Placement and Alignment:** Verify that the design is placed correctly on the fabric, as intended. Ensure that the design is centered and aligned properly with any reference points or guidelines. Check for any distortions or warping of the design caused by improper hooping or tension issues.
5. **Trimming and Cleanliness:** Inspect the embroidery for any excess threads, jump stitches, or loose ends. Trim any stray threads or jump stitches to achieve a clean and professional appearance. Check for any dirt, stains, or residue on the fabric or embroidery and clean if necessary.
6. **Fabric and Hoop Marks:** Assess the fabric for any visible marks or impressions caused by the hooping process. Check if these marks can be removed or minimized through post-production techniques such as steaming or pressing.

7. **Overall Aesthetics and Presentation:** Evaluate the overall look and impact of the embroidery. Consider factors such as the clarity of the design, the choice of thread colors, and the suitability of the design for the selected fabric. Assess whether the embroidery meets the desired aesthetic standards and the expectations of the client or intended audience.

It's important to note that the assessment process may vary depending on the specific requirements of the project and the desired level of quality. Additionally, it is recommended to refer to industry standards, consult with embroidery experts, and consider client feedback for specific guidelines and best practices when assessing and checking digital embroidery work.

To adjust digital embroidery work, follow these steps:

1. **Identify the Issues:** Review the assessment of the embroidery work to identify specific areas that require adjustment or improvement.
2. **Adjust Stitching Parameters:** Refer to the machine's manual or consult with embroidery experts to identify the appropriate adjustments for the identified issues. Modify stitching parameters such as stitch density, stitch type, thread tension, or needle selection.
3. **Recheck Design Placement:** Use the machine's interface or software to reposition and align the design if misplacement was identified during the assessment.
4. **Thread Color Correction:** If the thread colors used in the embroidery do not match the desired colors, select the appropriate thread colors and re-embroider the affected areas.
5. **Address Stitching Issues:** Repair any stitching issues, such as skipped stitches, thread breaks, or loose threads, by reworking those specific areas.
6. **Post-Production Adjustments:** Consider post-production techniques such as steaming, washing, or ironing to enhance the final appearance of the embroidery.
7. **Reassess and Repeat as Needed:** After making adjustments, reassess the embroidery work to determine if the issues have been adequately addressed. Repeat the necessary steps until the desired quality is achieved.

Remember to document the adjustments made during the process and seek feedback from clients or experienced individuals for further refinement.

4.4 Manage embroidery production problems

A managing digital embroidery production problem, such as thread breaks, requires a systematic approach to identify the root cause and implement appropriate solutions. Here's a step-by-step process to address thread breaks in digital embroidery production:

1. **Identify the Cause:** Examine the embroidery machine and the specific area where the thread break occurred.
    - Check if there are any visible issues, such as tangled thread, misaligned needle, or improper tension.
2. **Check Thread Quality:** Ensure that the thread being used is suitable for embroidery and of good quality.
    - Verify that the thread is not old, brittle, or prone to breaking.
    - Consider using high-quality embroidery thread from reputable brands.
3. **Check Needle and Bobbin:** Inspect the needle for any damage or dullness. Replace the needle if necessary.
    - Verify that the needle is properly inserted and tightened in the machine.
    - Check the bobbin thread to ensure it is correctly wound and threaded.
4. **Adjust Tension:** Check the thread tension settings on the machine.
    - Adjust the tension as needed, making slight changes incrementally.
    - Increase tension if the thread is too loose or decrease tension if it's too tight.
5. **Check Machine Speed and Settings**:
    - Ensure that the embroidery machine is running at an appropriate speed.
    - Adjust the machine speed if necessary, as high speeds can contribute to thread breaks.
    - Verify that the machine settings are suitable for the type of fabric and design being embroidered.
6. **Hooping and Stabilizer:** Evaluate the hooping technique and make sure the fabric is securely hooped.

- Ensure that the stabilizer is appropriate for the fabric and design.
- Adjust the hooping tension if needed.

7. **Clean and Lubricate:** Regularly clean the embroidery machine, removing any dust, lint, or debris that may interfere with smooth thread flow.
   - Lubricate the machine as per the manufacturer's instructions to ensure smooth operation.
8. **Test and Monitor:** After implementing adjustments, conduct test runs on scrap fabric to check if the thread breaks persist.
   - Monitor the embroidery production closely, observing for any recurring thread break issues.
9. **Document and Troubleshoot:** Keep a record of the adjustments made and their impact on reducing thread breaks.
   - If thread breaks persist despite adjustments, consult the machine manual, seek guidance from embroidery experts, or contact technical support for further troubleshooting.

By following these steps and addressing thread breaks systematically, you can minimize interruptions in the digital embroidery production process and achieve smoother, more efficient operations.

SELF-CHECK 04

Name: _____ **Date:** _____

Test: Short Answer Questions

Instruction: write short answer for the given question. You are provided 4 minute for question and have 2 points.

1. How to apply (OHS) practices to produce digital embroidery?
2. List the production steps of digital embroidery?
3. How to assess and check digital embroidery work, explain with steps?
4. What is embroidery design?
5. How to manage embroidery production problems to address thread breaks?

OPERATIONAL SHEET 03

Operation Title: Produce digital Embroidery

Purpose: To show how to set and produce digital embroidery

Conditions/ Situations for the Operation: Trainees should know the production process of digital embroidery.

Equipment, Tools and Materials: digital embroidery machine, embroidery software, design files, hoops, stabilizers, needles, fabric or garments, scissors /thread clippers and optional Accessories.

Precautions: Turn off your machine when you are not using it, Clean your machine, Cover your thread, Wipe down your machine after use, Cover your embroidery machine, , Use the correct weight of embroidery thread, Change your needles regularly and Use the right tools when required.

Quality Criteria: All steps were completed in the correct sequence, the machine should operate correctly and your work should be neat and accurate

PROCEDURES:

STEPS – To produce garment embroidery design

Step 1: Choose garment embroidery Design

Step 2: Prepare garment embroidery Design

Step 3: Choose Embroidery Digitizing Software

Step 4: Import and Edit the Design

Step 5: Define Stitch Types and Parameters

Step 6: Define Color Stops

Step 7: Test and Refine

Step 8: Save the Digital Embroidery File

Step 9: Transfer the Digital File to the Embroidery Machine

Step 10: Set Up the Fabric and Thread

Step 11: Produce Embroider Design

Step 12: Assess and check digital embroidery work

LAB TEST – 03

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 4 hours. Perform the following tasks by taking time study for each operation repeatedly, according to the time set and obtain the following result.

Task1. Prepare the embroidery machine

Task2. Load the embroidery design.

Task.3. produce embroider design:

Task4. Inspect the finished embroidery:

Task5. Package the finished embroidery

UNIT FIVE: Dispatch Completed Work

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Completed work
- Report and Correct faults
- Complete work

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Check completed work
- Report and record any faults
- Complete and documentation work

5.1 Completed work

When you have completed digital embroidery work, it means that the design has been successfully stitched onto the fabric or garment using digital embroidery techniques. Here are the key steps involved in completing digital embroidery work:

1. **Design Preparation:** Ensure that the embroidery design file is properly formatted and compatible with the embroidery machine. Select the appropriate thread colors and types based on the design and desired outcome.
2. **Hooping:** Securely hoop the fabric or garment to ensure stability during the embroidery process. Align the hoop with the designated area for embroidery, ensuring proper placement and tension.
3. **Machine Setup:** Set up the embroidery machine with the correct design file and thread colors. Calibrate the machine settings, including stitch density, stitch length, and machine speed, according to the design requirements.
4. **Embroidery Process:** Start the embroidery machine, allowing it to stitch the design onto the fabric or garment. Monitor the process to ensure proper thread flow, stitch formation, and overall quality.
5. **Thread Management:** Properly manage the thread during the embroidery process to minimize thread breaks, tangles, or other disruptions. Trim excess thread tails or jump stitches as necessary to maintain a clean and professional appearance.
6. **Finishing:** Once the embroidery is complete, stop the machine and remove the fabric or garment from the hoop. Inspect the embroidery for any visible issues or defects, such as loose threads or puckering.
7. **Post-Production:** Conduct any necessary post-production tasks, such as trimming excess threads, steaming or pressing to remove wrinkles, and ensuring the overall neatness of the embroidery.
8. **Quality Control:** Perform a final quality control check to ensure that the embroidery meets the desired standards, specifications, and customer requirements. Verify the stitch quality, design accuracy, color consistency, and overall appearance of the embroidery.

9. **Packaging or Distribution:** Prepare the completed embroidered items for packaging or distribution, following any specific requirements or guidelines. Label or tag the items appropriately, providing necessary information or branding elements.
10. **Documentation:** Maintain proper documentation of the completed embroidery work, including design files, production records, or customer specifications for future reference.

By following these steps, you can successfully complete digital embroidery work, resulting in a finished product that meets the desired standards and satisfies the requirements of the client or intended audience.

5.2 Identify and record faults to report

Embroidery defects

These arise because of faults and problems in the stitches, or fabrics or design, or in all. Some of the basic embroidery defects are

A. Fabric damage or needle holes:-These are caused because of the following reasons:

- The use of incorrect type and size of needle
- Adding a lot of stitches on the same spot
- Not tearing the backing properly
- The fabric getting damaged when the stitches are pulled out and
- The damage caused on the fabric because of recurring needle piercing, especially around the corners of the embroidery.

B. Fabric gapping: - this defect occurs when the fabric gaps are visible through the embroidery design in the background, either in the middle part of the design or on the edges.

A. Missed trims: - when threads are left on the front side in the embroidery design between the designs, it is called missed trims.

B. Improper placement of embroidery design - This is a result of the incorrect tracing of the design**.**

C. Poor registration of design:-When the embroidery design and stitches are not arranged correctly, then this defect can be seen.

D. Bunching at the corners - When the corners of the embroidery design are not crisp because of gathering up of the thread at a point, it is known as bunching.

Common Embroidery Sewing Problems; Possible Causes and Solutions

Problem	Possible Cause	Solution
Thread breaks, slides up one ply above the needle eye	1. Burr on hoop 2. hook point too far from needle 3. Machine threaded incorrectly 4. Incorrect needle bar height	1. Replace or polish hook 2. Adjust distance 3. Rethread machine correctly 4. Adjust need bar height
Top thread is pulled to the back of the garment, creating a thread pile-up at the back	1. Tension too tight 2. Machine threaded incorrectly 3. Dry hook race	1. Adjust tension 2. Rethread machine correctly 3. Lubricate race
Excessive thread breakage	1. Incorrect thread timing 2. Incorrect needle bar height 3. Burr on hook 4. Tension too tight 5. Needle incorrectly installed in needle bar	1. Adjust timing 2. Adjust needle bar height 3. Replace or polish hook 4. Adjust tension 5. Reinstall needle. Make sure scarf of needle is facing the hook
Stitching does not follow pattern outline	1. Bent needle 2. Hoop loose in frame	1. Replace needle 2. Tighten hoop in frame
Frame board shifts out of alignment while pattern is running	1. Machine running too fast	1. Adjust machine speed. (If pattern is not programmed to slow down, use the computer to change to slower speed).
Flat or hidden stitches	1. Tension too tight 2. Nap or pile fabric tends to hide thread	1. Loosen tension 2. Use temporary transparent film topping material to make stitches stand up
Needle holes in garment	1. Material loose in hoop 2. Thin material 3. Too many stitches for point of cut 4. Burred needle	1. Make material tight in hoop 2. Add tear-away backing (most applications) or cut-away backing (preferred for delicate fabrics, knits and sweaters) 3. Change pattern for satisfactory look 4. Replace needle (light/medium ball point)

5.3 Direct completed work to next operation.

Complete Embroidery work involves materials and methods which can determine the quality of the final product. Base materials, different raw materials, various techniques to carry out stitches and many other finishing aspects in the end products are important from the point of view of quality. Finishing of the embroidered products is one of the very important aspects of the quality of embroidered finishing process.

After completing digital embroidery work, the next operation typically involves post-production tasks and preparing the embroidered item for its intended use or distribution. Here are the common steps involved in transitioning from completed digital embroidery work to the next operation:

1. **Remove from the Embroidery Machine**: Carefully remove the fabric or garment from the embroidery machine, ensuring that it is not damaged or snagged in the process.
2. **Trim Excess Threads**: Inspect the embroidered design and trim any excess threads or jump stitches using sharp scissors or thread clippers. Pay attention to detail and ensure that the trimmings are clean and precise, giving the embroidery a polished appearance.
3. **Inspect and Repair:** Conduct a thorough inspection of the embroidered item to identify any remaining faults or issues. Address any noticeable defects, such as loose threads, puckering, or misaligned stitches, by making necessary repairs or adjustments.
4. **Quality Control Check:** Perform a final quality control check to ensure that the embroidery meets the desired standards, specifications, and customer requirements. Verify the stitch quality, design placement, color accuracy, and overall appearance of the embroidery.
5. **Finishing Touches:** Depending on the specific requirements, apply any additional finishing touches to enhance the embroidered item. This may include steaming, pressing, or ironing to remove wrinkles, flatten the fabric, or add a professional touch to the embroidery.
6. **Packaging and Labeling:** Prepare the embroidered item for packaging or further processing. If applicable, attach labels, tags, or branding elements to identify the item and provide relevant information.

7. **Documentation and Record-keeping**: Maintain proper documentation of the completed embroidery work, including any relevant details, such as design files, production records, or customer specifications.
8. **Handoff or Distribution:** Depending on the specific workflow and business processes, hand off the completed embroidered items to the next operation, whether it's packaging, shipping, or further assembly. Ensure effective communication with the relevant personnel or departments to facilitate a smooth transition and maintain production flow.

By following these steps, you can effectively complete the digital embroidery process and prepare the embroidered items for the subsequent stages of production, packaging, or distribution.

5.4 Complete work documentation

When documenting completed digital embroidery work, it is important to maintain comprehensive records for future reference, quality control, and customer satisfaction. Key elements to include in the documentation are:

1. **Design Details:** Specify the design file used, dimensions, placement, and any client instructions.
2. **Production Information:** Record the completion date, details, and production settings.
3. **Thread and Color Information:** List the thread colors used, including brand, code/name, and specific areas.
4. **Fabric or Garment Details:** Identify fabric/garment type and any relevant considerations.
5. **Quality Control Check:** Describe the evaluation criteria and any faults or issues found.
6. **Client or Order Information:** Record client details, order number, and any provided instructions or feedback.
7. **Supporting Visuals:** Include photographs or images of the completed embroidery work.
8. **Additional Notes or Comments:** Provide any additional observations, challenges, or recommendations.

By maintaining detailed documentation, you can track information, ensure consistency, and meet customer needs.

SELF- CHECK 05

Part - I: Multiple Choices

Instruction:-choose the answer for the following question you have given 2 Minute for each question. (Each question carries 1 Point)

1. What is the final step in completing digital embroidery work before transitioning to the next operation?
   A. Packaging and Labeling
   B. Handoff or Distribution
   C. Inspecting and Repairing
   D. Removing from the Embroidery Machine
2. What is the final step in completing digital embroidery work?
   A. Packaging or distribution
   B. Hooping the fabric
   C. Calibrating the machine settings
   D. Design preparation
3. What can cause fabric damage or needle holes in embroidery?
   A. Using incorrect type and size of needle
   B. Adding too many stitches on the same spot
   C. Not tearing the backing properly D. All of the above
4. What is the first step in completing digital embroidery work?
   A. Design Preparation C. Machine Setup
   B. Hooping D. Embroidery Process
5. What is the term used for threads left on the front side in the embroidery design between designs?
   A. Fabric damage or needle holes
   B. Fabric gapping
   C. Missed trims
   D. None of the above

6. What is one of the key elements to include in the documentation of completed digital embroidery work?
   A. Design Details
   C. Thread and Color Information
   B. Production Information
   D. Fabric or Garment Details
7. What information should be recorded under the Design Details section of the documentation?
   A. Completion date and machine details
   B. Thread colors used and specific areas
   C. Client details and order number
   D. Design file used, dimensions, and placement
8. Which step involves performing a final quality control check to ensure the embroidery meets desired standards and specifications?
   A. Thread Management
   C. Quality Control
   B. Finishing
   D. Packaging or Distribution
9. Which step involves trimming excess threads, steaming or pressing to remove wrinkles, and ensuring the overall neatness of the embroidery?
   A. Thread Management
   C. Quality Control
   B. Post-Production
   D. Documentation
10. What is the purpose of conducting a final quality control check after completing digital embroidery work?
    A. To remove excess threads and jump stitches
    B. To inspect and repair any remaining faults or issues
    C. To enhance the embroidered item with finishing touches
    D. To ensure that the embroidery meets desired standards and specifications

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Ministry of Labor and Skills

DEVELOPER PROFILE

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