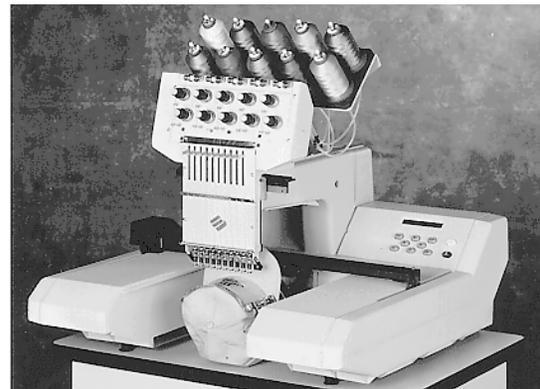# Installation, Operation, and Maintenance Manual for the EMC 10T, 10/4, & 10/4T embroidery peripherals

- Single-Head and Four-Head Embroidery Peripherals

European Compliance version

Part Number 110266-01, Revision D

Melco
Embroidery Systems

A Saurer Group Company

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Quick Reference Guide

Single Head Embroidery Peripheral
EMC 10T Specifications

Maximum embroidery speed

900 stitches per minute, 800 stitches per minute on caps

Number of heads

1

Needles per head

10

Dimensions

76cm W x 69cm H x 76cm D
30" W x 27" H x 30" D

Weight

48kg
105 lbs

Shipping weight

69kg
151 lbs

Power consumption

100 W

Noise level and test conditions

Equivalent continuous A weighted sound pressure level at 1.6 meters from the floor is 75db.

The peak C weighted instantaneous sound pressure level is 75db.

The noise level was measured sewing a test design at 900 spm.

Recommended power conditioning equipment

Power line conditioner

Embroidering field size

28cm x 41cm
11" x 16"

Options

Cap frame option
Disk drive option

Compatibility

EDS lll and Premier

Intended use

The EMC 10T is designed to embroider on textile products which are placed easily in a Melco embroidery hoop. The machine should not be used on thick leather, wood, plastic, or other dense material.

Multi-Head Embroidery Peripheral
EMC 10/4 and 10/4T Specifications

Maximum embroidery speed

1000 stitches per minute, 800 stitches per minute on caps

Number of Heads

4

Number of needles

10 per sewing head

Dimensions

244cm W x 152cm H x 88cm D
96" W x 60" H x 34.5" D

Weight

318kg
700 lbs

Shipping weight

341kg
750 lbs

Power consumption

400 W

Noise level and test conditions

Equivalent continuous A weighted sound pressure level at 1.6 meters from the floor is 83db.

The peak C weighted instantaneous sound pressure level is 84db.

The noise level was measured sewing a test design at 900 spm.

Recommended power conditioning equipment

Power line conditioner

Embroidering field size

28cm x 41cm (per head)
11" x 16"

Options

Cap frame option
Disk drive option
Metal sash frame option

Compatibility

EDS III and Premier

Intended use

The EMC 10/4 and 10/4T are designed to embroider on textile products which are placed easily in a Melco embroidery hoop. The machine should not be used on thick leather, wood, plastic, or other dense material.

Explanation of Symbols

Caution!

Indicates a machine component will move. Keep clear!

Shock hazard. No user replaceable parts behind this label. Do not open!

Pinch point, Keep clear!

Pinch point, Keep clear!

Pinch points, Keep clear!

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1. Installation

Read the entire manual before operating the machine.

Unpacking

EMC 10T

Be careful when unpacking your new peripheral. A minimum of two people are required to lift the EMC 10T. Lift the machines in the locations shown below.

Figure 1-1
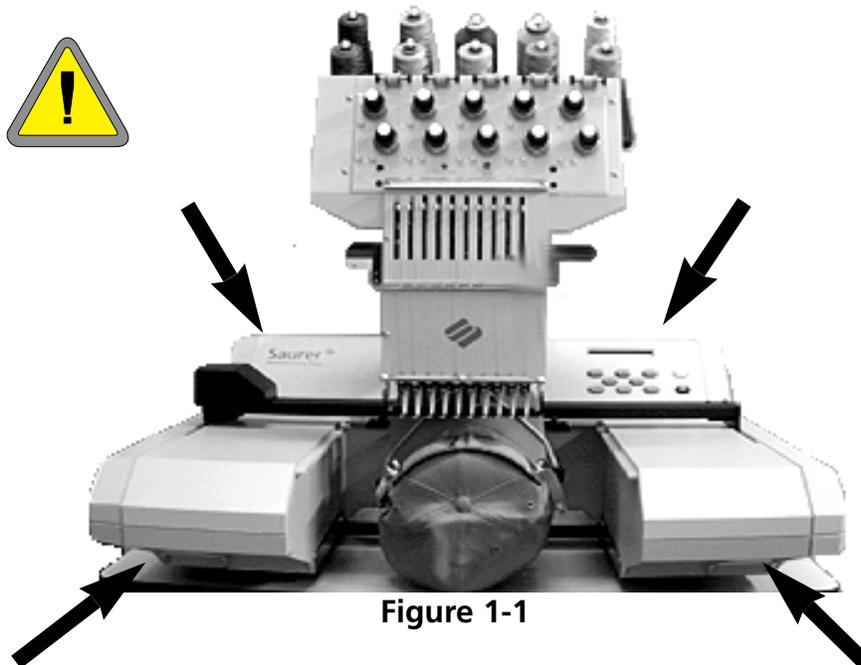
EMC 10/4 and 10/4T

Be careful when unpacking your new peripheral. On one end of the crate is a "window" of wood. This end is the door. Open the door by removing the nails from around the perimeter. Next remove the nails from around the bottom perimeter of the box. Slide the crate off the pallet. Use a forklift to lift the peripheral off the pallet. Place the forks in the locations shown below.

Do not contact the motors located here!
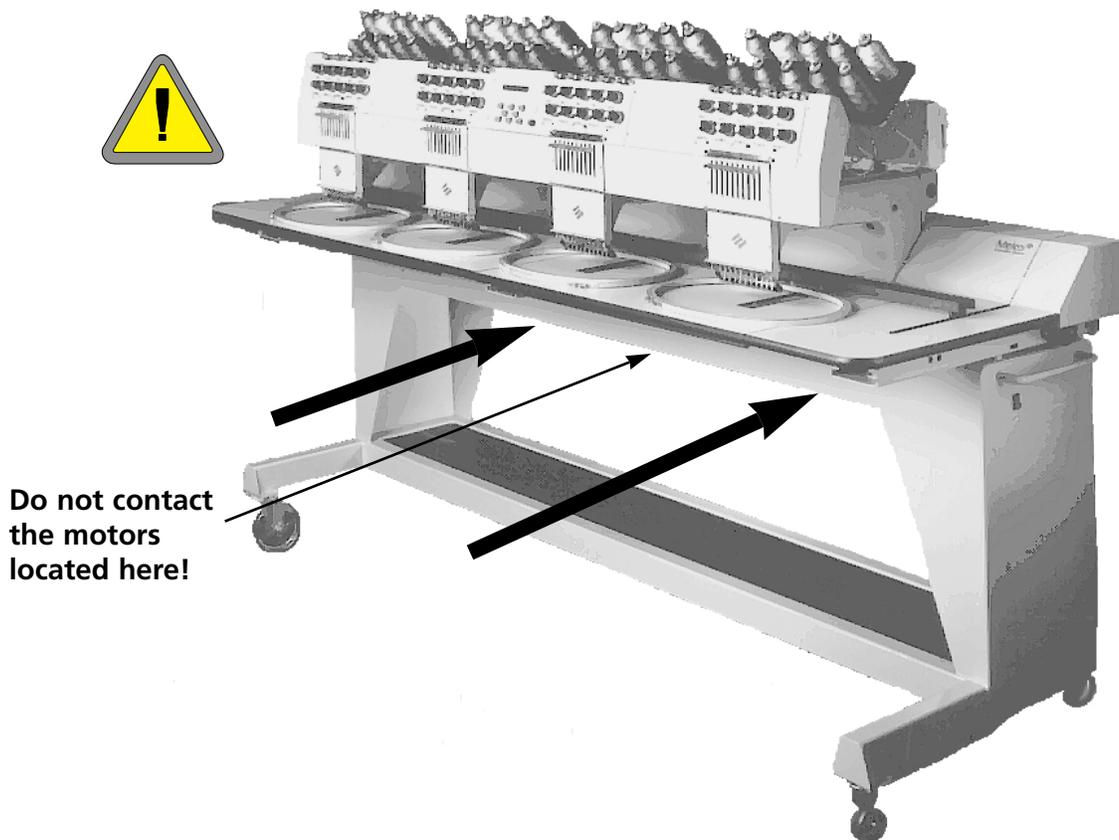
Figure 1-2 EMC

Moving

EMC 10T

Use two people to lift the machine. If the machine is on a cart, observe the precautions below.

Push slowly or cart may tip.
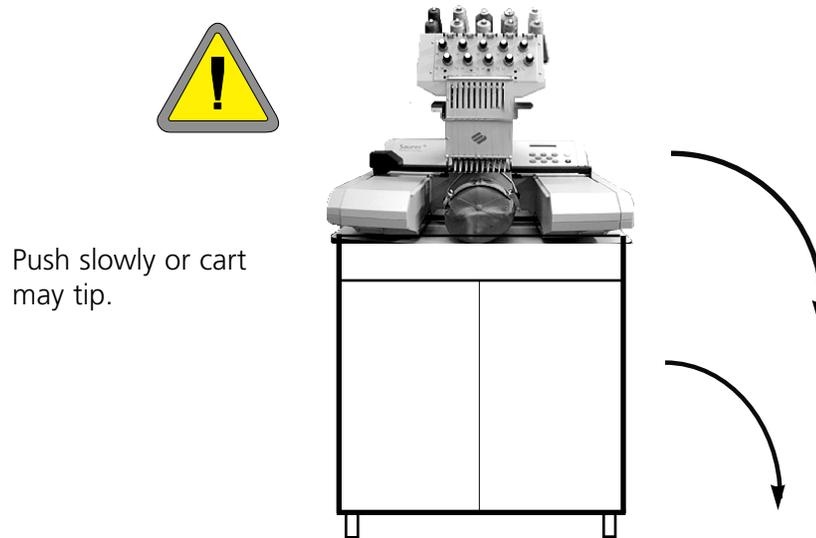
Figure 1-3

EMC 10/4 and 10/4T

Move the machine as indicated below. Disengage the brakes on the indicated wheels before attempting to move the machine. Engage the brakes when the machine is in the desired location.

Push in the direction of the arrows when moving the machine more than a short distance.

Brakes
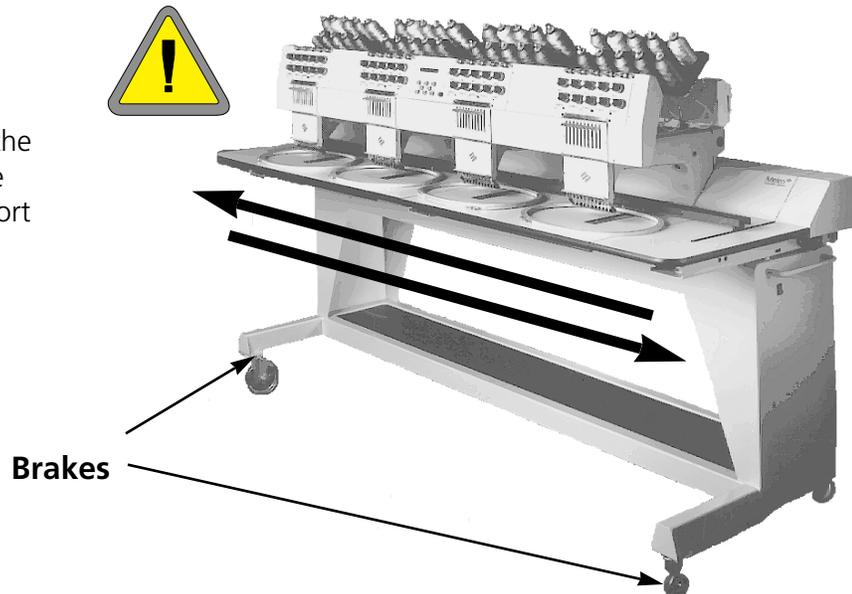
Figure 1-4

Set-Up

The following section describes how to assemble and connect the peripherals. To dismantle, reverse these steps.

Installing the table tops (10/4 and 10/4T Only)

There are five table top sections (see Figure 1-5). The two ends and the center section bolt to the table as shown in Figure 1-5. The remaining two sections slide into place as shown in Figure 1-6. This design provides an easy way to remove the table tops around the embroidery heads to attach the cap frame driver or perform maintenance.

1. Using four thumb screws for each section, attach the right, left, and center sections to the metal channels on the table. The screws are inserted from the underside of the table.

2. There is a 2-section shelf and a covering mat that comes with the table top assembly (see Figure 1-5). Place the shelf pieces on top of the brackets located in the base of the table and lay the mat on top of the shelf pieces.

2-piece shelf

Rubber mat
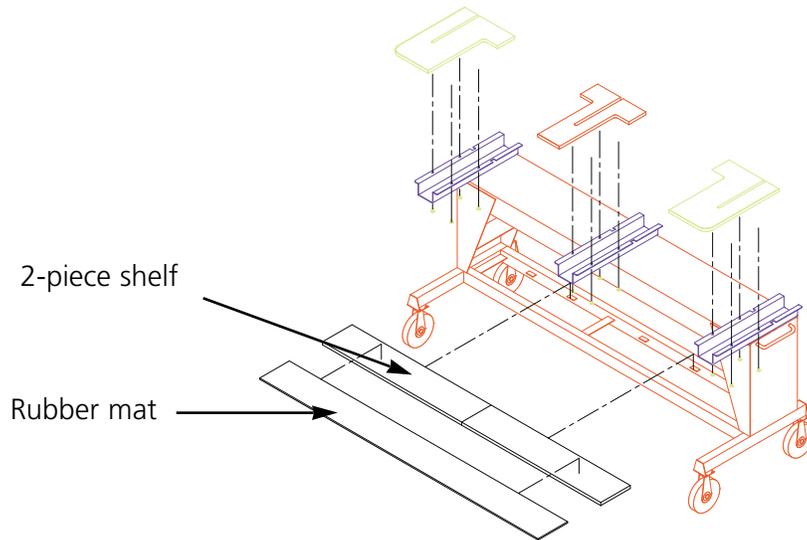
Figure 1-5

3. Slide the last two tops into place (see Figure 1-6). They fit on the guide rails of the end and center sections.
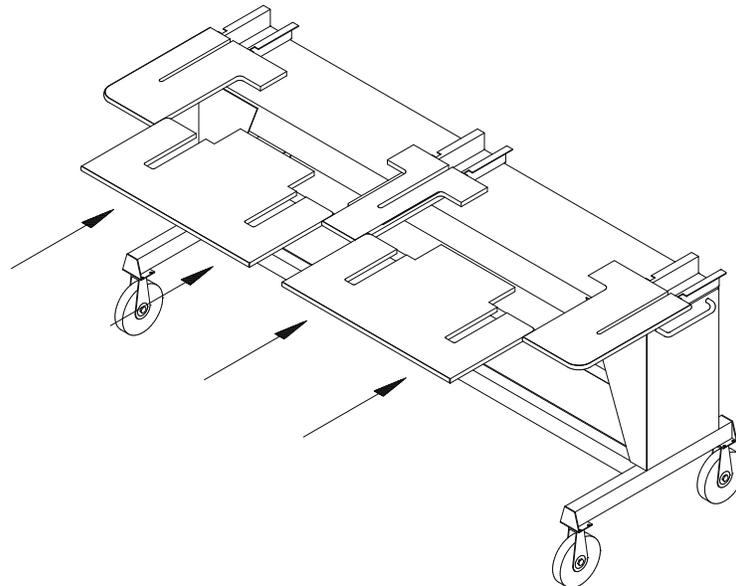
Figure 1-6

Installing the Covers (10/4 and 10/4T Only)

The five rear covers are attached to the peripheral frame with plastic tabs in the front and machine screws in the back. The covers must be installed in a specific sequence. Refer to Figure 1-7.

Follow these instructions to install the covers; reverse the order to remove them.

1. Slide cover #1 into place and attach the screws in the back.

2. Slide cover #2 into place and attach the screws in the back.

3. Slide cover #3 into place and attach the screws in the back.

4. Slide cover **#5** into place and attach the screws in the back.

5. Slide cover #4 into place and attach the screws in the back.

| Cover #1 | Cover #2 | Cover #3 | Cover #4 | Cover #5 |

Rear screws
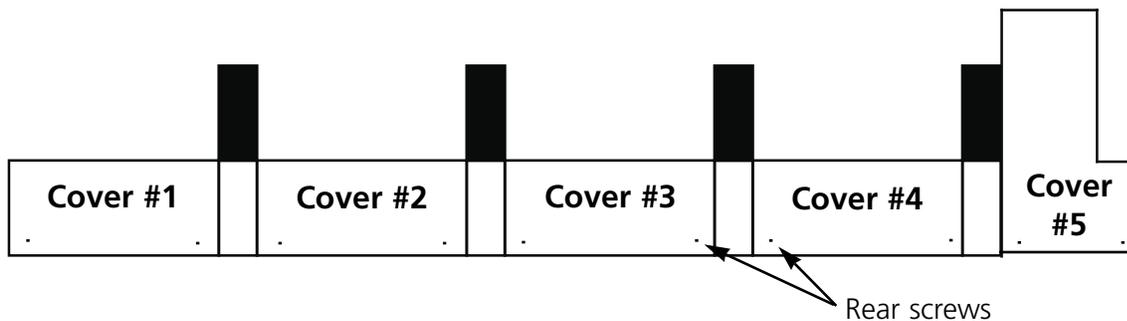
Figure 1-7

1-7

Connecting Cables

EMC 10 or 10T

1. Assure the power switch in in the "OFF" position.

2. Set the 115/220V selector switch to the correct position for your area.

3. Plug the power cable to the rear of the unit as shown in Figure 1-8.

4. Plug the other end of the cable to the power socket.
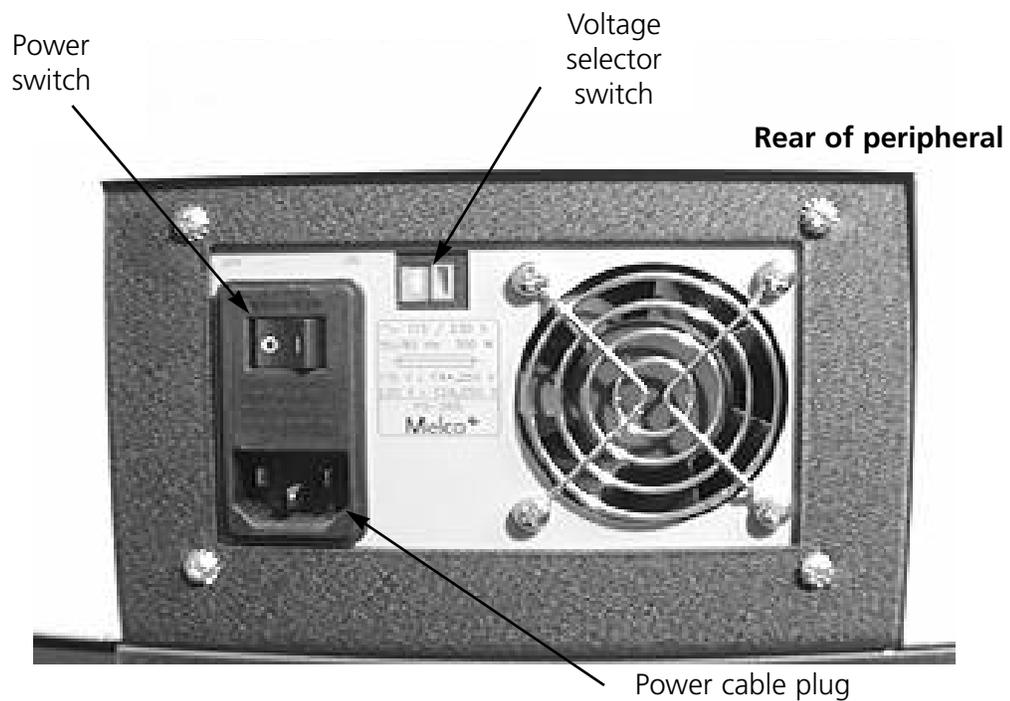
Figure 1-8

EMC 10/4 or 10/4T

Assure the power is in the OFF position, and attach the power cable as shown in Figure 1-9.

115/220V selector
switch
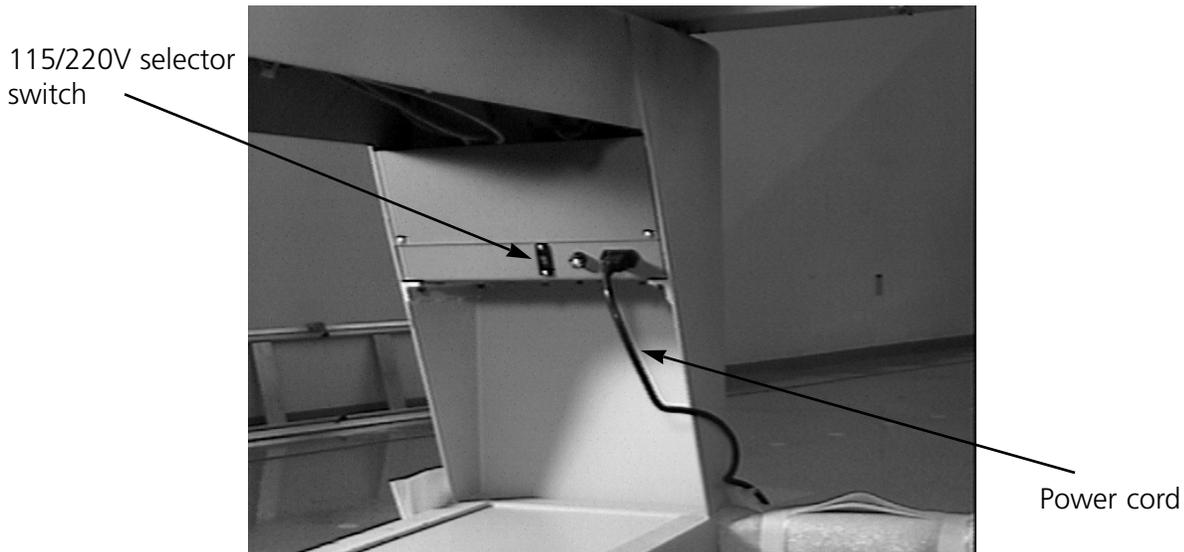
Power cord

Figure 1-9

Power Requirements

Melco suggest using a dedicated line with a surge protector.

Attaching the Peripheral to the Computer

Install the power cords from the computer, the monitor, and the embroidery peripheral to the power source outlet. Install the network cable between the computer and the peripheral. If only one peripheral device will be attached to the computer, install the terminator cable in one of the network ports and the network cable in the other. If more than one peripheral is attached to the computer, the terminator cables must be installed on the last peripheral of the series.

Configuring the Peripheral

The first time the machine is turned on, it must be configured with a peripheral program, unit number, and display language. This information is stored in memory and retrieved during each power up. **If the peripheral is not configured correctly, it will not operate properly and may be damaged.**

The unit number is a unique address for each machine the computer transfers designs to. If more than one machine uses the same address, errors will occur. EDS III and newer Melco applications use unit number 1-64.

To configure the peripheral:

1. Turn ON the power.

2. Move to the keyboard. Ignore any message flashing on the LCD.

3. Press and hold ⌃ ▲ ▼ at the same time.

4. Continue to hold the keys until the machine beeps, then release.

5. The LCD should display the model name; press ▲ OR ▼ to scroll to the correct model name for your machine.

6. Press ◄▤► and the peripheral program is set.

7. Press ▲ OR ▼ until you reach the unit number you want.

8. Press ◄▤► to set the unit number.

Language Selection

Booting From the Computer

Follow these steps to select the machine language:

1. Press ⌃ ▤ 2 times; Option Menu displays.

2. Press ↵ .

3. Press ▲ 2 times to Language Select, then press ↵ .

4. Press ▲ or ▼ to desired language, then press ↵ .

Booting From the DIsk Drive

Follow these steps to select the machine language:

1. Press ⌃ ▤ 3 times; Option Menu displays.

2. Press ↵ .

3. Press ▲ 2 times to Language Select, then press ↵ .

4. Press ▲ or ▼ to desired language, then press ↵ .

Note: Return the language setting to English before changing to another language.

Support Brackets (10/4 and 10/4T Only)

Two supports brackets, one on the right needle case (sewing head 1) and one on the left needle case (sewing head 4) must be removed prior to operation. Follow the steps below:

1. Remove the two supports (a caution tag is attached to each). Refer to Figure 1-10.

2. Move the needle case to needle 5 or 6. See Chapter 2, Operation.

3. Install the left and right end covers, as shown in Figure 1-10. The screws for the covers are installed on the machine.
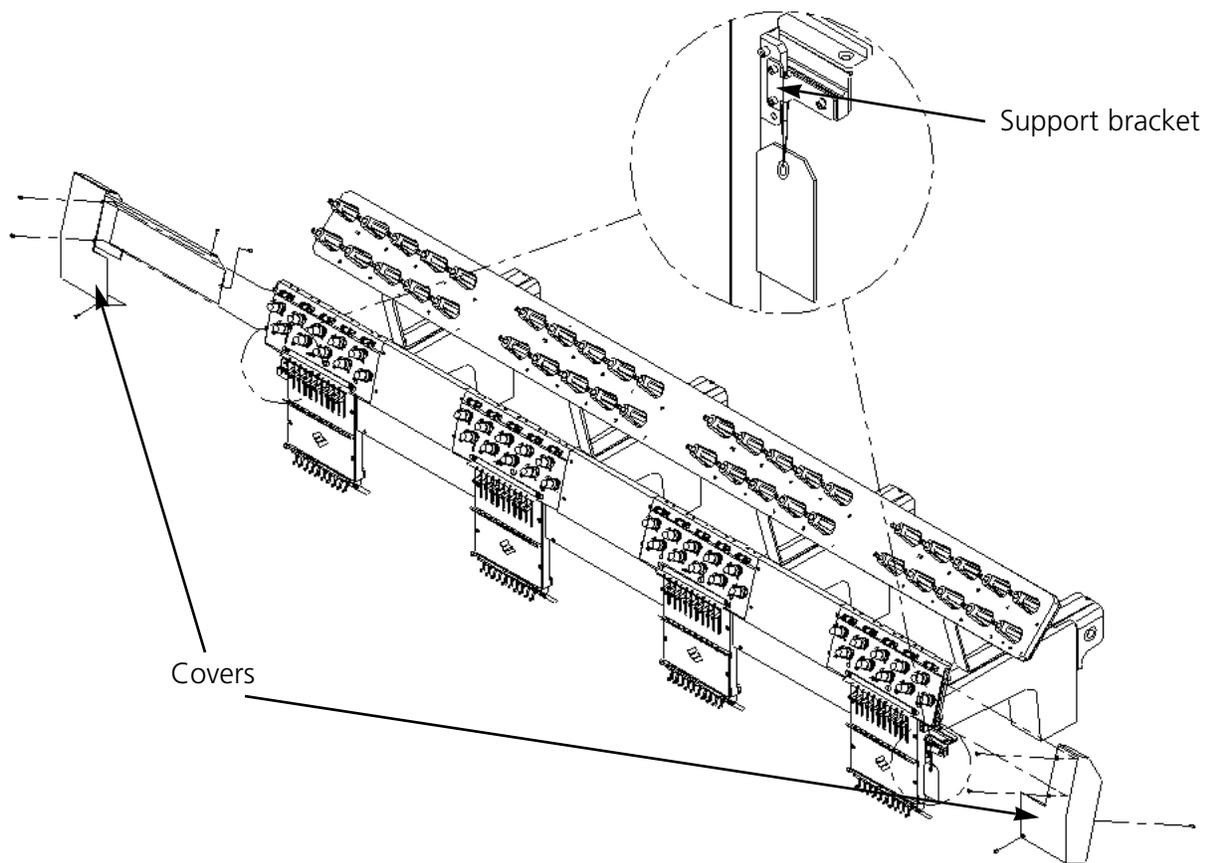
Figure 1-10

2. Operation

This chapter outlines machine operation; in addition, operators must attend a Melco approved training course prior to operating the machine.
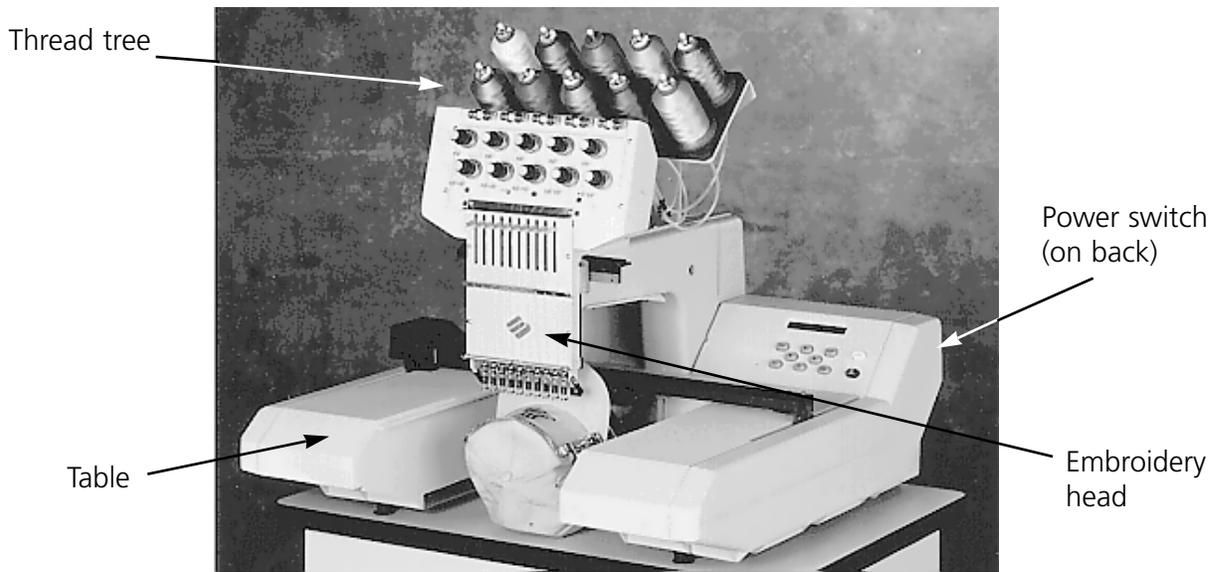
Figure 2-1
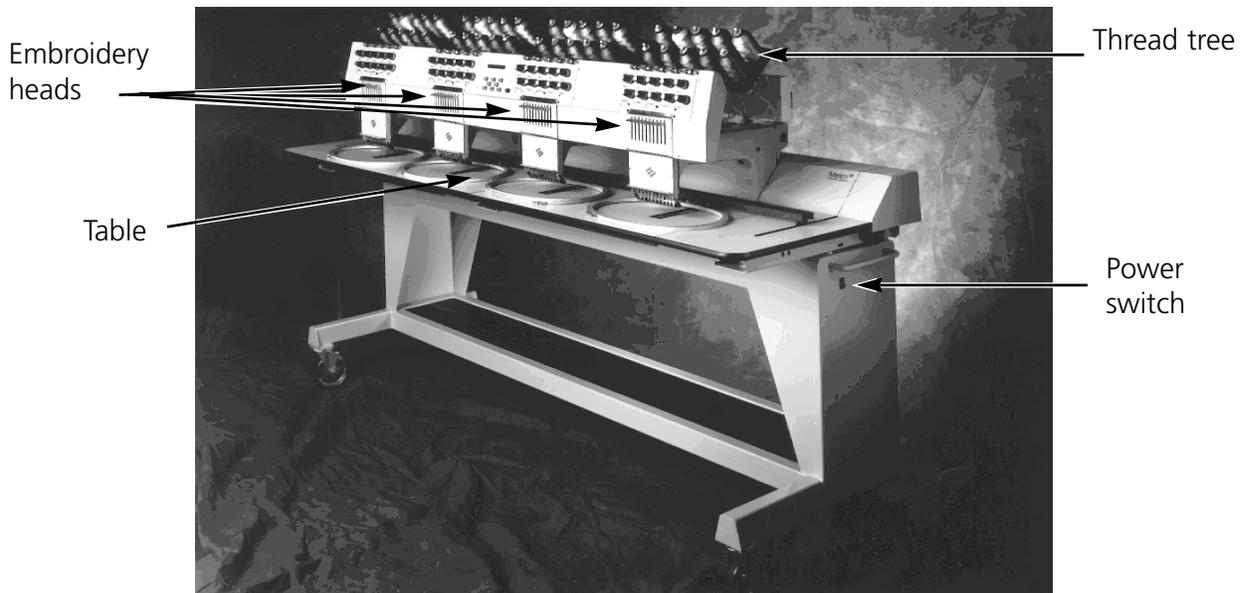
Figure 2-2

 Hazards of Operation

Caution!   Below are risk areas or danger points encountered during operation. Always wear eye protection while operating the machine to prevent injury in the event of a needle break.

Exposed Needles During Operation
Do not place body parts or other foreign objects under the needles during operation.
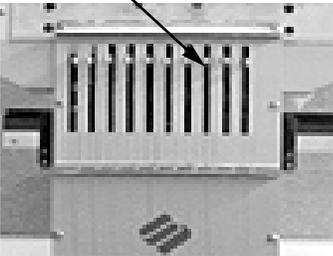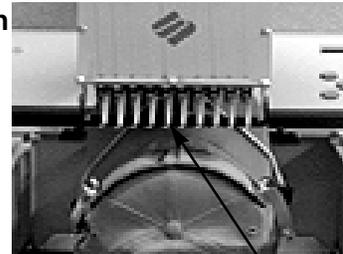
Take-up Lever Oscillation
Do not touch the take-up levers during operation

Pinch Points
Do not rest hands or other objects on the table top during operation. Do not reach behind needle case during operation with or without table top in place.
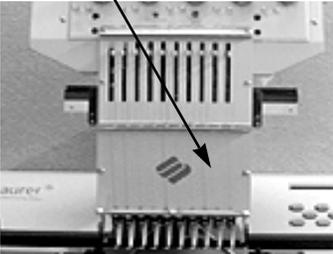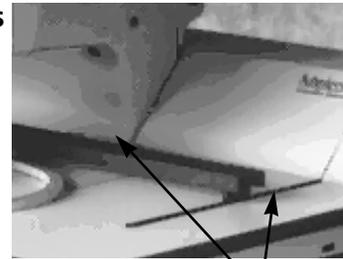
Needle Case Movements
Do not place hands or other objects on or around the needle case during operation.

Rotary Hook Rotation
Do not attempt to change bobbin thread during operation. Do not place hands or other objects in the rotary hook area during operation.
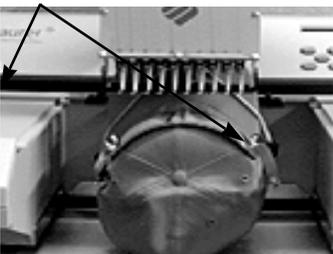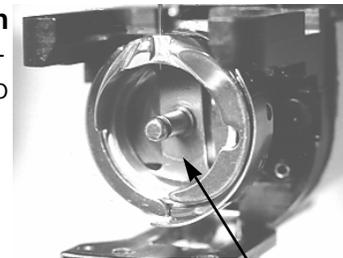
Cap Frame Pinch Points
Do not touch the cap frame, driver, or driver bar during operation.

Threading

Push the metal thread tubes up from the bottom, and remove the magnetic strips from the front of the heads. Place a cone of thread over the metal thread tube and onto the white plastic support. Push the first few inches of thread into the plastic supply tube. Use a can of compressed air to blow the thread through the supply tube.
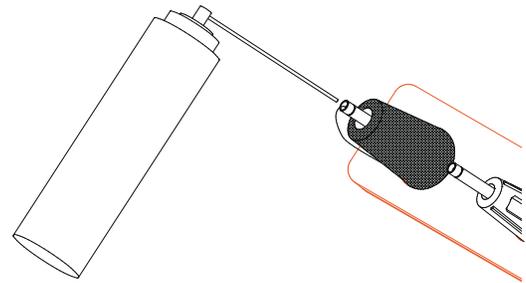
Figure 2-3

If you do not have compressed air, use the monofilament provided in the operator's kit. Push the monofilament up through the plastic supply tube, then "hook" the thread on the cut and pull the thread through the tube.

THE THREAD PATH
Numbers here represent numbered steps from the following page.
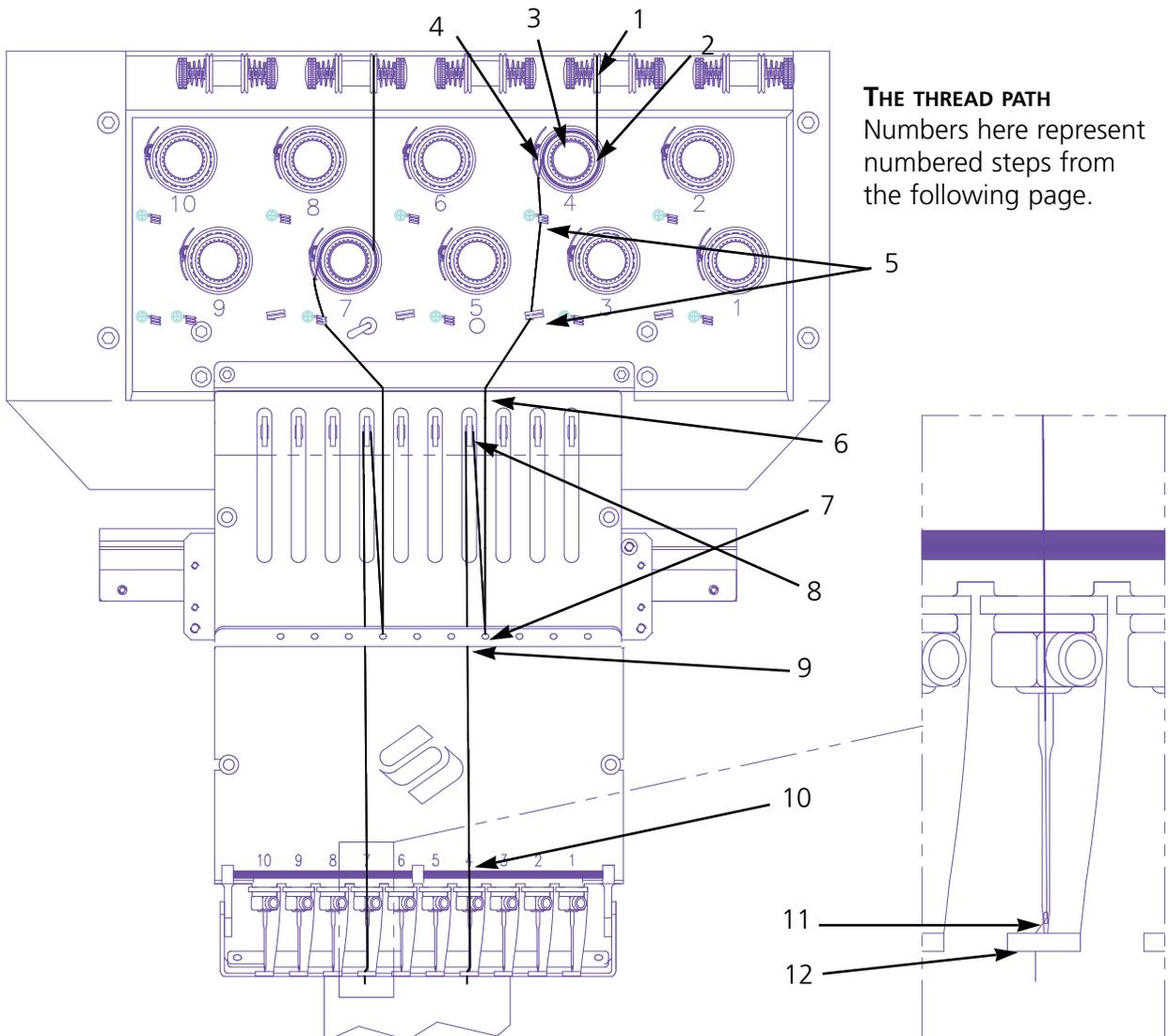
Figure 2-4

1. Pull the thread from the guide hole down between the pretensioner disks.

2. Route the thread down to the tensioner, between the two metal wheels of the disk.

3. Wrap the thread around the disk clockwise 1 and 1/2 times.

4. Route the thread over the top of the tension take-up spring. When you tug on the thread, the take-up spring should move and break contact with the thread break sensor post.

5. Route the thread down through the thread guide post(s). Threads using the top tensioners have two posts, threads using the bottom tensioners have one post.

6. The upper thread guide is just above the the take-up levers. Route the thread through it.

7. The middle thread guide is just below the take-up levers. Route the thread though the hole facing outward, from back to front.

8. Bring the thread through the take-up lever eye, from right to left.

9. Route the thread straight down to the middle thread guide, through the hole facing downward.

10. Drop the thread through the lower guide, just above the presser foot.

11. Run the thread through the eye of the needle, from front to back.

12. Pass the thread through the center of the presser foot.

13. Pull on the thread until you feel tensioner pressure.

14. Fasten the thread to the retainer spring and trim the end to about an inch in length.

15. Set the tension to approximately 115-135 grams required to pull the thread at the needle end.

Tensions

Embroidery tensions are controlled on both the upper and bobbin thread. The following table outlines when to adjust tensions.

Problem	Solution
Bobbin thread showing on top of garment	Top tension too tight and/or bobbin tension too loose
More than 1/3 of column showing bobbin thread on back of garment	Bobbin tension too loose
Less than 1/3 of column showing bobbin thread on back of garment	Bobbin tension too tight
Design puckering	Top and/or bobbin tension too tight
Top thread in design loose	Top tension too loose

Top Tensions

Pretensioners

The purpose of the pretensioner is to hold the thread taut for the main tensioner. As long as thread pulls easily through the pretensioners, they generally do not need adjustments.
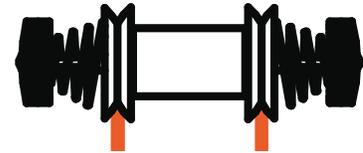
Figure 2-5

Main tensioners

Sets the upper tension. Tighten tension by turning the knob clockwise. Loosen by turning counterclockwise.

Rotate to adjust tension
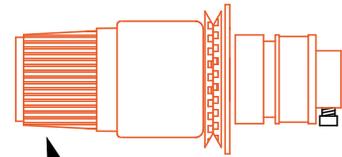
Bobbins

Leave 2-3 inches (5-7.5cm) of thread hanging free. Insert the bobbin and case with the pigtail facing up. Set the tension at approximately 7-14 ounces (20-40 grams) required to pull thread from the bobbin.

Figure 2-6

Side   Front   Bobbin   Bobbin case   Set screw

Pigtail

Note the thread direction
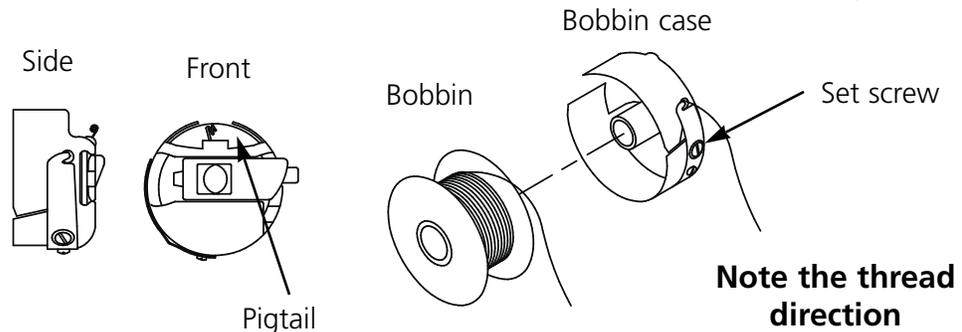
Figure 2-7

Keypad

EMERGENCY STOP   Halts all sewing motion immediately (EMC 10/4 and 10/4T only).

Starts embroidering. It is also used to start the TRACING function.

Stops machine motion.

Used to "frame forward" or "frame backward" in idle or in the FRAME menu.

EMC 10T   EMC 10/4 and 10/4T

Moves from one menu to the next. After the last menu displays, it wraps back to the first menu.

Never used alone. It is held down while pressing an additional key, allowing the other key to take on an alternate function.

Makes a selection. It is similar to clicking the OK button in Windows or pressing the [ENTER] key on your keyboard. It also scrolls through the idle menus.

Toggles the hoop carriage speed fast or slow.

Moves the needle position to the right in the embroidery field (hoop moves left). It is also used to select values for sub-menu options.

Moves the needle position to the left in the embroidery field (hoop moves to the right). It is also used to select values for sub-menu options.

Moves the needle position back in the embroidery field. It also scrolls up a menu list. It is also used to change sub-menu values.

Moves the needle position down in the embroidery field. It also scrolls down a menu list. It is also used to change sub-menu values.

A color change enable switch; hold down and use the left and right arrow keys to move the sewing head for a color change (10/4 and 10/4T Only).

A rack enable switch; hold down and use the arrow keys to position the rack (10/4 and 10/4T Only).

Key Combinations (press keys simultaneously)

Displays the previous menu.

Exits any sub-menu and displays one of three idle menus, even when the machine is embroidering.

Moves the needle case one position to the left when the machine is in idle.

Moves the needle case one position to the right when the machine is in idle.

Increases the maximum embroidery speed in increments of 50 spm (stitches per minute) while the machine is embroidering.

Decreases the embroidery speed in increments of 50 spm while the machine is embroidering.

Set Home

Press [⌨] until the display reads HOME, then press [↵]. The display will read SET HOME. Press [↵].

Select Hoop

In the HOME Menu, press [▲] OR [▼] until the display reads SELECT HOOP. Press [↵]. Press [▲] OR [▼] to scroll through the hoop options. When the correct hoop description is displayed, press [↵]. Press [↵] again to continue.

Hooping

For quality embroidery, material must be:

- Hooped so the design will be embroidered with the proper orientation

- Hooped without any folds

- Hooped as taut as possible without permanently stretching the fabric out of shape (especially knits and other loosely woven fabrics)

Place the outer hoop (the one with the mounting bracket) on a clean, flat surface with the mounting bracket facing UP (see Figure 2-8) Place the backing down, then the fabric, and then place the inner hoop inside the outer hoop.

Mounting Bracket Up   **Mounting Bracket Down**

Correct   Incorrect

Figure 2-8

Place Hoop on Machine

Place the left notch of the hoop mounting bracket against the carriage stub as shown in Figure 2-9. Press the thumb lever towards the rear of the carriage. Push the hoop bracket up to the lever stub and release the lever, snapping the lever stub into the right carriage notch.

X carriage

Thumb lever

Hoop mounting bracket
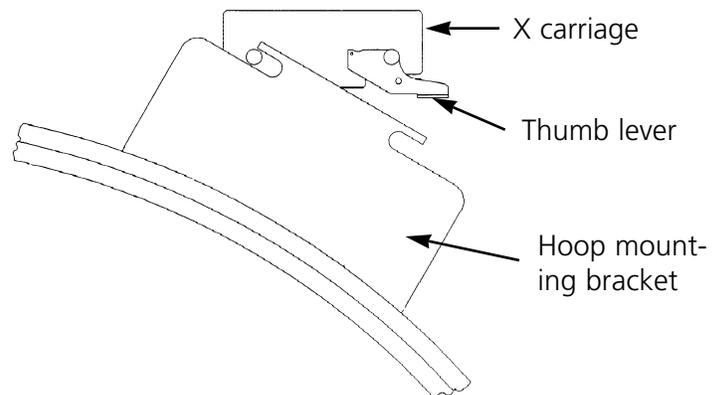
Figure 2-9

Select a Design

To select a design after it has been sent to the peripheral, press ⬛ until the display scrolls to DESIGN MENU. Press ⏎ and the first design is displayed. Use ▲ to scroll forward or ▼ to scroll backward through the designs in the buffer. Scroll through the menu until you reach the design you want, press ⏎ and the design is selected. The LCD displays the next menu.

Color Menu

To set the color sequence press ⬛ until the display shows COLOR MENU, then press ⏎ Press ▶ to increase the sequence number. Press and hold to scroll. Press ◀ to decrease the sequence number. Press and hold to scroll. Enter P to indicate a pause between colors. Press ▲ OR ▼ to change the needle position for the selected sequence number.

COLOR   1 : 1   (11)

Color sequence   Needle position   Total color selections
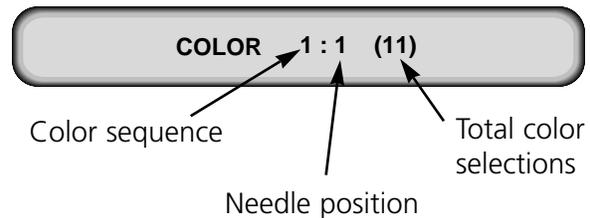
Trace the Design

Press ⬛ until the display reads: TRACE, then press ⏎ . Press ▼ to display TRACE OUTLINE, then press ⏎ . Press ⚠ to initiate the trace function and the pantograph will begin to move. The hoop will move along the outline of the design without embroidering. The machine beeps and displays an error message if a rack limit is encountered. **The beep means the needle will strike the hoop if sewn.** To correct this, re-center the hoop or use a larger hoop for embroidery.

Start Embroidering

After the tracing function is finished, press ⏎ to get directly back to the run mode again. Press ⚠ and the machine will move to the beginning of the design. Press ⚠ again and the peripheral will embroider the design selected. The embroidery will stop when the job is complete and the display reads: END OF DESIGN. To stop the embroidery process before the design is complete, press ⬛ on the keypad. To continue after a stop or thread break repair, press ⚠ again.

Embroidery Speed

While the design is being embroidered you may change the speed of the machine by pressing ⌃ ▲ OR ▼ on the peripheral keypad.

Finish Embroidering

When the design is finished the display will read END OF DESIGN.

3. Options

Cap Frames

Because a cap is not flat, it cannot be stretched tightly in a flat hoop. To solve this problem, a special device called a cap frame has been created that can hoop a cap's curved shape.

There are three parts to a cap frame:

- The cap hoop (holds the cap)
- The cap frame driver (attaches the cap hoop to the machine)
- The two mounting brackets attached to the arm of each head (holds the cap frame driver firmly in place)

Installing the Cap Frame

You MUST Set Home prior to installing the Cap Frame Driver. Set Home, then follow these steps and consult Figures 3-1 and 3-2 to attach the cap frame.

1. Remove the table top insert from the embroidery area to gain access to the cap frame mounting brackets under the bed of the head.
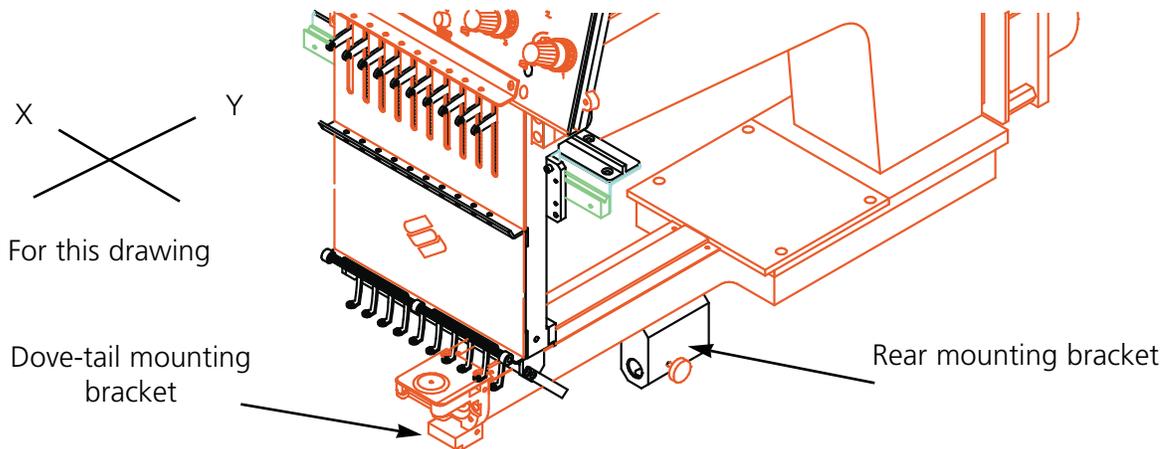
Figure 3-1

2. Center the carriage assembly in both X and Y directions using the arrow keys.

3. Under the cylinder arm, locate these cap frame mounting brackets:

- The dove-tail bracket under the needle area
- The bracket with a round hole at the rear of the head.

4. Loosen the thumb screw on the rear mounting bracket.

Side view   Front view

Shaft   Dove-tail bracket   Thumb screw
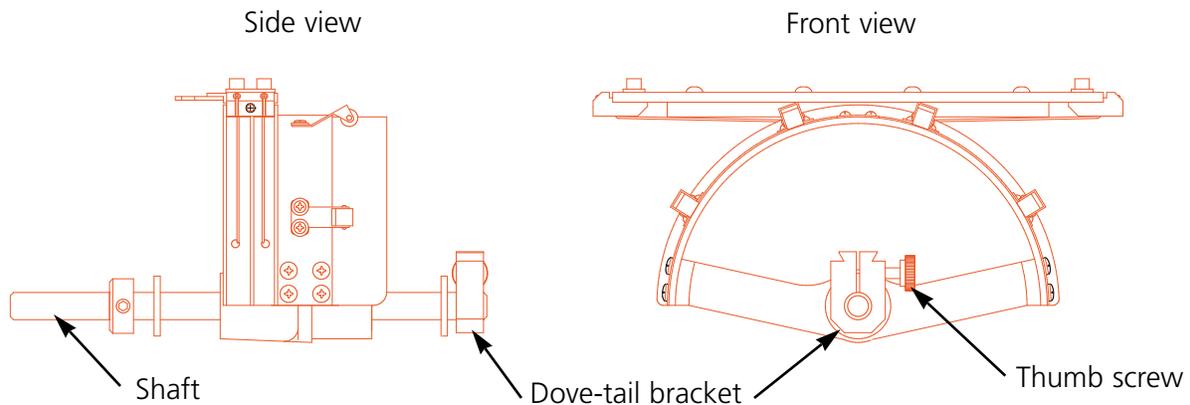
Figure 3-2

5. Loosen the thumb screw on the dove tail bracket on cap frame.

6. The cap frame driver has a hoop bracket on it. Pulling the cap frame shaft towards you, attach the hoop bracket to the carriage. It attaches like a regular hoop.

7. Guide the cap frame shaft into the hole in the rear mounting bracket. At the same time, insert the dove-tail bracket into the dove-tail mount.

8. Push the cap frame shaft into the bracket hole as far as possible.

9. Tighten the thumb screw on the rear bracket.

10. Tighten the thumb screw on the dove-tail bracket.

11. Repeat this procedure for each head on a four-head peripheral.

Using the Cap Hoop Gauge

Because the cap hoop is curved, it is difficult to control on a flat surface. The cap hoop gauge clamps to a table edge to resolve this problem. Once the gauge is clamped, snap the cap hoop into it to hoop the cap. Follow these steps:

1. Place the square spacer between the table and the clamp.

2. Tighten the clamp until the gauge is held firmly.

3. Snap the cap hoop onto the gauge. Locate the slots in the cap frame under the nylon rollers in the gauge.

4. Hoop the cap following the instructions on the next page.

Hooping a Cap

To hoop a cap, follow these steps and see Figure 3-3

1. With the latch on the left side, open the cap frame and rest the cover on the arm of the gauge.
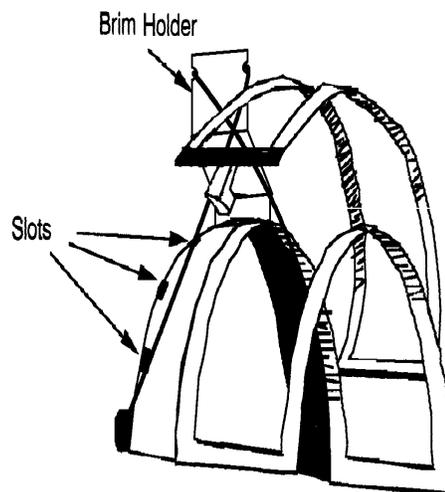
Figure 3-3

2. Remove any cardboard or packing material from the cap.

3. If the cap has a sweat band, pull it to the outside.

4. If you are using backing, place it inside the cap.

5. Slide the cap on the hoop frame so that:

    •   The brim of the cap is away from you

    •   The front of the cap is up

    •   The sweat band is under the square retainer at the center of the frame

    •   The sides of the cap are inside the outer arms of the cap frame

6. Push the cap onto the cap frame until the embroidery field is centered. Since caps come in different styles and sizes, you will have to determine how far forward the cap should be.

7. Hook the wire of the hoop latch over the catch, but do not fasten it.

8. Pull the cap as straight, fold free, and taut as possible.

9. Use your right hand to grasp the cap securely from underneath while fastening the frame latch with your left hand.

10. Pull the elastic cord of the frame over the brim of the cap to secure it.

11. Snap the hoop out of the frame gauge.

12. Install the cap frame on the cap frame driver by aligning the frame and the driver, then snapping the frame slots under the roller clamps on the driver.

13. Repeat this procedure for each head on a four-head peripheral.

Raised Needle Plates

Raised needle plates may improve embroidery quality on caps. When cap frames are attached, the curve of the frame leaves extra space between the cap and the needle plate. To eliminate the space and ensure high-quality embroidery, a qualified operator or maintenance person should install raised needle plates as described below. See Figure 3-4.

NOTE: When using a raised needle plate, use spacers to raise the presser foot.

1. Remove the two screws attaching the standard needle plate and replace the standard plate with the raised plate. Use the same screws to attach the raised needle plate.

2. Remove the lower cover on the front of the head. It is not necessary to remove any thread.

3. Using a small flat-bladed screwdriver, push the standard spacer up to the top of the presser foot driver assembly (see Figure 3-4).

4. Shim spacers come in two thicknesses: 0.020" and 0.040". Each shim spacer has five holes, which will cover half of the needles in each sewing head. The raised needle plates are 0.090" higher than a standard needle plate, so you should add two 0.040" spacers to both sides of each sewing head (needles 1-10).

Add the extra spacers **beneath** the standard shims.
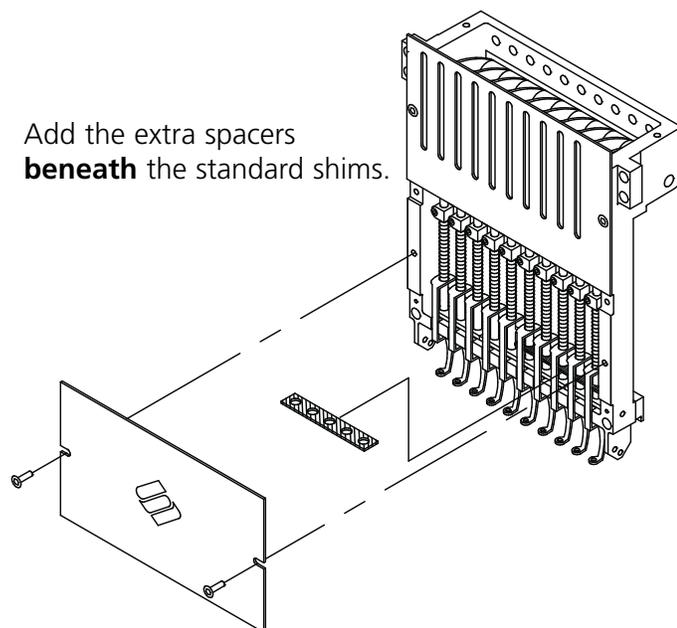
Figure 3-4

5. The spacers must be cut on one side with a pair of scissors prior to installation. Refer to Figure 3-5 for the correct areas to cut.

Cut here

6. Slide the spacer (with the cut side facing upward) in between the presser foot bars and the needle driver bars (beneath an uncut spacer, if possible). Use a small flat-bladed screwdriver to push the spacer over the needle driver bars.
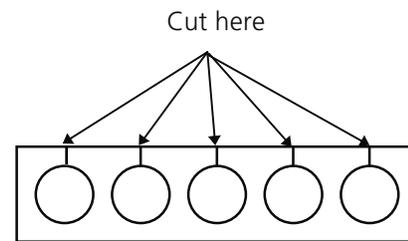
Figure 3-5

7. Press ⊟ until the display shows: HEAD TIMING MENU.

8. Press ↵ and the display shows: HEAD TIMING ON.

9. Press ⌃ ▲ . The machine rotates to the "Head up" position and the display shows: GO TO HEADUP. {machine motion}

10. Press ⌃ ▼ . The head rotates one revolution. The presser foot should be within 1/4" (0.5cm) from the needle plate.

11. Verify the presser foot is clearing the needle plate by 0.030 to 0.050". If needed, add or remove the necessary combination of the 0.020 or 0.040 spacers to achieve the appropriate clearance.

NOTE: Overcompression of the presser foot springs may damage the springs and impair the quality of the embroidery.

12. Replace the lower needle case cover.

13. Repeat for all sewing heads on the EMT 10/4.

When you return to sewing flat or tubular goods, reverse the above procedure to remove the raised needle plates and the extra spacers.

Disk Drive

The Melco EMC Disk Drive Option replaces the need for the EDS System Controller, thus converting a peripheral into a single embroidery device.

The EMC Disk Drive is a read only disk system allowing the user to embroider EXPANDED designs in the following formats: DOS 1.44MB, DOS 720K, Melco Expanded, Tajima, Barudan FMC, Barudan FDR, and ZSK. This option does NOT support condensed format designs.

The disk drive attaches to the peripheral as shown in Figure 3-6.

Single head disk drive option

Four head disk drive option
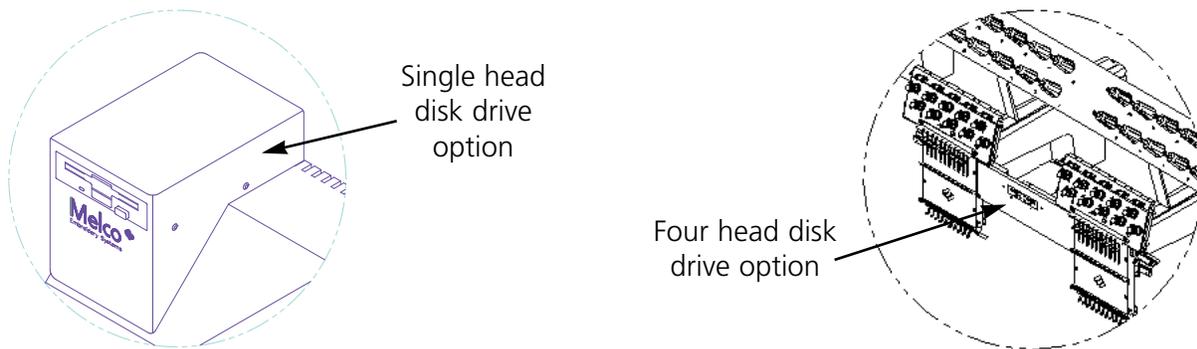
Figure 3-6

Installation

The information in this section is for installing the EMC Disk Drive Option. If your disk drive was factory installed, refer to the Operation section.

Unpacking

Use care when unpacking the EMC Disk Drive Option. Inspect the parts for damage and contact the shipper to report any damage.

Power Requirements

No additional power is needed beyond the requirements of the peripheral.

EMC 10T

1. Turn off the peripheral and disconnect the power cord from the power source.

2. Remove the existing Controller Cover.

3. Locate the new Controller Cover with the EMC Disk Drive and position it above the Controller Section.

4. Plug the data ribbon cable into its connector on the CPU PCB (see Figure 3-7). Plug the power cable into its connector next to the data cable.

Data ribbon cable   Power cable

                                                                                    CPU
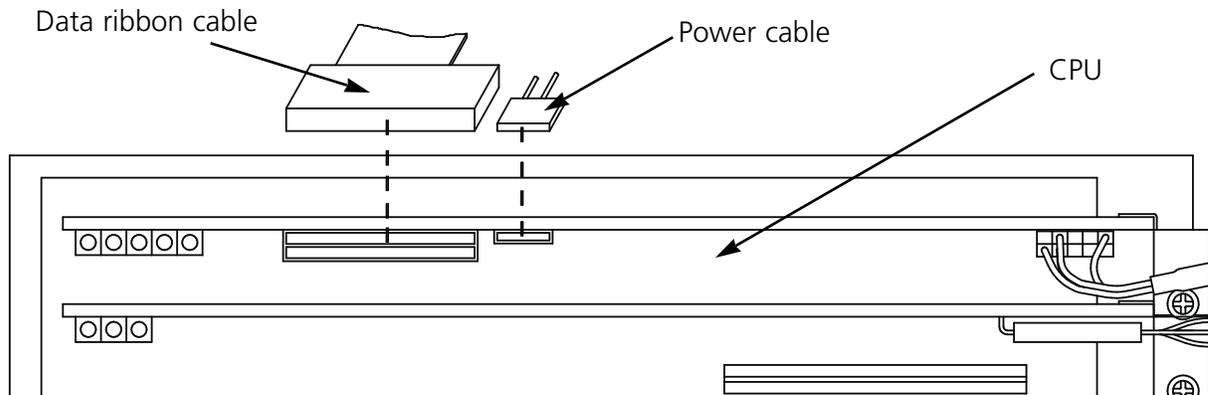
Figure 3-7

5. Install the new Controller Cover, using care not to pinch any cables. Guide the disk drive
    cables into the cover as the cover is lowered.

6. Reinstall the power cord from the peripheral to the power source.

EMC 10/4 and 10/4T

1. Turn off the peripheral and disconnect the power cord from the power source.

2. Remove the lower center spacer cover (refer to Figure 3-4).

3. Install the disk drive assembly in place of the center cover.

4. Route the data and power cables along the left side of head #3 (when viewed from the front).
    Secure using the provided wire ties.

5. Plug the data ribbon cable into the back of the peripheral as shown in Figure 3-8.

6. Reinstall the power cord from the peripheral to the power source.
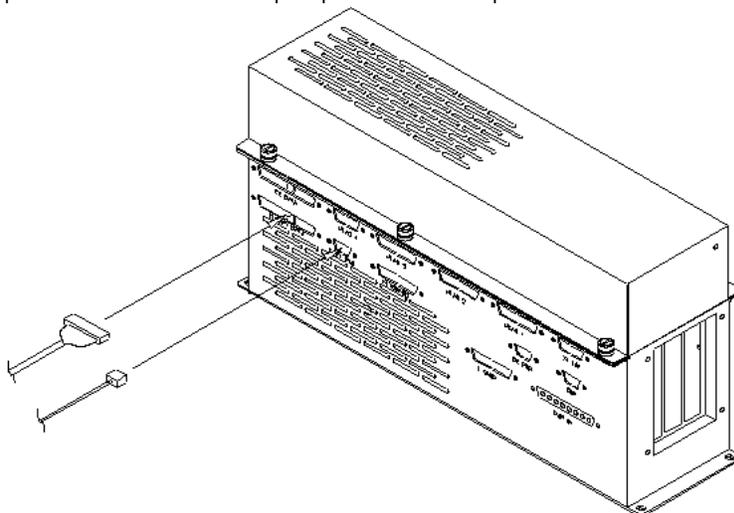
Figure 3-8

Installing .RSA Files

If the peripheral is part of an EDS System and the network will boot the peripheral, install the proper operating program (.RSA files) into the EDS System Controller. To install the .RSA files, put the "boot" disk into the EDS Controller disk drive then type:

a:install   (or b:install if the disk drive is the "B" drive)

Press [Enter]. The operating program or .RSA file for each of the embroidery peripherals that supports the disk drive option will automatically load into the EDS Controller.

Configuring The EMC Disk Drive Controlled Unit

When an EMC Disk Drive Option is installed on a peripheral no configuration changes are required.

If you are operating from an EDS network as well as using the disk drive, install the correct .RSA files as previously indicated and follow the rules of the network when assigning Unit Numbers to peripheral devices. Specifically, after setting the Peripheral Program, the Unit Number must be set differently for each peripheral attached to a single EDS System Controller.

If no network is attached to the EMC Disk Drive controlled embroidery peripheral, set the Unit Number to any number between 1 and 16.

Operation

> **CAUTION! To prevent damage to diskettes, do not place them on the peripheral.**

Booting The Peripheral

You may boot one of two ways. If the embroidery peripheral is properly configured and attached to an EDS System containing the .RSA file, the peripheral will boot from the network when the peripheral is powered up.

If the peripheral is not connected to an EDS System, or if the system is not turned on and operating in EDS, the peripheral will boot from the disk drive. A boot disk must be in the disk drive. If a boot disk is not located in the disk drive, the message: INSERT BOOT DISK will show on the display. Insert the boot disk and press and hold [Enter] for a moment.

New Menus

With the installation of the EMC Disk Drive Option, two Menus are added to the embroidery peripheral. These menus are: the FORMAT MENU and the DIRECTORY MENU. Information on these menus follows.

Loading A Design

Through The Network

After the embroidery peripheral is booted, you may load designs into the embroidery peripheral buffer. If you are loading designs through the network, please refer to the EDS System Operation Manual for a detailed explanation of sending designs from the computer to the peripheral.

Through the Disk Drive

Once the embroidery peripheral is booted, you may load designs:

DIRECTORY MENU

1. Press ⊟ . The first menu is the DIRECTORY MENU. If the design format setting at the FORMAT MENU is correct, proceed to the next step.To set the format, refer to the "Format Menu" section before proceeding.

2. Place the diskette with the design to be loaded in the disk drive, then press [Enter] on the peripheral.

    The name of the first design in the directory will show on the peripheral display.

3. To load the design showing on the display, press ⏎ to load the design. If the design name showing on the display is not the design you wish to load, press ▲ or ▼ until the desired design name is showing on the display, then press ⏎ .

    When ⏎ is pressed, the disk drive light comes on as the design is loaded into the embroidery peripheral design buffer. While the design is being loaded, the display shows the name of the design and that it is loading. When loading is complete, the display will show DESIGN MENU.

Selecting The Format

Six formats of embroidery designs can be loaded into the peripheral by the EMC Disk Drive. These formats are: DOS, MELCO, TAJIMA, BARUDAN FMC, BARUDAN FDR, and ZSK.

FORMAT MENU

If you need to change the format selection, enter the FORMAT MENU and follow these steps:

1. Press ⊟ to enter into the list of menus.

2. The first menu is the DIRECTORY MENU. To change to the FORMAT MENU, press and hold ⌃ while pressing ⊟ .

3. Press ⏎ and the currently selected format will show on the display. To change the selected format, press ▲ or ▼ until the correct format is displayed.

4. When the desired format is displayed, press ⟨↵⟩ to select the format.

5. Press ⟨↵⟩ and the display shows DIRECTORY MENU.

The Sash Frame (EMC 10/4 and 10/4T Only)

The sash frame is an aluminum rectangle that attaches across the full length of the pantograph, using the table tops for support. With the sash frame you can hoop a single piece of fabric to be embroidered by all four heads. The material is held in place by fabric clips included with the sash frame. The sash frame has a maximum embroidery field per head of 10" x 16" (25cm x 41cm).

Often, only the backing material is hooped in the sash frame, and several smaller pieces of fabric are fixed on top of the backing with a non-permanent fabric adhesive. This procedure reduces hooping time and permits a high rate of production on parts of preassembled garments like labels, patches, collars, and pockets.

The sash frame may be left attached to the peripheral for spider hoops. Spider hoops attach to the sash frame and nest inside one another to create a variety of sizes. Spider hoops are sold as a separate option.

Installing the Sash Frame

The sash frame is factory assembled with the mounting brackets left slightly loose. This allows easier alignment of the sash frame on the pantograph. The first time the sash frame is installed, tighten the bracket screws once in place. Follow these instructions and see Figure 3-9.

1. Before installing the sash frame, **make sure the table tops are in place**. Without the support of the table tops, the sash frame may be damaged.

2. Guide the sash frame under the heads with the brackets toward the pantograph.

3. Fit the sash frame bracket holes over the fixed pins on the carriage brackets and insert the retractable screw on each bracket into the corresponding hole on the pantograph.
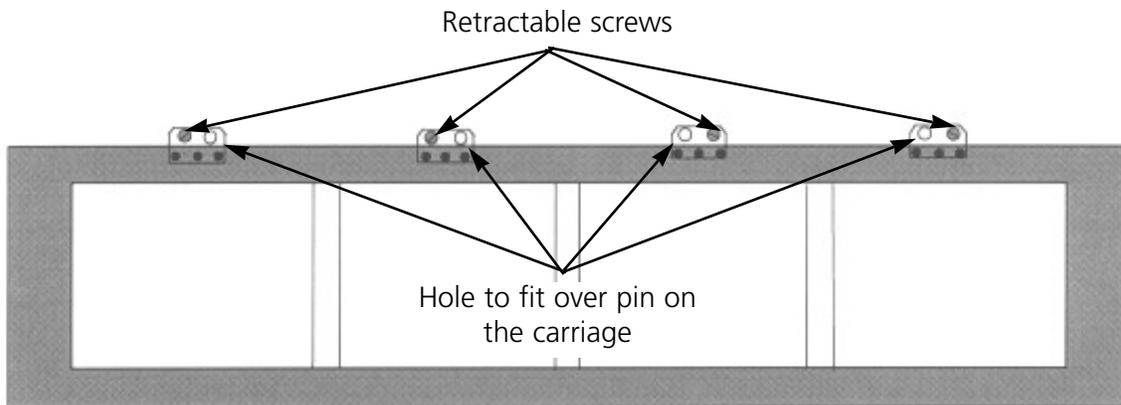
Figure 3-9

4. When all screws are in place, tighten using a flat-blade screw driver. **Do not over-tighten these screws**.

5. The first time the sash frame is installed, tighten the bracket screws (3 per bracket, 12 total) using the 2mm hex wrench that comes with the sash frame assembly.

Storing the Sash Frame

The sash frame will not operate properly if it is bent. Suspend the frame lengthwise when not in use.

Hoop Selection

Before embroidering with the sash frame, Select Hoop in the Home Menu to either the sash frame or a spider hoop (if appropriate). Failure to do so may damage the peripheral.

Hooping on the Sash Frame

The same hooping guidelines apply to the sash frame as to regular hooping.Figure 3-10 shows a hooped sash frame.
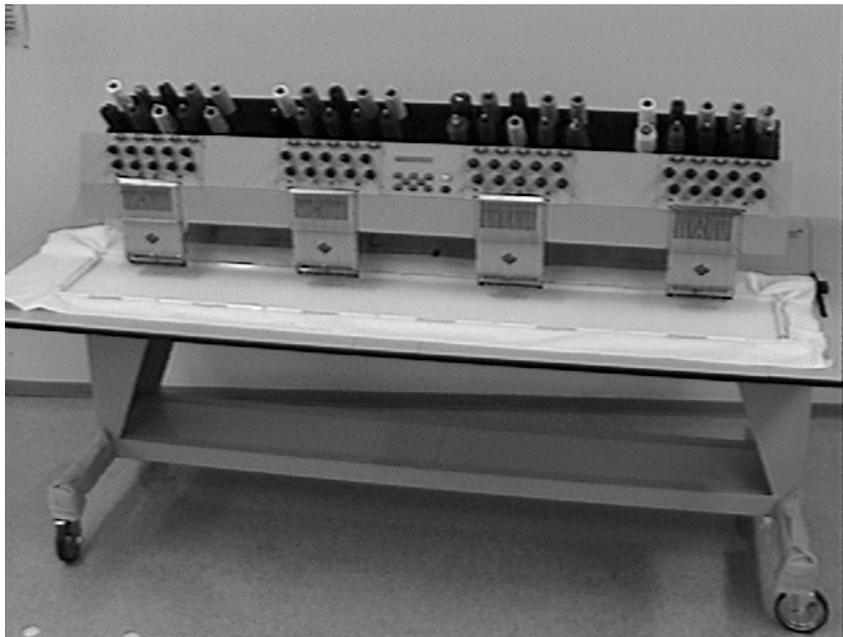
Figure 3-10

1. Lay the fabric over the sash frame as flat as possible.

2. Attach the first clip on the pantograph side of the frame near a corner. The thumb rail should be facing away from the embroidery field.

3. Attach a total of 6 clips along the pantograph side of the frame.

4. Pull the fabric taut and attach a clip at the front of the frame. Attach 6 clips along the front edge.

5. Attach one short clip to each end of the frame.

Spider Hoops

A spider is a hoop or ring that holds another hoop. Spider hoops fit on the sash frame and allow garments to be hooped individually without removing the frame. The outermost hoop has brackets that attach to the sash frame.
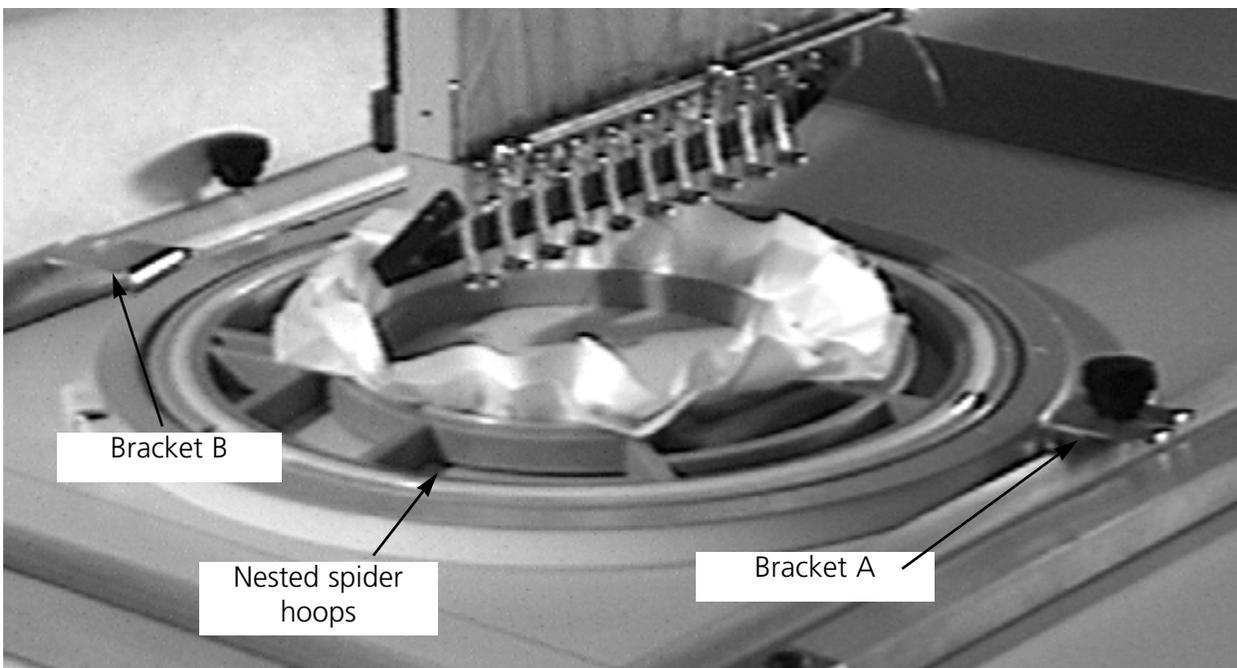
Figure 3-11

To install spider hoops:

1. Attach the thumb screws for the spider hoop into the sash frame, but do not tighten yet.

2. The 25cm hoop has two brackets. Bracket A in Figure 3-11 has a forward-facing slot, and bracket B in Figure 3-11 has a side-facing slot. Slide bracket A into place, then bracket B.

3. Tighten the thumb screws.

4. Repeat for all embroidery heads.

NOTE: After using the spider hoops and BEFORE embroidering with the full sash frame (no spider hoops attached) remove the thumb screws or the machine may be damaged.

4. The Menus

All of the peripheral menus in the EMC 10T, 10/4, and 10/4T are listed below with a brief description of their functions. Refer to the sections that follow for more information.

DIRECTORY MENU
Lists all the designs on the 3½ disk. It also allows you to select a design for embroidering from the disk (on machines equipped with the EMC Disk Drive Option only).

DESIGN MENU
Lists all the designs in the design buffer in the order they were sent. It also allows you to select a design for embroidering or to delete a design from the buffer.

ORIENTATION MENU
Allows you to orient a design in one of eight directions.

COLOR MENU
Sets the color sequence for your design.

RUN DESIGN
Loads the selected design and color sequence into the run buffer; used to start embroidering.

FRAME MENU
Sets the direction (forward or backward) the Frame key frames.

TRACE MENU
Traces the outline of a design so you can verify that the design fits into the selected hoop.

HOME MENU
Sets the HOME POSITION, selects hoop sizes, and provides power fail rescue functions.

MOVE MENU
Moves the design a precise distance within the embroidery field.

HEAD TIMING MENU
Enables you to set, correct, or adjust needle depth and hook timing.

TRIM MENU (EMC 10T and EMC 10/4T only)
Sets the trimmer options.

OPTIONS MENU
Sets the Under Thread Control (UTC) options.

RESET MENU
Clears stitch counts and the run buffer without turning off the machine. You do not delete a job from this menu. Also used to do a "hard reset" which restores all parameters to the default settings.

FORMAT MENU
Allows you to change what format disk you are reading (on machines equipped with the EMC Disk Drive Option only).

IDLE MENU
Displays information about the current design. It is accessed by pressing ⏎ while the machine is embroidering or by pressing ∧ ⏎ while in any menu or submenu.

Setup Menus

These are the menus used for every design. The other menus are covered in the Customizing Menus section. The Head Timing menu is covered in the maintenance chapters.

Design Menu

When you send a design to the peripheral, it is stored in the design buffer. The Design menu displays the buffer contents, and allows you to select a design to embroider or delete.

Selecting a Design

To select a design after it has been sent to the embroidery peripheral, follow these steps:

1. Press   (button)   until the display reads DESIGN MENU.

2. Press   (button)   to display the first design.

3. Use   (button)   or   (button)   to scroll through the designs in the buffer.

4. Scroll until you reach the design you want.

5. Press   (button)   to select the design.

Deleting a Design

The peripheral can store up to sixteen different designs (depending on file size). If you are not using the AutoDelete option from EDS III, the design stays in the buffer as long as there is space available. When you want to delete a design from the buffer, follow these steps:

1. Press   (button)   until the display reads DESIGN MENU.

2. Press   (button)   .

3. Use   (button)   or   (button)   to scroll to the design you want to delete.

4. Press   (button)(button)   ; the display reads KILL <design name>?

5. Press   (button)   for YES, or   (button)   for NO.

6. Press   (button)   .

Color Menu

The embroidery peripheral can embroider up
to 10 colors in a single design without switch-
ing thread cones and rethreading needles.
The Color menu is used to set the thread
positions in the color sequence.

COLOR   1 : 1   (11)

Color sequence   Total color
                                                    selections

Needle position
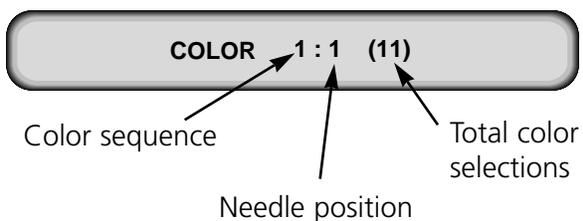
1. Press   ⊟   until the display reads COLOR MENU.

2. Press   ↵   to display the color sequence.

3. Press   ▶   to advance to the desired sequence number.

4. Press   ◀   to return to a desired sequence number.

5. Press   ▲   or   ▼   to change the thread number

The thread position refers to the thread cone number on the thread tree and the associated nee-
dle number in the needle case. Acceptable numbers in this position are 1 through 10, or the spe-
cial characters listed below:

  – Embroiders using the previous color selection.

  0 Stops the machine at this color change but does not move the needle case to the next
     needle. Press   ⚠   to resume embroidering.

  P Pauses the machine at each subsequent color change after moving to the next needle.
     Press   ⚠   each time to resume embroidering.

7. Press   ⋀ ▼   to insert a color selection. and   ⋀ ▼   to delete a sequence num-
    ber.

Note: Acceptable numbers in total color changes are 1 through 99, with a default of 10. You
        should delete all color changes not used in the current design (i.e., if you have 5 colors in
        the design, you should delete color changes 6-10).

The color sequence is retained when the machine is turned off and back on. However, a hard
reset or reconfiguration resets all Color menu values to the default settings.

To add more than 10 color changes, scroll past color change number 10, and use the arrow keys
to insert the appropriate thread number.

The machine will wrap after it has reached the total number of color changes for that design (i.e.,
if there are 5 color changes in a design and 3 are programmed in the peripheral, at color change
number 4, the machine will wrap back to the first thread number).

Change Now

This option allows you to change the color sequence of either the job that is currently embroidering or the next job in the run buffer. Follow these steps to use the Change Now function:

1. Scroll to the COLOR MENU; you can do this while the machine is embroidering.

2. Press   (↵)   to display the current color sequence.

3. Reset the color sequence using the normal Color menu commands.

4. When you finish resetting the color sequence, press (∧) (▶) . The display shows the message CHANGE NOW?

5. Press   (▲)   for YES, or   (▼)   for NO.

6. Press   (↵)   . If you responded YES, the new color sequence takes effect at the next color change in the design. If you responded NO, the new color sequence takes effect in the next design in the run buffer.

Orientation Menu

The Orientation Menu gives you the ability to embroider a design in any of the positions shown in Figure 4-2. Set the orientation as follows:

Figure 4-1

1. Press   (▤)   until the display reads ORIENTATION MENU.

2. Press   (↵)   ; the display shows the current orientation.

3. Press   (▲)   or   (▼)   to scan through the eight orientation choices.

4. When you reach the desired orientation, press   (↵)   .

Run Design Menu

Scroll through the top level menus, or press   (↵)   from the ORIENTATION Menu to reach the RUN DESIGN Menu. Press   (↵)   to queue the selected job.

Embroidering the selected design

Press   ⚠   and the machine will move to the beginning of the design. Press   ⚠   again and the peripheral will embroider the design selected. The embroidery will stop when the job is complete and the display reads: END OF DESIGN. To stop the embroidery process before the design is complete, press   ⊖   on the keypad. To continue after a stop or thread break repair, press   ⚠   again.

Idle Menu

The function of the Idle menus is to display information about the currently selected design. It is selected differently than the other menus.

Press ⏎ when the design is embroidering, or press ⌃ ⏎ when you are in any other menu or sub menu to activate the idle menu.

There are two screens available in the Idle menu (see Figure 4-1). Press ⏎ to toggle between the two.

| SPEED | ORIENTATION | NEEDLE # |

| CURRENT STITCH | MAX SPEED | NEEDLE # |

Figure 4-1

The Customizing Menus

You may not need to use the menus in this section each time you embroider a design. Reference this section as needed.

Frame Menu

Framing provides a stitch-by-stitch movement through a design. It allows you to accurately position the needle location in the design for correcting embroidery errors. After you have framed to the exact stitch you want, you can begin embroidering again from that point. As you frame past any color change, the machine will move to the correct needle. The Frame menu is used to set the type and direction of framing.

Note: The Frame menu is not used to start or stop framing. The ◁ key is used to start framing; the ⊘ key is used to stop.

There are 7 different framing functions:

- Frame Forward 1 stitch at a time
- Frame Forward 20 stitches at a time
- Frame to Next CC (color change)
- Frame Back 1 stitch at a time (default)
- Frame Back 20 stitches at a time
- Frame to Last CC (this frames back to the start of the current color)
- Return to Origin

To select the desired framing function, refer to the following steps:

1. Press   (⊞)   until the display reads FRAME MENU.

2. Press   (↵)   ; the display shows the current framing function.

3. To frame backward in the design press   (◀)   once to select BACK as the framing direction, then press   (▲)   or   (▼)   to select the framing function.

4. To frame forward in the design press   (▶)   once to select FORWARD as the framing direction, then press   (▲)   or   (▼)   to select the framing function.

The selected framing function will be active until you finish the current design or until another type of framing is selected. Each time a new design is loaded the Frame menu defaults to FRAME BACK 1.

Framing Guidelines

Some general rules for framing include:

The machine must be stopped within a design.

If the beginning of the design is reached during framing, the beam will move to the first stitch of the design and framing will automatically stop; pressing   [⚠]   restarts embroidery.

If the end of the design is reached during framing, the beam will move to the last stitch of the design and framing stops; you can still frame back within the design. Press   [⚠]   to finish embroidering the design.

Frame Back 1, Frame Forward 1

With FRAME BACK 1 or FRAME FORWARD 1 selected, press   [◁]   to frame; release to stop framing.

If you press and hold   [◁]   for several seconds, the beam will move several stitches and then go into automatic framing. Press   [⊘]   to stop framing.

Frame Back 20, Frame Forward 20

The peripheral will only frame 20 stitches at a time while in automatic framing mode. To enter automatic framing mode, press and hold   [◁]   for several seconds. The beam will move several stitches (1 stitch at a time) and then go into an automatic framing mode (20 stitches at a time). Press   [⊘]   to stop framing.

Frame to Last CC, Frame to Next CC

Press and hold [⊲] for several seconds. The beam will move several stitches (1 stitch at a time) and then go into automatic framing. While in automatic framing the beam will stop moving while the peripheral calculates the last or next color change move. During calculation the display reads CALCULATING. When the CALCULATING message appears on the display, release [⊲] .

When the peripheral is finished calculating the beam will move to the appropriate color change; the peripheral will beep and display COLOR CHANGE. The COLOR CHANGE message will not be displayed if the beginning or end of the design is reached.

Return To Origin

This feature returns the beam and carriage to the starting point (ORIGIN) of the current design.

1. If the machine is embroidering, press [⊘] .

2. Press [▦] until the display reads FRAME MENU.

3. Press [↵] ; the display shows the currently selected framing function.

4. Press [▼] until the display reads RETURN TO ORIGIN.

5. Press [↵] .

6. Press [⚠] . The beam and carriage will move back through the design and stop at the origin. When the machine stops, the display reads FRAME FORWARD 1.

7. Press [∧] [↵] to return to the Idle menu.

8. Press [⚠] to embroider from the beginning.

The peripheral will not automatically return to origin unless the design is encoded to do so.

Trace Menu

The TRACE MENU allows you to make sure the design fits within the selected hoop by tracing the outline of the design. If you move to needle 1 or 10 to trace it may be easier to keep track of the pattern as it is traced. Do NOT lower the presser foot for tracing.

1. Install the hooped garment.

2. Press [▦] until the display reads TRACE MENU.

3. Press [↵] ; the display reads CENTERING OFF.

4. Press [▶] to turn the centering function ON or [◀] to turn it OFF.

Note: When centering is ON, the beam and carriage stop at the calculated center of the traced design. When centering is OFF, the needle stops at its starting point. Turning centering ON is helpful when a design is going to be repeated. This helps to align successive hoops more quickly.

5. Press ⬆ ; the display reads TRACE OUTLINE.

6. Press ↵ . The design's center is calculated. The display may read CALCULATING for a few seconds before it displays TRACE <filename>.

7. Press ⚠ . The beam and carriage assemblies move to indicate the outline of the design, then return to the center of the design.

8. If the needle position will contact the hoop, the machine beeps with a "rack limit error." Correct the the problem before embroidering the design. You may wish to try changing the hoop position using manual jog, rehooping the garment to locate the embroidery area differently in the hoop, or using a larger hoop. Keep in mind that using an excessively large hoop may produce low quality embroidery.

9. When you have made any necessary corrections, press ⚠ to retrace the design. You can do this as many times as necessary.

10. Press ↵ to return to the Idle Menu.

11. Press ⚠ to begin embroidering.

Home Menu

The HOME MENU allows you to set the home position, select hoop sizes, and recover from a power loss.

Set Home

You must SET HOME each time the machine is powered up. The Set Home process moves the beam and carriage assemblies to the center of the embroidery field and then rapidly returns to the starting position. This home position is the reference point for all machine calculations until the machine is turned off. **The hoop is NOT centered when Home is set.**

1. Press ▦ until the display reads HOME MENU.

2. Press ↵ ; the display reads SET HOME.

3. Press ↵ .

Note: If you try to Set Home while there is a design in the run queue,the display reads MACHINE RUNNING.

Go To Home

1. Press ⬛ until the display reads HOME MENU.

2. Press ↵ ; the display reads SET HOME. Press ▲ or ▼ until the display reads GO TO HOME.

3. Press ↵ . The pantograph moves to the home position.

Note: If home position is not set, the display reads HOME NOT SET.

Select Hoop

1. Press ▲ or ▼ (while in the Home Menu) until the display reads SELECT HOOP.

10. Press ↵ .

11. Press ▲ or ▼ to scroll through the hoop options.

12. When the desired size is displayed, press ↵ . The display reads HOOP LIMITS ON and the beam moves to the center of the embroidery field for that hoop size.

Hoop Limits On/Off

Press ▲ or ▼ from the Home Menu until the display reads HOOP LIMITS ON or OFF. ◄ toggles limits OFF, and ► toggles limits ON. **For normal operation, HOOP LIMITS should be ON**.

Define Hoop

This procedure is used to define customized hoop limits for any given hoop.

1. Place a scrap piece of material in the hoop you wish to define. Measure and record the X and Y lengths of a rectangular or oval hoop, or the diameter of a circular hoop. Remember, the X length refers to the distance across the hoop from left to right when the hoop is attached to the pantograph. The Y length refers to the distance from the top to bottom. When determining the X and Y lengths or diameter, measure from the **inside** of the hoop.

2. Make a mark on the scrap material to indicate the hoop center. Install the hoop on the pantograph.

3. Press ⬛ until the display reads HOME MENU.

4. Press ↵ ; the display reads SET HOME.

5. Use ▲ or ▼ until the display reads DEFINE HOOP.

6. Press ↵ . The displayed message is CUSTOM HOOP 1.

7. Use ▲ or ▼ to scroll through the list of available hoop numbers (1-8).

Note: Any hoop numbers that have already been defined will have an "*****" following the custom hoop number. If you are changing the parameters of an exiting custom hoop, go to the next section entitled Redefining An Existing Custom Hoop, otherwise continue with step 8 in this section.

8.   When the desired undefined custom hoop number is reached press ⏎ . The displayed message is RECTANGLE.

9.   Use ▲ or ▼ to scroll through the list of available hoop types.

10. When the desired hoop type is reached, press ⏎ . The initial X dimension is displayed: X LENGTH 01.00IN.

Note: The minimum dimension for a hoop is 1.00 inch or 3.00 centimeters. The X dimension is the only dimension required when defining a circular hoop.

11. Press ▲ to increase the value by **0.01in** or **0.01cm**. Press ▼ to decrease the value.

Note: If ▲ or ▼ is held down, the dimension value increases or decreases. The longer the key is held down the faster the value changes. Press ⋀ ▼ at any time to return to the minimum value.

12. Once the desired value for the X LENGTH is reached press ⏎ . The display shows Y LENGTH 01.00IN.

Note: If the hoop type selected is a circle Y LENGTH will not be displayed—skip to step 14.

13. Repeat step 11 to set the desired Y LENGTH.

14. Once the desired length values are reached press ⏎ . The display shows DEFINE CENTER.

15. Identify the currently selected needle then use the arrow keys to move the hoop until the needle is located above the center of the hoop (marked in step 1).

16. When the center of the hoop is established press ⏎ . The display will now show SAVE HOOP?.

17. If you are satisfied with the definition of the hoop press, ▲ to display a Y at the far right of the display. Next, press ⏎ to save this hoop to memory. The display will now show SELECT HOOP.

If you are not satisfied with the definition of the hoop press ▼ to display an N at the far right of the display. Press ⏎ and the program will return to the list of custom hoops. Repeat steps 1-16 if desired.

Redefining An Existing Custom Hoop

1. To change the parameters of an existing custom hoop, perform steps 1 through 7 of the previous section (Defining A New Hoop). After performing those seven steps, go to step 2 below.

2. When scrolling through the list of custom hoops, the hoop numbers that have already been defined will have a "*****" following the custom hoop number.

3. When the desired custom hoop number is reached press ⏎ . The displayed message will be OVERWRITE?.

4. If you would like to continue redefining this hoop press ▲ to display a "Y" at the far right of the display. Next, press ⏎ . The display will show RECTANGLE. Follow the instructions in steps 9 through 17 of the previous section (Defining A New Hoop) to redefine the selected hoop.

   If you do not wish to redefine this hoop press ▼ to display an "N" at the far right of the display. Press ⏎ and the program will return to the next custom hoop number in the list.

Custom Hoop Guidelines

Information for custom hoops is stored in a section of memory that retains its data when power is turned off. However, there are operations that will clear this memory such as reconfiguring the machine (changing unit number, for example), upgrading RSA software, etc. For these reasons, keeping a written record of the custom hoops defined on the machine is advised.

When redefining an existing hoop, if the hoop type is the same as the previous definition (rectangle, circle, etc.), the previous dimensions will be initially displayed.

Note: Due to mathematical rounding when calculating hoop dimensions, the initial dimension may be off by 0.02 inches (0.02 cm) from the previously defined dimension.

Once a custom hoop is defined it must be selected using the same procedure as the predefined hoops (see the Select Hoop section). Custom hoops will be displayed at the end of the list of predefined hoops. The "ALL SEWING FIELD" selection is the beginning of the list of hoops, pressing ▲ from the "ALL SEWING FIELD" selection displays the last custom hoop. The following are two examples of how custom hoops will look in the list of available hoops:

- Example 1: Custom Hoop 2 is defined as an oval hoop 6.5 inches in the Y direction and 9 inches in the X direction. When selected, the display will read (2) OVAL 6x9 IN.

- Example 2: Custom Hoop 7 is defined as a circle hoop 8.5 inches in diameter. When selected the display will read (7) CIRC 8.5 IN.

Only custom hoops that have been defined as a CAP will be in the hoop list if a cap driver is installed. Otherwise, all custom hoops are displayed.

It is highly recommended that the operator trace a design on a custom hoop before embroidering (see the Trace Menu section of this manual).

It is possible to define a hoop with the defined limits outside the machine's mechanical embroidery limits. If the design being embroidered approaches the custom defined limits, one of these two errors will occur: LIMIT ON X RACK or LIMIT ON Y RACK. If one of these errors occurs during the embroidery process, continued embroidery of the design is impossible.

Performing a trace function will display these errors warning the operator of the problem before embroidering. While tracing the design, verify that the defined limits are set correctly so the needle will not hit the hoop. Incorrectly setting the hoop dimension or hoop center position may cause the needle to hit the hoop before any error message is displayed.

Power Fail Rescue

Power Fail Rescue allows you to resume embroidering a design after the machine has a power loss. A power loss might happen if you encounter an error that requires turning the power switch OFF and then back ON for recovery, or if you have a simple power failure. Refer to the Power Fail Rescue section of Chapter 5 (Maintenance) for more information.

Move Menu

The MOVE MENU allows you to move the pantograph to an exact position. The center of the embroidery field is at location 00.00. X refers to movement left or right; Y refers to movement up or down. Refer to the following:

X Positive = Right of center

X Negative = Left of center

Y Positive = Above center

Y Negative = Below center

To use the Move menu, follow these instructions:

1. Press   until the display reads MOVE MENU.

2. Press   ; the display reads MOVE X +00.00 IN.

Note: The value displayed after the prompt is either the last number entered or the default value of +00.00.

3. Press   to increase the value by 0.01 inches. Press   to decrease the value by 0.01 inches. If you press and hold either of the keys, the values continue to increase or decrease. The longer the keys are held down, the faster the value changes.

    Press   to make the value positive. Press   to make the value negative.

4. When you have the X value you want, press   . The display reads MOVE Y +00.00 IN.

5. Set the Y value using the same directions given for X.

6. Press ⏎ .

7. Press ⚠ to move the pantograph to its new location.

Note: Pressing 〈∧〉 〈▼〉 resets the X or Y value to +00.00 IN.

Trim Menu (EMC 10T and EMC 10/4T only)

When designs are created, trim and color change commands are included as part of the design file. When the trim function is enabled, the embroidery peripheral will trim when it encounters:

- A color change command
- A trim command
- The end of a design
- The number of consecutive jump stitches set in the Jump Count option
- A Trim Immediate selection, if the machine is not embroidering
- A Change Thread or Change Now command

The TRIM Menu can only be used when the machine is idle. If you try to enter the TRIM Menu while the machine is embroidering, you will receive the error message, MACHINE RUNNING. The TRIM Menu options are discussed below.

Trim Enabled/Disabled

1. Press ▣ until the display reads TRIM MENU.

2. Press ⏎ .

3. Press 〈▼〉 until the display reads TRIM ENABLED or TRIM DISABLED.

4. Press 〈◀〉 to ENABLE or press 〈▶〉 to DISABLE the trimmers.

Trim Immediate

This option can be used to make a one-time, immediate thread trim. This is especially useful when removing a hoop after pressing ⊘ . It can also be used to test whether a "Trimmer Not Home" error has been corrected.

1. Press ▣ until the display reads TRIM MENU.

2. Press ⏎ .

3. Press 〈▼〉 until the display reads TRIM IMMEDIATE.

4. Press ⏎ to activate the trimmer. Trim Immediate can only be activated if the heads are STOPPED.

Jump Count

This option allows you to decide how many consecutive Jump Stitches are needed to force an automatic trim. When that number of consecutive jump stitches are encountered in a design, the machine trims before making the jump stitches, eliminating a trail of thread across the jump path.

1. Press   🔲   until the display reads TRIM MENU.

2. Press   ↵   .

3. Press   ▼   until the display reads JUMP COUNT.

4. Each press of   ▶   increases the count by 1; each press of   ◀   decreases the count by 1.

5. Press   ↵   when you reach the desired number.

The default jump count is 8. Acceptable values are 0 through 15; 0 disables the function.

Options Menu

TheOPTION MENU allows you to manage the Under Thread Control (UTC). The UTC recognizes the absence of the bobbin thread. When the peripheral embroiders a certain number of stitches with no bobbin thread, the UTC causes the machine to stop, back up that number of stitches, and display the error message, CHECK BOBBIN.

When the bobbin thread is replaced, press   ⚠   to resume embroidering. For instructions on installing and testing the UTC sensor, refer to the "UTC Adjustments" section in Chapter 5 (Maintenance).

Bobbin Ctrl On/Off

This option allows you to turn the UTC sensor ON and OFF.

1. Press   🔲   until the display reads: BOBBIN MENU

2. Press   ↵   .

3. Press   ▲   until thedisplay reads: BOBBIN CTRL ON.

4. Press   ▶   to turn the sensor OFF; press   ◀   to turn the sensor ON.

5. Press   ↵   to leave this option.

The sensor will stay off until you reconfigure or perform a hard reset.

Bobbin Count

This option allows you to select the number of stitches the machine can embroider without bobbin thread before the UTC stops the machine. The default and recommended setting is 5.

1. Press ⊟ until the display reads: BOBBIN MENU

2. Press ⏎ .

3. Press ▲ until thedisplay reads: BOB. COUNT: XX (XX represents the number of stitches).

Bobbin Ctrl Test

This option allows you to see if the UTC is operational.

1. Remove the needle plate.

2. Press ⊟ until the display reads: BOBBIN MENU

3. Press ⏎ .

4. Press ▲ until the display reads: BOBBIN CTRL TEST.

5. Gently move the UTC sensor arm shown in Figure 4-3. If the sensor is functional, it will beep. This is not a test for UTC adjustment.

6. Replace the needle plate.

— UTC arm
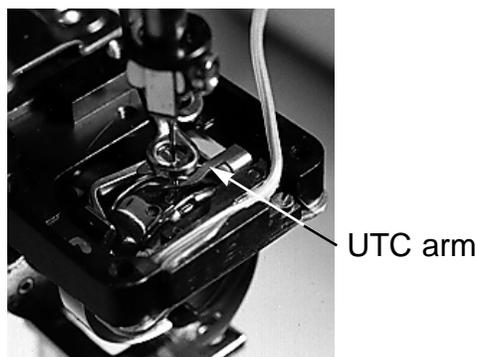
Figure 4-3

Language Select

Booting From the Computer
Follow these steps to select the machine language:

1. Press ⌃ ⊟ 2 times; Option Menu displays.

2. Press ⏎ .

3. Press ▲ 2 times to Language Select, then press ⏎ .

4. Press ▲ or ▼ to desired language, then press ⏎ .

Booting From the DIsk Drive
Follow these steps to select the machine language:

1. Press   (∧) (▣)   3 times; Option Menu displays.

2. Press (↵) .

3. Press   (▲)   2 times to Language Select, then press (↵) .

4. Press   (▲)   or   (▼)   to desired language, then press   (↵)   .

Note: Return the language setting to English before changing to another language.

Configuring the peripheral

You can reconfigure the machine to clear a variety of booting and operational errors, but all user-defined parameters will be cleared. Melco suggests reconfiguring your peripheral only if other troubleshooting methods have not solved your problem. All settings will be reset to their default values, including custom hoop sizes.

To reconfigure the peripheral, follow these steps:

1.   Turn ON the power.

2. Move to the keyboard. Ignore any message flashing on the LCD.

3. Press and hold   (∧) (▲) (▼)   at the same time.

4. Continue to hold the keys until the machine beeps, then release.

5. The LCD should display the model name; press   (▲)   or   (▼)   to scroll to the correct model name for your machine.

6. Press   (◄▮►)   and the peripheral program is set.

7. Press   (▲)   or   (▼)   until you reach the unit number you want.

8. Press   (◄▮►)   to set the unit number.

5. Maintenance

This chapter outlines machine maintenance; in addition, operators and maintenance personnel must attend a Melco approved training course prior to maintaining the machine.

Installing a Needle

Each needle has a needle clamp set screw holding it in place as shown in Figure 5-1. Use the small flat-blade screw driver from the tool kit and follow these steps to replace a needle:

1 Turn the set screw counterclockwise until the needle can slide down and out of the needle bar.

2. With the scarf of the new needle toward the rear of the head, slide the needle into the needle bar as far as it will go, and re-tighten the set screw.
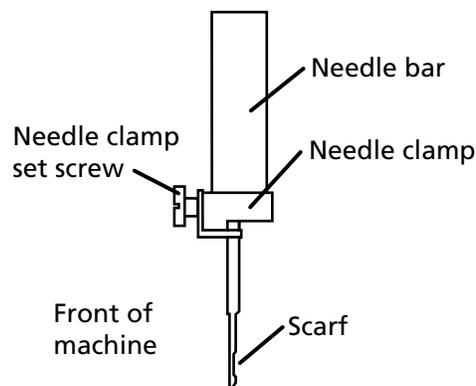

Figure 4-1

Power Fail Rescue

Power Fail Rescue allows you to resume embroidering a design after the machine has a power loss. A power loss might occur if an error requires turning the power switch OFF and then back ON for recovery or if a power failure occurs. Follow these steps to regain your position in the design and continue embroidering.

1. If large garments are installed, remove them from all heads while the power is OFF.

2. Turn the power ON. Wait for the machine to download and power up.

3. Scroll through the menus until the display reads HEAD TIMING MENU.

4. Press ⏎ . The display reads HEAD TIMING ON.

5. Press ⌃ ▲ until the display reads GO TO HEADUP.

6. Press ⏎ .

7. Scroll through the main menus until the display reads DESIGN MENU.

8. Press ⏎ . Make sure your design is in the design buffer. If it is not there, reload it from the computer (or the optional disk drive, if that is what you are using).

9. Scroll through the menus until the display reads HOME MENU.

10. Press ⏎ .

11. Press ▲ until the display reads POWER FAIL RESCUE.

12. Press [↵] . The beam and carriage assemblies will move to find home, then return to the next to last stitch embroidered before the power failure. This may take a minute or so if it is a large design.

13. Reinstall any large garments that you removed in step 1.

14. Press [⚠] . **The peripheral will resume embroidery.**

Cleaning

Exterior Surfaces

Clean outer plastic surfaces once per month with a soft, clean cloth, a mild detergent and water. Wring out the cloth before wiping the surfaces. Do not get water or any other fluids inside the machine or on any of the working mechanical surfaces.

NOTE: If an accidental spill occurs, wipe up excess fluid with a clean dry cloth and allow the machine to dry completely before turning the power on.

The Rotary Hook Area

1. Clean this area once per month with the machine power OFF.

2. Remove the 2 needle plate screws and lift it off.

3. Clean the exposed area with the brush supplied in the operator's kit.

Lubrication

Follow this lubrication schedule to prolong the life of your machine. Any tools or supplies needed are provided in the operator's kit. The following schedule is based on using the peripheral 16 hours per day, 5 days per week. Adjust lubrication times proportionally for different schedules.

Lubrication Point	Lubricant (amount)	Page number
Every 4 hours		
Rotary hook	Sewing machine oil (2 drops)	5-5
Daily		
Cap driver shaft	Sewing machine oil (2 drops)	5-10
Weekly		
Connecting rod, upper section	Sewing machine oil (2 drops)	5-7
Upper needle bar	Sewing machine oil (2 drops)	5-6
Lower needle bar	Sewing machine oil (2 drops)	5-6
Needle bar driver	Sewing machine oil (2 drops)	5-6
V-rail	Sewing machine oil (2 drops)	5-8
Connecting rod, lower section	Sewing machine oil (2 drops)	5-7
Y-rails	Sewing machine oil (2 drops)	5-9
X-carriage	Sewing machine oil (2 drops)	5-11
Trimmers (10T and 10/4T only) Weekly		
Movable frame rollers	Sewing machine oil (2 drops)	5-12
Trimmer knife arm front pin	Sewing machine oil (2 drops)	5-12
Trimmer knife drive arm	Sewing machine oil (2 drops)	5-13
Trimmer picker base shaft	Sewing machine oil (2 drops)	5-13
Every 3 months		
Color change cam	Small dab of grease	5-8

The following pages describe how to lubricate each area.

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Rotary Hook Lubrication

1. Slide out the table insert to gain access to the rotary hook area.

2. Remove the bobbin case and bobbin from the hook assembly.

3. Turn the embroidery peripheral ON.

4. Press ⌨ until the display reads HEAD TIMING MENU.

5. Press ⏎ .

6. Press ⌃ ⌄ 2 times to rotate the hook assembly into position.

7. Place one drop of oil at the location on the hook assembly shown in the diagram below.

8. Replace bobbin and bobbin case.

9. Replace table insert.

Caution!   If you use a spray lubricant, do not get any oil on the UTC assembly over the hook or the UTC may not function properly.
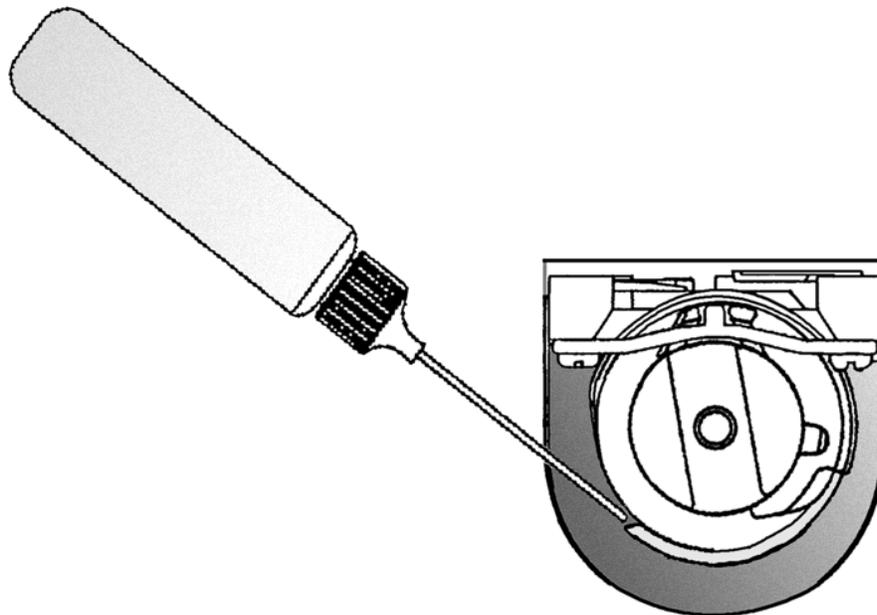
Needle Bar Lubrication

Turn the power off, remove the needle case cover, then lubricate the Needle bars as shown in Figure 5-2.

Repeat this procedure for all 10 needle bars, then replace the cover.

Oil the upper needle bar here
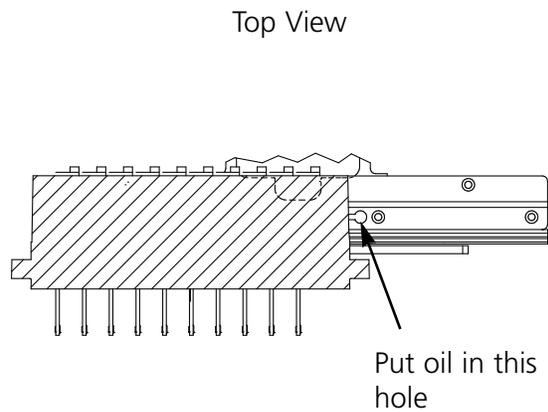
Oil the lower needle bar here
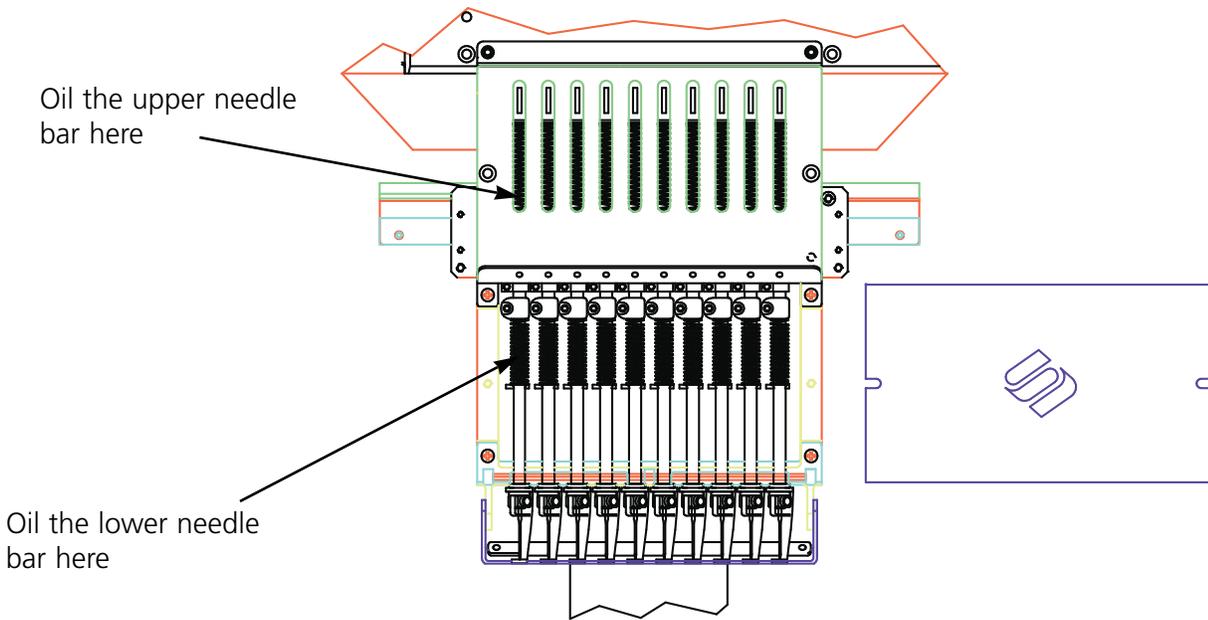
Figure 5-2

Needle Bar Driver Lubrication

Turn ON the machine and move to needle 1 or 10 to access the oil reservoir in the rail. Put 3 to 5 drops of oil in the reservoir as shown in Figures 4-3 and 4-4.

The take-up lever guide rail

Top View

Put oil in this hole
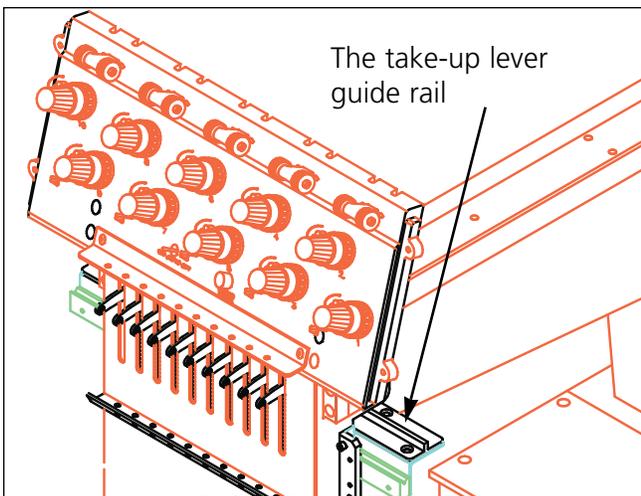
Figure 5-3   **Figure 5-4**

Upper Connecting Rod Lubrication

Follow these steps and refer to Figure 5-5 to lubricate the upper connecting rod.

1. Move to needle 1.

2. Locate the front arm cover to the right of the head, loosen both screws and swing the cover down.

3. Scroll to the Head Timing menu.

4. Press ⏎ . The LCD displays: HEAD TIMING

5. Press ⌃ ▲ . The LCD displays: GO TO HEADUP ON.

6. Press ⌃ ▼ . The LCD displays: NEE-DLE DEPTH. Now the connecting rod is visible.

Place oil here

Figure 5-5

7. Put 1 to 3 drops of sewing machine oil in the hole at the top of the connecting rod.

8. Replace the front arm cover securely; line up flush with the side of the needle case.

9. Press ⌃ ▲ to go to Head Up; press ▤ to exit the Head Timing Menu.
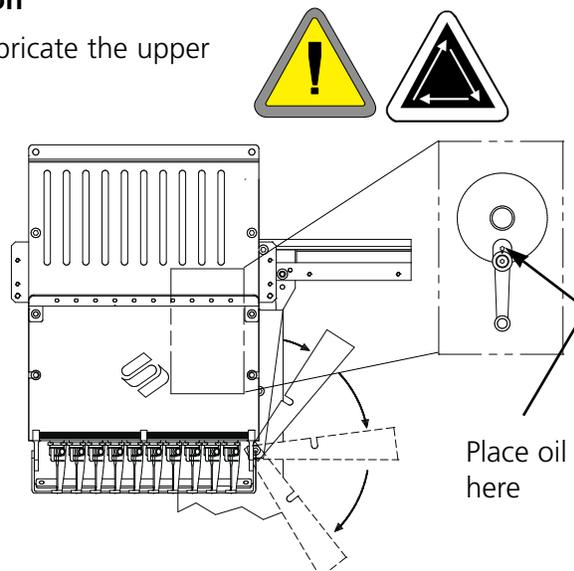
Lower Connecting Rod Lubrication

The lower connecting rod is accessed on the left side of the head. Follow these steps and refer to Figure 5-6:

1. Move to needle 10, then scroll to the Head Timing Menu.

2. Press ⏎ ; the LCD displays HEAD TIMING ON.

2. Press ⌃ ▲ .

3. Press ⌃ ▼ .

4. Press ▶ .

5. Put the oiler tube through the access hole marked with a red ring.

Place oil here

Figure 5-6

6. Put 1 to 3 drops of sewing machine oil on the lubricating point of the rod.

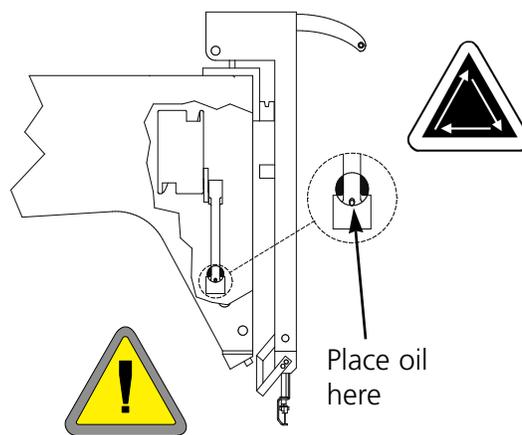7. Press ⌃ ▲ to go to Head Up; press ▤ to exit the Head Timing Menu.

V Rail Lubrication

Follow these steps to lubricate the V rail:

1. Move to needle 1.

2. Place 1 drop of sewing machine oil in the groove shown in Figure 5-7.

Do not over-lubricate!

The V-rail
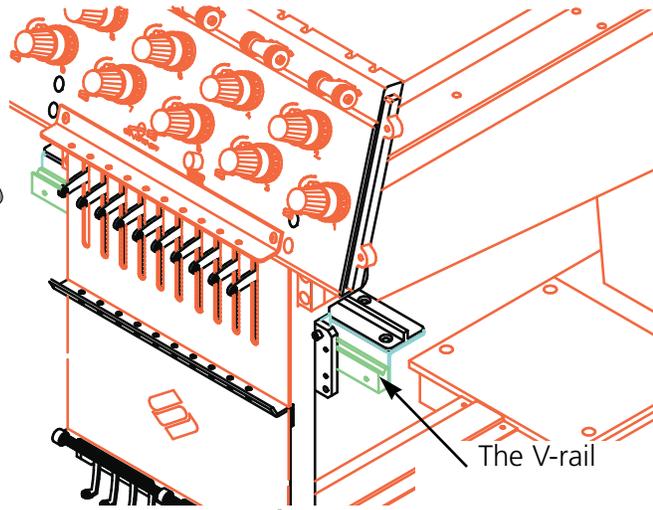
Figure 5-7

Color Change Cam Lubrication

The color change cam moves the needle case during a color change. To lubricate it, grease the pins that come in contact with it when the needle case moves. Five of these pins are accessible when the needle case is on needle 1 as shown in Figure 5-8. Follow these steps:

1 Move to needle 1.

2. Locate the pins on the back of the needle case and place a small dab of grease on the pins. **Do not over-grease this area**! Excessive grease may damage the color change PCB electronics.

3. Move the needle case from needle 1 to needle 10 four or five times using ⌃ ◄ AND ► transfer the grease to the cam.
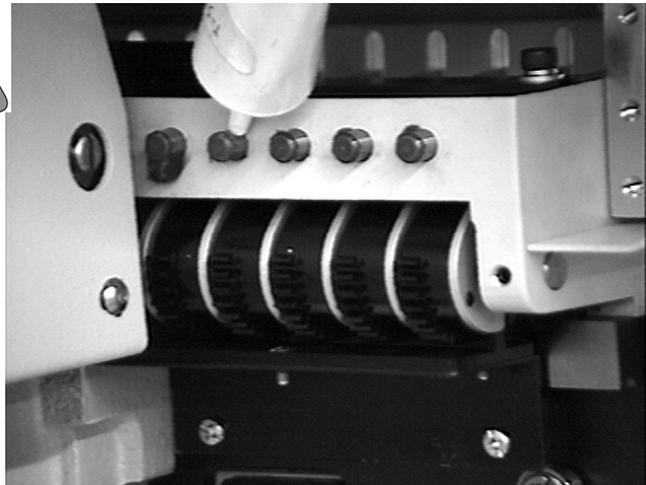
Figure 5-8

Y-rail Lubrication

The rails are under the table top, but accessible through slots as shown in Figure 5-9. Move the pantograph back and forth four or five times to distribute the oil after lubrication.

Place 1-2 drops on both the front and the back of the Y-rail through this slot. Repeat for the other rail

Figure 5-9

Cap Frame Driver Shaft

Oil as indicated in Figure 5-10.
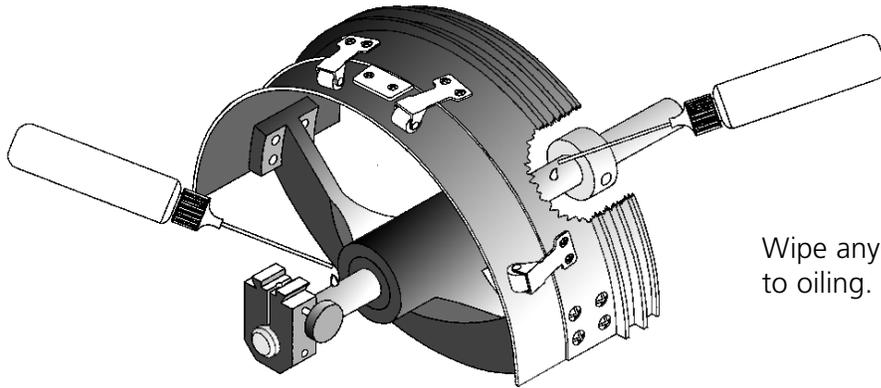
Wipe any lint off the shaft prior
to oiling.

Figure 5-10

X-Carriage (EMC 10T only)

1. Turn the power OFF.

2. Loosen the two screws holding the X-drive cover, and lift off the X-drive cover. Figure 5-11 shows the X drive with the cover already removed (and shows which screws to loosen).

3. Move the X-carriage manually all the way to the end of the beam and oil that side of the x-carriage, then move it all the way to the other end and oil that side of the x-carriage. Put 2 drops of oil in each hole (shown in Figure 5-12).
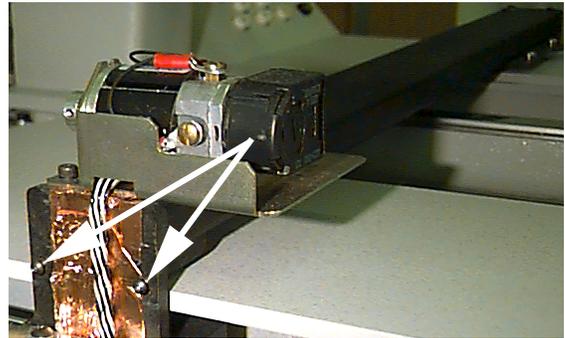
Figure 5-11
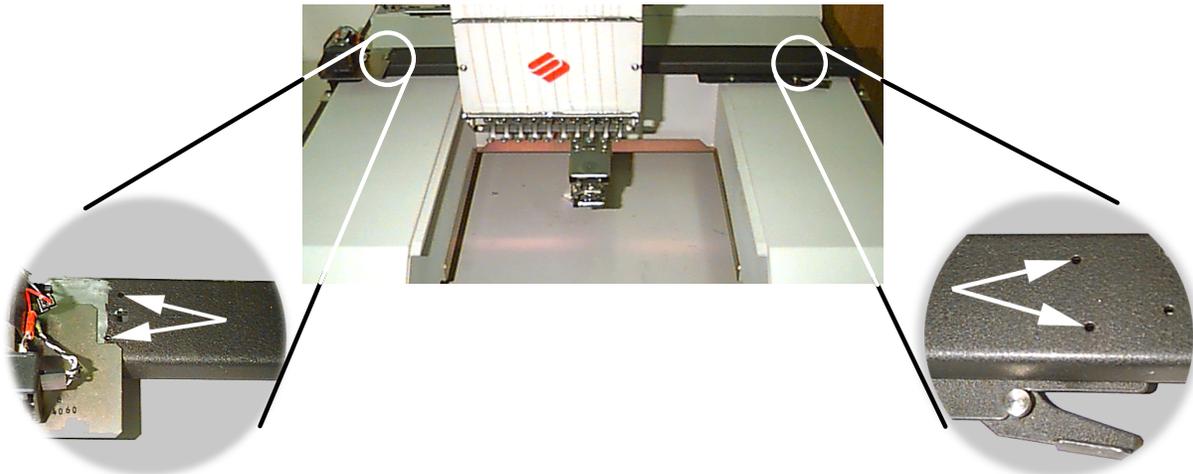
Figure 5-12

Rear of the Trimmer

1. Turn the power switch OFF

2. Remove the rear bed cover shown in Figure 5-13.

Rear bed cover

Figure 5-13

Top View with cover removed

Movable frame rollers, four places
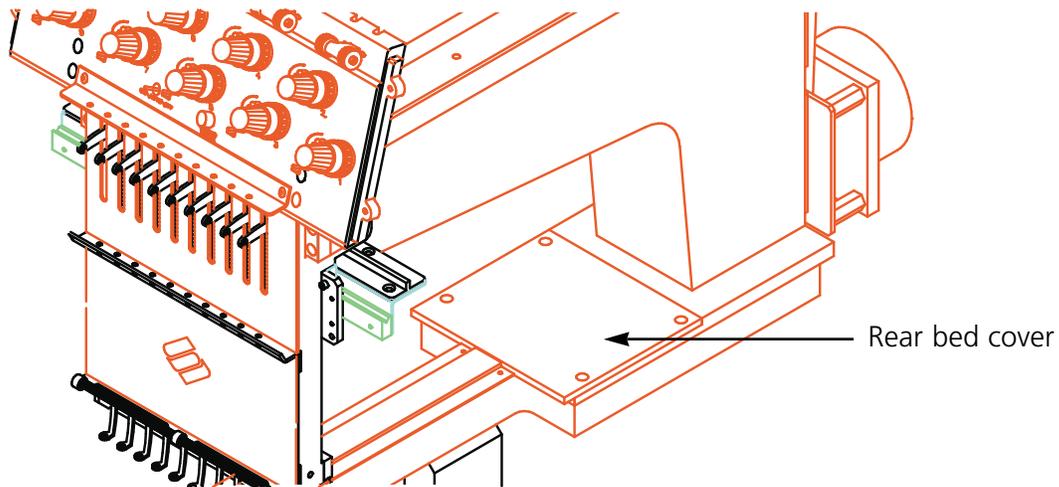
Trimmer knife arm, rear pin
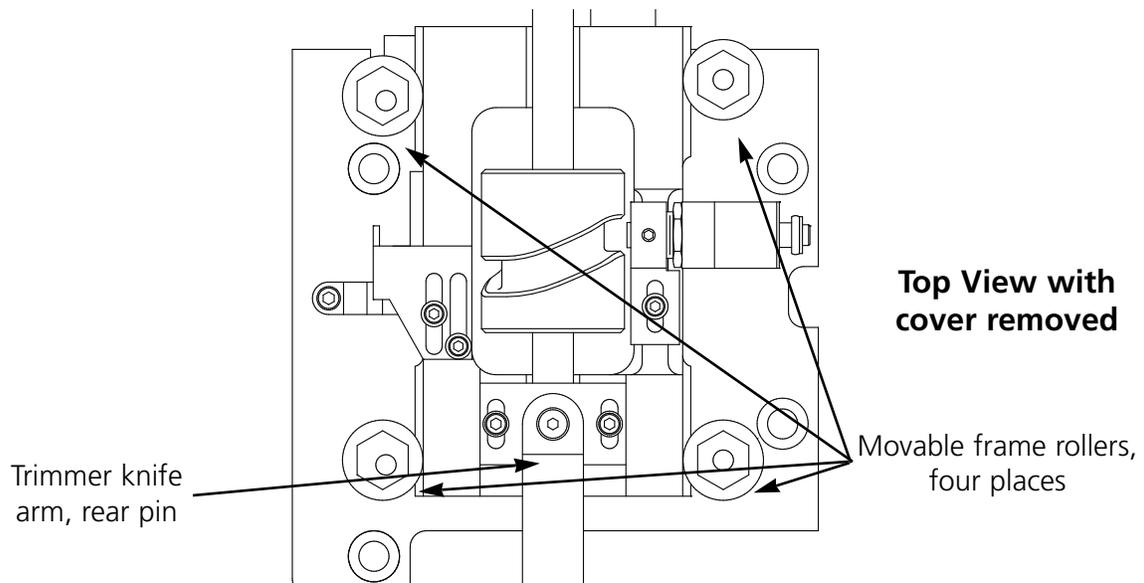
Figure 5-14

3. Place a drop of sewing machine oil at these points (shown in Figure 5-14):

    •   Movable frame rollers, four locations
    •   Trimmer knife arm, rear pin

Front of the Trimmer

With the power OFF, remove the needle plate to access the trimmer areas shown in Figures 5-15, 5-16, and 5-17. Lubricate these areas by placing one drop of sewing machine oil in each of the indicated locations every 80 operating hours.

Trimmer knife drive arm
shaft, top view

Trimmer knife arm, front pin

Trimmer knife drive arm shaft, side
view (lubricate both places)

Figure 5-15   **Figure 5-16**

Place oil at
the base of
the picker
base

Place oil in this hole
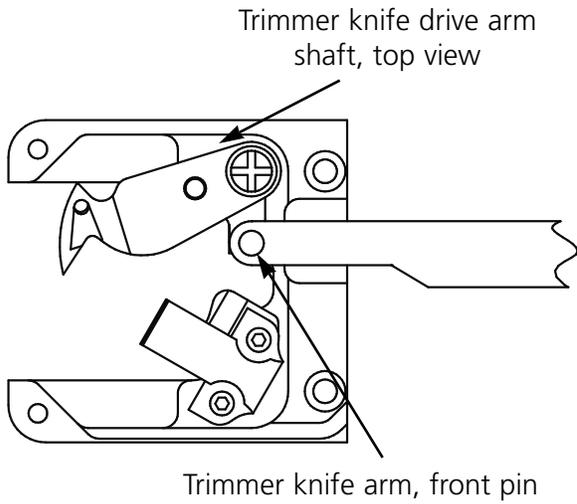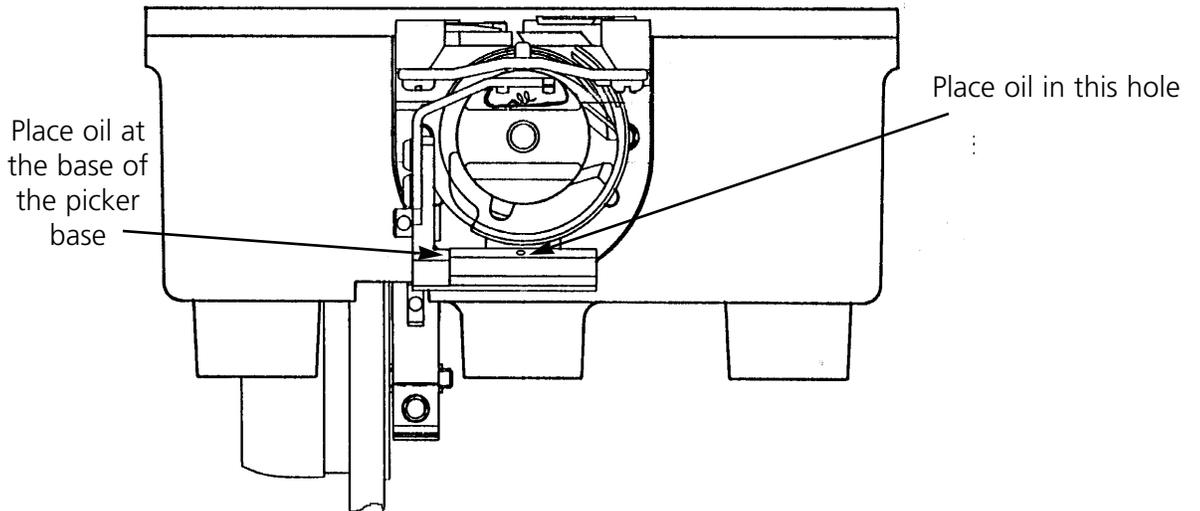
Figure 5-17

Adjustments

Needle Depth

If the hook is out of adjustment, it must be adjusted carefully for proper embroidery. Follow these steps to adjust needle depth:

1. Remove one screw and loosen the other one on the needle case cover, then slide the cover to one side.

2. Remove the table top insert from the peripheral.

3. Remove the bobbin case from the rotary hook assembly.

4. With the machine ON and ready for operation, press ⬚ at the peripheral keyboard until the LCD displays HEAD TIMING MENU.

5. Press ⬚ and the LCD displays HEAD TIMING ON.

6. Press ⬚ ⬚ keys. The head rotates to the "Head Up" position and the LCD displays GO TO HEADUP.

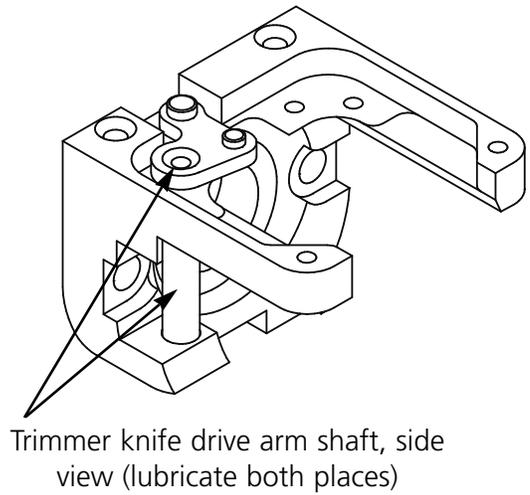7. Next press ⬚ ⬚ . The head rotates one revolution. The LCD displays ONE REVOLUTION. The needle bar should be down with the presser foot about 1/4 inch from the needle plate.

8. Press ⬚ ⬚ . The head rotates to the "needle depth" position and the LCD displays: NEEDLE DEPTH. The needle has reached its lowest point.

9. Look directly into the hook assembly and check the location of the needle's eye compared to Figure 5-18.

Needle position   Ideal needle position   Needle position
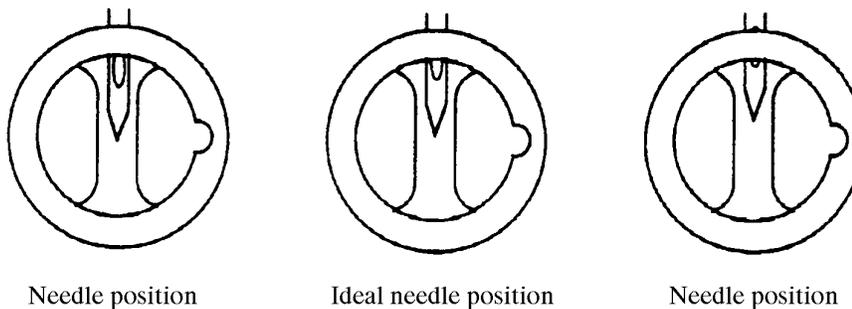
Figure 5-18

If the needle's eye is in the acceptable range, go to step 17.
If the needle's eye is not in the acceptable range, go to step 10.

10. Loosen the needle bar clamp screw shown in Figure 5-19.

11. Slide the needle bar up or down until you can see 1/2 of the needle's eye in the bobbin cavity. If you twisted the needle bar, return it to its original rotation before continuing.

Upper dead stop clamp screw

Needle bar clamp screw
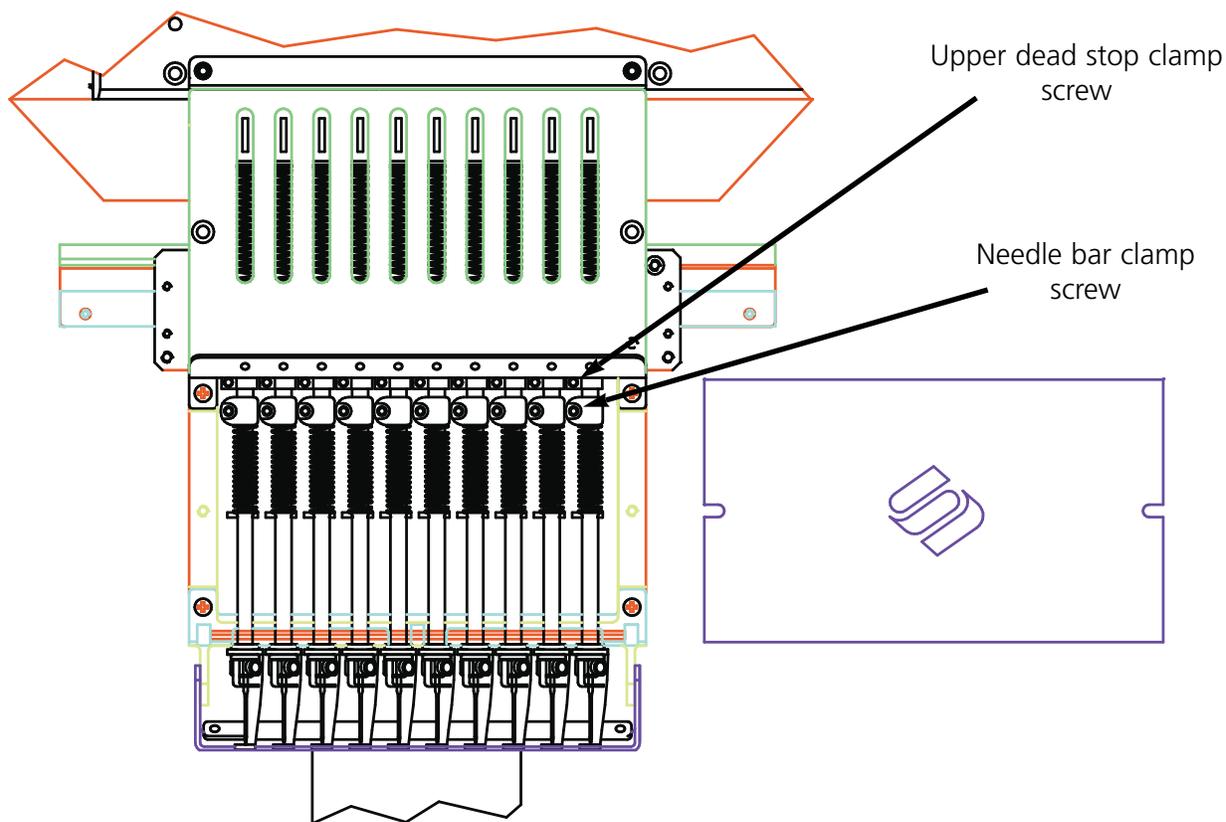
Figure 5-19

12. Re-tighten the needle bar clamp screw.

13. Press ▶ 9 times. Each time the LCD displays 10 STEPS FORWARD.

14. Loosen the screw on the upper-dead-stop clamp.

15. Press ▶ again. This finishes rotating the head to full needle up.

16. Slide the clamp against the upper stop bumper and tighten the screw on the upper-dead-stop clamp. The screw must be positioned directly forward. If it is rotated, it may rub the plastic guide plate or catch the needle bar next to it.

17. Press ⌃ ▲ . The head rotates to HEAD UP.

18. Repeat the needle depth adjustment for the remaining needles.

Under Thread Control (UTC)

The UTC, shown in Figure 5-20, signals the absence of bobbin thread. It has a mechanical arm that is contacted by the bobbin thread during every stitch. When the sensor is not contacted for several consecutive stitches (this stitch number is user-programmable), the machine stops, backs up, and beeps.

Install and adjust the UTC following these instructions:

1. With the power OFF, mount the UTC as shown in Figure 5-21. Set the UTC retaining tab in the rotary hook indentation with a 0.020 gap between them (see Figure 5-22). Use the 0.020 feeler gauge provided in the operator's kit.

2. Tighten the screws on the UTC.

3. Install the bobbin with the bobbin tension adjusted correctly.

4. Turn the power ON and test the UTC installation by embroidering the UTCTEST design in EDS III\designs at 750 spm. Make sure the UTC:

   • Detects an absence of bobbin thread. To test this, wrap a foot or so of thread around a bobbin and embroider out all the thread. If the UTC does not detect the lack of thread, move the sensor away from the needle slightly.

   • Does not give invalid CHECK BOBBIN messages. Embroider the test design for at least 4000 stitches. If invalid CHECK BOBBIN messages occur, move the sensor toward the needle.

Sensor arm

Figure 5-20

Needle plate bracket

UTC

Do not pinch this wire

Figure 5-21

Retaining tab

Rotary hook indentation
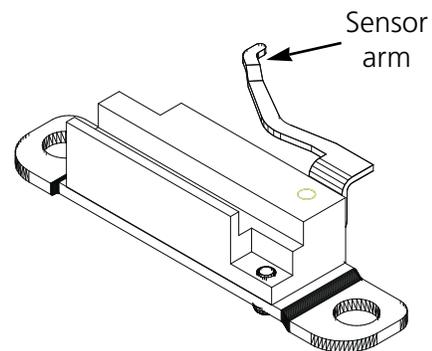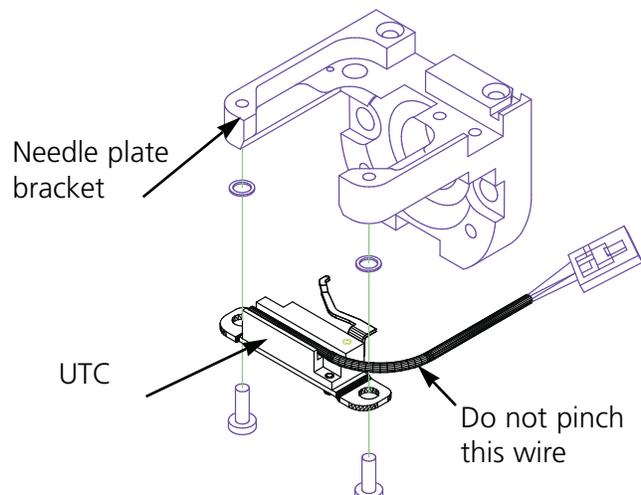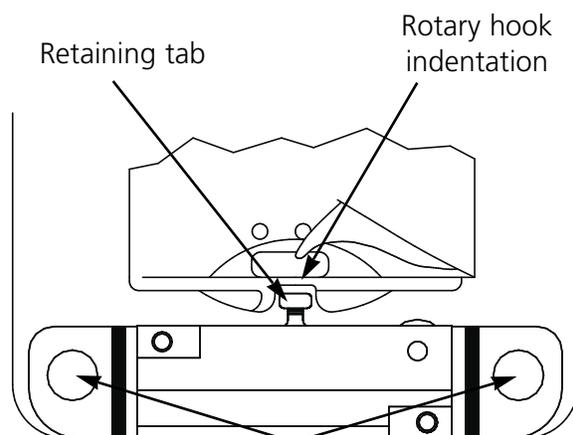
Holes for screws which mount from below

Figure 5-22

Hook TIming

The hook may be out of timing if the needle depth is incorrect, so check needle depth first (in the Head Timing section).

The hook point should be directly behind the needle and the gap between the two should be about the thickness of a thread (see Figure 5-23).

The following steps assume the rotary hook is installed in the approximate position for embroidering.

1. Remove the table top, needle plate, and bobbin case.

2. Loosen but do not remove the most accessible screw.

3. While in the Head Timing menu, press ▶ 3 to 5 times to move the second screw to the same position, and loosen it.

4. Press ⌃ ▲ to go to Head Up.

5. Press ⌃ ▼ to go to Needle Depth.

6. Press ⌃ ▶ to go to Hook Timing.

7. Grasp the needle clamp and manually pull down the needle.

8. Loosen the last screw.

9. Align the UTC retaining tab in the inner basket of the rotary hook (shown in Figure 5-24). If the inner basket moves, it may break a needle or damage the hook.

10. Position the hook point directly behind the needle. Hold the hook in this position as you proceed.

11. Slide the hook assembly forward or backward until you have a gap about the thickness of a thread between the hook point and the needle. Maintain the hook position directly behind the needle..

12. When the gap is correct, tighten all the screws. Press ▶ to move the rotary hook to make the screws more accessible. Do not allow the hook position to move when tightening the screws.

Figure 5-23

Retaining tab   Rotary hook indentation

Rotary Hook
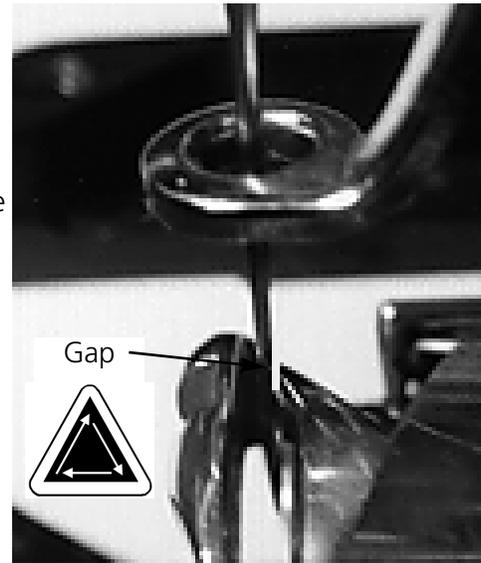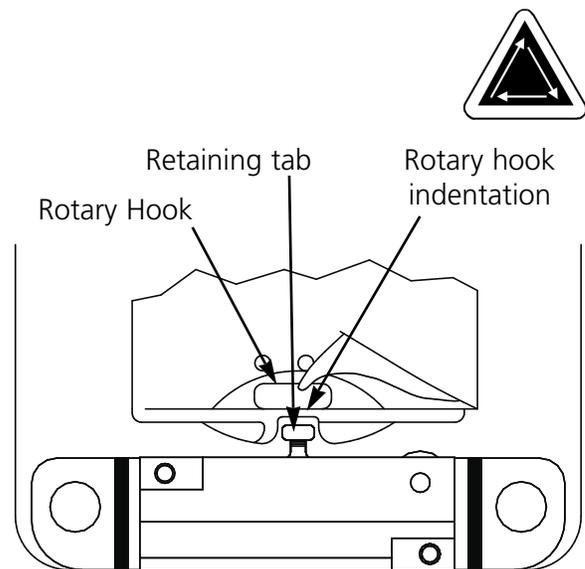
Figure 5-24

13. Press ⌃ ▲ to go to Head Up.

14. Press ⌃ ◄ to go to One Revolution.

15. Press ⌃ ▼ to go to Needle Depth.

16. Press ⌃ ► to go to Hook Timing.

17. Check all your adjustments and repeat any if necessary.

18. Replace the needle plate, making sure the needle is centered in the needle plate hole. Press [⇑] to move the needle down through the hole one step at a time. When the needle is centered, tighten the needle plate completely.

Check Spring

If you are encountering erroneous thread break messages, or loose stitches, your check spring tension may be out of adjustment. To set the check spring tension, Follow these steps:

1. Slightly loosen the set screw in the top of the tensioner mounting bracket (see Figure 5-25).

2. Rotate the thread tensioner to the position where the check spring is just touching the left side of the thread break contact (brass post).

3. Rotate the thread tensioner clockwise 3 spokes, or hang a 6 gram wieght from the check spring, and rotate the tensioner until the check spring just contacts the brass post.

4. Tighten the set screw in the top of the thread tensioner bracket.

Tensioner mounting bracket

Set screw

Figure 5-25

Recommended adjustment range

30° 50°
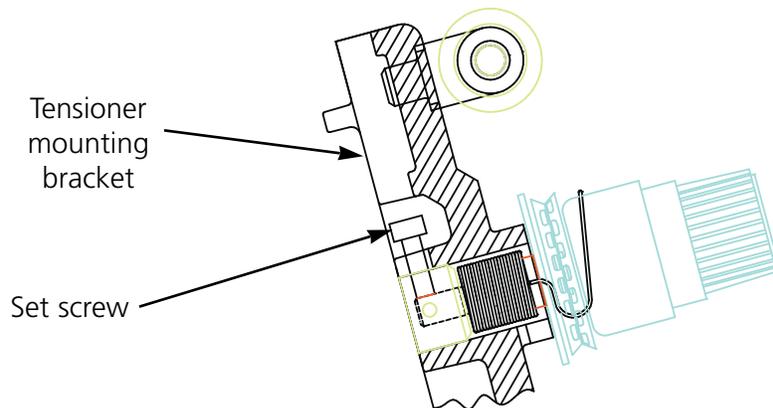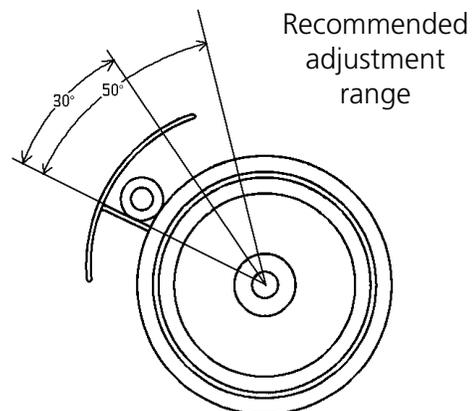
Figure 5-26

Replacement Parts

Fuses

There are two operator-replaceable fuses. If a fuse must be replaced, use this chart for appropriate fuse ratings. Do not use a fuse with any rating other than what is listed here:

PERIPHERAL	115V RATING	230V RATING
EMC 10T	4 A	2 A
EMC 10/4 and 10/4T	8 A	4 A

Tool Kit

The tool kit contains the following items and is included in the operator's kit:

6-piece metric ball hex set	Phillips offset screwdriver	Tool extension
12-piece standard ball hex set	Right angle screwdriver	1/16" ball allen wrench
Phillips #2 screwdriver	Short straight screwdriver	9/64" ball allen wrench
Straight small screwdriver	Tool handle	5/23 ball allen wrench

Operator's Kit

The following table lists the contents of the operator's kit for the EMC 10T, 10/4, and 10/4T except for the manual sets. A key follows the list.

Part number	Item	Key
007505-02	SHIM	1
007505-01	SHIM	1
006520-01	PLATE, NEEDLE, UTC	1
761003-01	Oiler	2
003772-01	NEEDLE, ARC, 80/12R, 10PK, 16 X	2
761008-01	BRUSH, LINT	2
006795-01	MONOFILAMENT	2
861689-01	LUBRICANT, GREASE T517, 2 OZ	2
008069-01	BRUSH, CONTACT, THD, BRK	2
001532-01	BAR, NDL	2
006846-01	KIT, TOOL, UNIVERSAL	2
007505-01	SHIM, NDL CS	2
110113-01	WARRANTY, STATEMENT, LIMITED, 12 M	2
003772-03	NEEDLE, ARC, 80/12FG, 10/PK, 16 X	2
005577-01	BUMPER, WASHER	2
001528-01	CLAMP, NDL, ASSY	2
001537-01	SPRING, HLDING, NDL BAR	2
007559-01	SPRING, CHECK, TNSNR, THD	2
007591-01	DAMPER, NDL CLAMP	2
009027-01	GAGE, COMBINATION, UTC	2
005917-01	DISK, RSA FILES (2 DISKETTES), ED	2
005378-01	DISK, RSA FILES, (1 DISKETTE), ED	2
110191-01	ABOUT YOUR TRAINING	2
005703-01	TUBE, GUIDE, THD, THD TREE, 9.7"	2

KEY:
1 = EMC 10/4, and 10/4T
2 = EMC 10T, 10/4, and 10/4T

Spare Parts

To help reduce down-time, Melco suggests keeping certain spare parts on hand for easy replacement and maintenance. Following is a list of the suggested parts for the EMC 10T, 10/4, and 10/4T. A key follows the list.

PART NUMBER	DESCRIPTION	KEY
009304-01	PCB, KYBD, ASSY, GREY	1
005106-01	PCB, CPU 188/DSK, ASSY	2
006838-01	PCB, 4 AXIS DRIVER ASSY	2
005617-01	KNIFE, MOVABLE	2
006514-01	PCB, CLR CHNG, ASSY	2
005600-01	KNIFE, SPRING, FIXED	2
006671-01	PRESSER, UNDER THREAD	2
007545-01	VELCRO, WIPER, PILE	2
003586-01	BLADE, GRABBER	2
006492-01	PCB, X HOME/LIMIT, ASSY	3
345068-25	CABLE, DATA, 5 COND W/DRAIN, 25 F	1
007171-01	PCB, Y HOME/LIMIT ASSY	3
006550-01	PCB, DSP188/DISK, ASSY	3
344924-01	STRAP, WRIST, STATIC	1
007353-01	SENSOR, UTC ASSY	1
006422-01	PCB, TRIMMER INTERFACE, ASSY	3
006514-01	PCB, CLR CHNG, ASSY	1
001532-01	BAR, NDL	1
007924-01	FOOT, PRESSER, ASSY	1
004267-01	CASE, BOBBIN, SM	1
009000-01	HOOK, ROTARY, SM BOBBIN	1
006520-01	PLATE, NEEDLE, UTC	3
001840-01	CLAMP, STOP NDL BAR	1
001528-01	CLAMP, NDL, ASSY	1
001828-01	SCREW, SET, NDL CLAMP	3
007505-01	SHIM, NDL CS	1
004643-01	SCREW, NDL PLATE	1
341992-06	SCREW, FIXING, ROTARY HOOK	1
008069-01	BRUSH, CONTACT, THD BRK	1

KEY:
1 = EMC 10T, 10/4, and 10/4T
2 = EMC 10T
3 = EMC 10/4 and 10/4T

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6. Troubleshooting Guide

Thread breakage

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Design	Stitches are too short and/or too dense	Check the design for short and/or dense stitches, and edit the design to remove them
Needles	Incorrect needle for thread size being used	Replace with a compatible needle
	Needle is bent, damaged, or dull	Replace needle
	Needle position is incorrect	Install the needle correctly (see needle installation)
	Needle scarf and/or needle eye is burred	Replace needle
Thread	Incorrect thread size for the needle being used	Replace with a compatible needle
	Poor quality thread	Replace with a high quality thread or spray silicone on thread cone
	S-twist (right twist) thread being used	Replace with a Z-twist (left twist) thread
	Improper threading	Thread correctly (refer to threading section)
Upper/bobbin tension	Upper/bobbin tension too tight	Loosen upper/bobbin tension
	Ratio of upper thread to bobbin thread incorrect	Adjust upper and/or bobbin tension (see tension section)
	Incorrect check spring tension/stroke	Adjust/replace check spring (see check spring adjustment section)
Fabric and hoops	Fabric is hooped loosely	Tighten fabric in the hoop (see hooping section)
	Inadequate backing allows fabric to pull into needle plate hole	Increase number of backing pieces
Rotary hook	Hook timing is incorrect	Adjust hook timing (see hook timing adjustment section)
	Rotary hook does not rotate smoothly	Clean, oil, or replace
	Gap between the UTC retaining tab and the rotary hook is too narrow	Widen the gap (see UTC adjustment section)
Bobbin	Bobbin is damaged	Replace bobbin
	Bobbin thread feeds poorly	Repair or replace bobbin
Thread path	Scratches or burrs on thread path	Remove scratches with emery cloth
Needle depth	Needle depth is incorrect	Adjust needle depth (see head timing adjustment section)

Skipped Stitches

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Needles	Needle is bent or damaged	Replace needle
	Incorrect needle for the thread size being used	Replace with a compatible needle
	Needle is installed incorrectly	Install needle correctly (see needle replacement section)
Needle depth	Needle bar lowest dead point is incorrect	Adjust needle depth (see head timing adjustment section)
Rotary hook	Hook timing is incorrect	Adjust gap (see hook timing adjustment section)
	Hook point is dull	Replace hook
Upper/bobbin tension	Bobbin thread does not feed out smoothly	Replace the bobbin and/or bobbin case
	Upper thread does not feed out smoothly	Adjust the upper tensions
Pressor foot	A weak or broken pressor foot prevents the needle from coming out of the fabric smoothly	Replace or strengthen the spring (refer to the technical manual)
Thread	Thread twist is too tight	Use the appropriate thread or consult the service department for suggestions
	Thread is too elastic to form an adequate loop	
Check spring	The check spring stroke is too high	Adjust the check spring stroke (see the check spring adjustment section)
	The check spring tension is too high	Decrease the tension

Needle breaks

POSSIBLE CAUSES	SOLUTION
Needle is bent	Replace needle
Needle installation is incorrect	Install correctly (see needle replacement section)
Needle strikes the rotary hook	Adjust hook timing (see hook timing adjustment section)
Poor needle quality	Replace needle
Dull needle tip	Replace needle
Needle is too small for the fabric	Replace with compatible needle
Needle strikes the needle plate	Adjust position of the needle case (refer to the technical manual)

Loose Stitches

POSSIBLE CAUSES	SOLUTIONS
Upper thread tension too low	Adjust the upper thread tensions (see tension section)
Bobbin tension too low	Adjust the bobbin case set screw
Uneven thread size	Replace with quality thread
Upper tension inconsistent	Clean tensioner parts
Rotary hook timing is incorrect	Adjust hook timing (see the hook timing adjustment section)
Inadequate rotary hook lubrication	Lubricate the rotary hook (see the rotary hook lubrication section)
Design density too tight	Decrease density (refer to the EDS manual for design editing)
Gap between UTC retaining tab and hook too wide	Adjust gap (see the UTC adjustments section)

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7. Hoop Sizes

The following table lists the hoop sizes available on the EMC 10T, 10/4 and 10/4T.

Non-Metric Hoop Sizes	Metric Hoop Sizes
2.5 in Circle	6.3 cm Circle
3 in Circle	7.6 cm Circle
5 in Circle	12 cm Circle
6 in Circle	15 cm Circle
8 in Circle	20 cm Circle
10 in Circle	25 cm Circle
5 x 9 in Oval	12 x 22 cm Oval
8 x 13 in Oval	20 x 33 cm Oval
11 x 16 in Oval	27 x 40 cm Oval
2.4 X 4 in Rectangle	6.1 x 10 cm Rectangle
3 x 5 in Rectangle	7.6 x 12 cm Rectangle
2.5 in Spider	6.3 cm Spider
3.1 in Spider	8 cm Spider
4.4 in Spider	11 cm Spider
5.6 in Spider	14 cm Spider
6.25 in Spider	16 cm Spider
7.75 in Spider	19.5 cm Spider
SASH FRAME 10x16 in (required for full sash frame sewing)	SASH FRAME 25x40 cm (required for full sash frame sewing)
ALL SEWING FIELD (no set limits other than the size of the sewing field)	ALL SEWING FIELD (no set limits other than the size of the sewing field)
5.6 x 2.6 in CAP FRAME SEWING	14.2 x 6.6 cm CAP FRAME SEWING
5.6 x 2.75 in OPT CAP FRAME	14.2 x 6.985 cm OPT CAP FRAME

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8. Error Messages

When the EMC 10T, 10/4, or 10/4T encounters a problem or needs to give you a status update, an Error Message is displayed on the LCD and the machine beeps.

There may be an error in procedure. For example, an error message is displayed if you press the [START] key before a design is loaded into the Run buffer. You would respond by loading a design.

It could be a mechanical a problem. For example, an error message is displayed if the Y beam reaches its limit before the design finished sewing. You might need to use a larger hoop.

You may have a sewing problem. For example, an error message is displayed when there is a thread break. You would rethread the machine and continue.

The following pages of this section contain an alphabetized list of the EMC 10T, 10/4, and 10/4T error messages. (The EMC 10T and 10/4T may display error messages that are only associated with the trimmer.) If your machine ever displays an error message that is not listed here, or if you do not know how to respond to a message that is listed here, contact your Melco service representative for assistance.

Application Run

Means that the peripheral did not download properly. The machine must be turned OFF, then turned ON again. Call your Melco service representative if this message occurs often.

Bad CC Encoder

Means the machine has a bad color change PCB or some other electrical malfunction. Call your Melco service representative for assistance in ordering a new color change PCB.

Bad Design Name

The machine could not find the design name when ⚠ was pressed. If AutoDelete is ON at the computer, the design is automatically deleted when it finishes sewing. If AutoDelete is OFF, the design was manually deleted from the Design Menu. Reload the design and continue.

Bad Keyboard Code

The machine was unable to read input from the keyboard. Turn the machine OFF and back On, then do a Power Fail Recovery. If that does not fix the problem, reconfigure the machine. When you reconfigure, all parameters will be reset to default values, and your design must be started from the beginning. If that fails, call your service representative for help.

Bad PFR PTR

When you set the Power Fail Rescue (PFR) function on the machine, a pointer called a PTR is inserted into the design program to mark where the last stitch was made. This message means an error was detected while the pointer was being saved. To correct this problem:

1. Activate Return To Origin

2. Frame through the design to the stopping point

3. Press   ⚠   .

If that doesn't work, turn the power OFF and then back ON.

Bad Z Creep Func

Means the Z axis command in the Head Timing Menu was slow in getting to the CPU. Wait a few seconds and try again.

CC Head Up Error

Means a color change command was encountered when the machine was not at HeadUp. Scroll to the Head Timing Menu, press the ⏎ key, press the ⋀ ⏶ keys, then press the ⚠ key. You may have to position the color change mechanical system manually to "index" (rotate the color change cam until the color change light goes out) before the Head Timing menu will function properly.

CC Move Timeout

See CC Timeout.

CC Timeout

Means the machine did not complete a color change within 5 seconds. This is usually caused by a mechanical bind in the color change assembly which can be corrected by locating and freeing the bind. If there is no bind, use the following instructions to check for an electrical or motor failure:

1. Go to the Idle menu.

2. Press the ⋀ ◀ keys or the ⋀ ▶ keys to move the needle case.

3. If the error message clears, press the ⚠ key and continue sewing.

If the problem is still not corrected, call your Melco service representative for help.

CC Tracking Err

This error message means the color change motor is not tracking (or moving) the needle case as commanded by the color change axis controller software. Repeated occurrences of this message may indicate a mechanical bind in the needle cases or an electrical problem. To recover from this error try to move the needle case using the ⌃ ◀ or ⌃ ▶ keys or pressing the ⚠ key if the error occurred during a color change while sewing a design.

Cap Driver In

Means you have tried to activate SET HOME, GO TO HOME, or POWER FAIL RECOVERY while the cap frame drive is installed. Remove the cap frame driver before activating these functions.

Check Rack Limit

This error message means the physical X axis rack limit or the physical Y axis rack limit was reached while sewing a design. Check Select Hoop in the Home Menu to see if you a using a hoop size that is too small for the design, or the design start point is not positioned correctly in the hoop. Select a larger hoop size, or move the start point to fit the design into the hoop and start over. If the hoop is centered correctly try to Frame Back a few stitches then resume sewing by pressing the ⚠ key. Repeated occurrences of this message (with the design positioned correctly in the hoop) may indicate an electrical problem.

Color Change

The embroidery peripheral will stop after all color changes after the character P is read in the color sequence. The embroidery peripheral will stop one time after the character 0 is encountered in the color sequence.

Color List Full

You cannot increase the color sequence to a value greater than 99.

Cutter Limit!

Means the drive circuit of the cutter trimmer solenoid has detected excess power. This is caused by a malfunction of the cutter solenoid or electronics. Turn the machine OFF, then back ON to recover. If this error occurs more than once during a design, call your representative for assistance.

Delete Failed

The machine was unable to delete the design due to the same design currently running or another design is being downloaded. Wait 20 seconds and try again. This may also be caused by the design being queued in the RUN DESIGN Menu. If this is the case, perform a "system reset," then delete the design.

Design Not Found

This message displays during a Power Fail Recovery if the machine cannot find the last design that was sewing in the design buffer. Resend the last design from the computer or disk drive option and try power fail recovery again.

Found End Of Design

An End Of Design message was encountered before the true EOD. Once an EOD is "seen" by the machine, the design is stopped. You must start over, beginning with resending the design from the computer. This message might occur after a power failure. If this message is displayed frequently, there may be a problem with the CPU, and you should call your service representative.

Grabber Not Home

Means the thread grabber is not fully retracted to its home position. The grabber may be caught, perhaps in the thread or the Velcro strip. Free the grabber and retract it manually if necessary. Press the ⚠ key and resume sewing.

Home Not Set

Trying to do a GO TO HOME function without the HOME POSITION being set. Set Home and continue.

Home Was Not Set

Home Position was not set in the center of the cap frame sewing field by the Set Home command in the Home Menu. Remember that the Home Position must be set before using any other peripheral function for the first time, even if you do not use any other Home function. Go to the Home Menu, Set Home and continue.

Illegal Sequence

In the Color Menu you must have at least one valid thread number in the Color Change Sequence. Valid numbers are 1 to 10 and zero. You cannot exit from the Color Menu without correcting the sequence.

Job Buffer Full

Means that no more information may be stored in the peripheral's job queue. This will usually be seen in the Run Menu.

Limit On X Rack

See Limit On Y Rack.

Limit On Y Rack

This error message means the physical Y axis rack limit was reached while sewing a design. Check Select Hoop in the Home Menu to see if you are using a hoop size that is too small for the design, or the design start point is not positioned correctly in the hoop. Select a larger hoop size, or move the start point to fit the design into the hoop and start over. If the hoop is centered correctly try to Frame Back a few stitches then resume sewing by pressing the ⚠ key.

Loading Try Again

Means that the design has not completed reloading during a Power Fail Recovery. Wait a few seconds and try again.

Machine Running

You have tried to activate Trace, Move, Bobbin, Trim, or Head Timing while the machine is sewing. Stop the machine and try again.

MC Buffer Full

The motor command buffer is full. You may have created more Move commands or Head Timing commands than the buffer can hold. To clear the MC buffer, turn the power OFF, then back ON. If AutoSend is ON at the computer, it will reload the Design Buffer after a few seconds. If you are running with AutoSend OFF, you must reload the designs. If cycling the power does not clear the screen message, there may be an error in the CPU. Call your Melco service representative for assistance.

Missed Headup

The Z axis controller missed a Head Up signal. The machine waits for another 150 degrees of rotation; and if the signal still hasn't been seen, stops sewing. Activate the GO TO HEADUP option in the Head Timing menu to cycle the head back to Headup, then continue sewing. If this happens frequently call your Melco service representative for help.

No Designs Found

Means you are in the Design menu and there are no designs loaded. Either no designs have been sent from the computer or they have been automatically or manually deleted. The AutoDelete option may be ON at the computer.

No Design Qued

Means you are trying to do a Power Fail Recovery but there is no design in the run buffer. Use the Design menu to select a design and try again.

Not At Headup

Means you are trying to do a Power Fail Recovery when the sewing head is not at Head Up. May also mean you are trying to jog (move the beam) in the X or Y axis without the sewing head at headup. Cycle the head to the Head Up position with the Head Timing Menu function GO TO HEADUP.

Off Color Index

Means the machine tried to do a color change, or you tried to use a Head Timing function while the color change cam was off index. Go to the Idle menu and press the ⌃ ◀ or ⌃ ▶ keys to move the color change cam on index. If this does not resolve the problem, try manually resetting the cam. If the problem still exists, call your Melco representative.

Picker Limit

This means the drive circuit of the picker trimmer solenoid has detected excess power caused by a malfunction of the picker trimmer solenoid or electronics. Turn the machine OFF, then back ON to recover. If this error occurs more than once during a design, call your Melco representative.

PR Job Error

Trying to do a Power Fail Recovery but the design was already finished.

Rack Limit???

If the X or Y motion is not within the sewing field limits when the machine is running, the peripheral will stop and give this error. If performing Frame Forward or Frame Back functions, this error message will be displayed when you reach the limits of rack movement. If not in the Frame Menu, then go to the Home Menu and check the Hoop Limits submenu. You may be using a hoop size that is too small for the design, or the design start point is not positioned correctly. Try selecting a larger hoop size, or moving the design start point so the whole design fits into the hoop, then start over.

Reload

An error was found when the computer was loading a design while running in Auto Send. Delete the design and reload it from the computer. Frequent occurrences indicate a system memory problem, or a bad link in the network. Check the terminator to be sure that it is plugged in all the way or not missing. If this does not fix the problem call your service representative for help.

Run Job Error

Means that no design was selected before pressing the ⏎ key in the Run Design Menu to begin sewing. Unless you have color changes in your design, you need only the Design Menu and Run Design Menu to sew out jobs.

Thread Break

The thread broke, and the machine stopped, then backed up 5 stitches. Make sure the thread path is clear, there is bobbin thread, and the needle is installed correctly. Rethread the needle and press the [⚠] key.

Too Fast To Trim

The Z axis speed has exceeded 150 RPM during a trim. Press the [⚠] key to recover. If this happens more than once during a design, call your Melco representative.

Trim Inactive

This means you tried to perform a Trim Immediate while the trim function is disabled. Go to the Trim menu and Enable the trim function, then proceed.

Trimmer Not Home

This message is displayed when the machine tries to sew after a trim, but finds the cutting blade is not in its home position. Try executing the Go to Headup option in the Head Timing menu to recover, then continue sewing. If this does not fix the problem, call your Melco representative.

X Axis Limit

This message means that the drive circuit of the X axis motor has detected excess power. This is caused by a jammed X axis motor or beam or a malfunction of the X axis motor or electronics. Turn the machine OFF, then back ON to recover. If this error occurs more than once during a design, call your representative for assistance.

X Command Error

This means an invalid command sequence was detected in the X axis motor controller software functions. The machine must be turned OFF, then back ON. If this error occurs more than once during a design, call your Melco representative for assistance.

X Home Timeout

See Y Home Timeout.

X Jog LImit

See Y Jog Limit.

X Move Timeout

See Y Move Timeout.

X Rack Not Done

See Y Rack Not Done.

X Thd Remove Err

See Y Thd Remove Err.

X Tracking Err

See Y Tracking Err.

Y Axis Limit

This message means that the drive circuit of the Y axis motor has detected excess power. This is caused by a jammed Y axis motor or beam, or a malfunction of the Y axis motor or electronics. Turn the machine OFF, then back ON to recover. If this error occurs more than once during a design, call your representative for assistance.

Y Command Error

This means an invalid command sequence was detected in the Y axis motor controller software functions. The machine must be turned OFF, then back ON. If this error occurs more than once during a design, call your Melco representative for assistance.

Y Home Timeout

This error message means the Y rack did not complete its commanded move when trying to Set Home or Go To Home in the Home Menu. Repeated occurrences of this message may indicate a mechanical bind in the racks or an electrical problem. To recover turn the machine power OFF then back ON and try to set home again.

Y Jog Limit

This error message means the physical Y axis rack limit was reached while manually jogging the racks with the arrow keys. To recover manually jog the racks in the opposite direction.

Y Move Timeout

This error message means the Y rack did not complete its commanded move in the Move Menu. Repeated occurrences of this message may indicate a mechanical bind in the racks or an electrical problem. To recover from this error exit the Move Menu, manually jog the Y rack using the arrow keys, then try the move again.

Y Rack Not Done

This means the needle is trying to enter the cloth before the X or Y motion is complete. It is caused by a combination of a dense fill stitch and sewing speed. Try reducing the sewing speed to allow the needle time to clear the fabric and prevent broken needles and damaged fabric.

Y Thd Remove Err

This error should only occur during a trim (thread removing function) and means the Y rack did not complete its commanded move. Repeated occurrences of this message may indicate a mechanical bind in the racks or an electrical problem. To recover from this error you must turn the machine power OFF then back ON. If a design was sewing before the error try a Power Fail Rescue to resume sewing the design.

Y Tracking Err

This error message means the Y axis motor is not tracking (or moving) as commanded by the Y axis controller software. This error can occur during sewing, trims, tracing, framing and during moves in the Move Menu. Repeated occurrences of this message may indicate a mechanical bind in the racks or an electrical problem (check for mechanical binds). The machine will stop sewing when this problem occurs. To recover from this error when sewing try to Frame Back a few stitches then press the ⚠ key to continue sewing. If this doesn't work turn the machine power OFF then back ON and try a Power Fail Rescue. If this error occurs during tracing, framing or moving functions try the function again.

Z Command Error

This error message is software related, and means that an invalid "read" or "write" command sequence was detected in the Z controller software functions. This can be caused by sewing at too high a sewing speed. Reduce the speed and continue or go to the Head Timing Menu and choose GO TO HEADUP command. Then press the ⚠ key to continue.

Z Timeout Error

This error message means that the Z axis was commanded to move, but did not complete the move in the allowed time. The message can occur during normal sewing or most functions in the Head Timing menu. To recover, execute the Go To Headup option in the Head Timing menu.

Repeated occurrences of this message may indicate a mechanical bind in the sewing head, for example, thread gathered in the hook area. Locate and correct the problem. If you cannot locate the problem or if this message continues to occur often, call your Melco service representative .

Z Tracking Err

This means the Z axis motor is not tracking as commanded by the Z axis controller software. Execute the Go to Headup option in the Head Timing menu. Exit the Head Timing menu and press the ⚠ key to continue sewing. If the message does not clear, call your Melco representative for assistance.

9. Glossary of Embroidery Terms

A

ACTIVE WINDOW
The window that you are currently using. Also called the current window.

ALPHABETS
Lettering styles that are ready to use for embroidery. Alphabets can also be designs that are brought to the screen using letters of the alphabet. An example of this would be Sports Symbols.

APPLICATION WINDOW
The first window to appear when EDS III is opened. The Application Window has three menu bar items; File, Peripheral, and Help.

APPLIQUE
The art of using fabrics to enhance a design or to reduce the stitch count.

ARTWORK
A design or cartoon used to digitize.

AUTO DELETE
An option that automatically deletes designs from the sewing peripheral after the design has sewn once.

AUTO RUN
An option that automatically sends a design to the beginning of the job queue, allowing you to sew without making any selections from the peripheral menus.

AUTO TRIM
An option that automatically inserts a trim command between each alphabet letter used in a design.

ARC ANGLE
The center of lettering sewn on a circle. This position is given in degrees, 0É at the top of the circle,180É at the bottom.

ARC FROM CENTER
When the position of the needle prior to sewing is at the center of the circle. The distance from the center of the circle to the bottom of the lettering is the radius.

ARC NORMAL
When the position of the needle prior to sewing is on the circumference of the circle.

ASD
The file extension given by EDS III to a design that is sent to the peripheral.

B

BACKING
Fabric used for stabilizing that is added to the back of a garment to be embroidered.

BEAN STITCH
A form of running stitch where the stitch is made forward, then back to the original needle penetration point, then forward again. Also known as a triple run.

BIRD NEST
A tangled mass of thread that gets jammed in the needle plate. Sometimes it is caused by improper tensions.

BIT PAD
Another name for a Digitizing Tablet.

BLOCK
A designated group of stitches that can be scaled, rotated, repositioned, deleted, cut, copied and pasted.

BLOCK EDIT
The term used for changing a defined group of stitches.

BOBBIN
The reel or spool that holds the under thread of machine sewing. The under thread itself.

C

CENTER DESIGN
Positing the design in the center of the sewing field.

CHAIN STITCH
A stitch used to outline and detail a chenille design.

CHENILLE
A form of embroidery with a deep pile that uses heavy yarns and has no bobbin thread. Commonly used for high school letter jackets.

CLICK
Pressing and releasing a mouse button in one quick motion.

CLIPBOARD
A temporary storage area in the computer's memory. Data in the storage area can be copied to another place.

CND
The three letter extension given to a Condensed file. See Condensed Format for more information.

COLUMN FILL
An option to turn wide column or satin stitches into a series of shorter stitches.

COLUMN STITCH
A stitch formed with one needle penetration on either side of a column. Also referred to as a satin stitch or a steil stitch.

COLUMN WIDTH
The width of the actual side-to-side needle penetrations in a column or satin stitch. In EDS III, the width can be increased or decreased in increments of 10% from 90% to -90%.

COMPLEX FILL
A method for digitizing fills where the computer automatically determines the various independent segments that are required in making the complete fill of an irregular shape.

CONDENSED FORMAT
A coding format that includes only the data for the Mk entries and function commands created during digitizing. This format allows you to scale the design up or down as well as change the density and stitch length of the design.

COPY
A command that keeps the design in the current window and also stores it in a temporary memory called the clipboard.

CURSOR
An icon used to indicate your position on the computer screen.

CUT
An editing function used to take selected stitching out of a design and store it in the clipboard. From there it may be pasted to a different place.

D

DATASET
A basic set of instructions to produce an embroidery design.

DEFAULTS
Values that are automatically used unless you override them with different values.

DENSITY
The vertical distance between two lines of stitching, measured in points.

DESIGN FILE
Any design stored on your hard disk or floppy disk. A file name can have up to eight letters, a period, and a three letter extension.

DIALOG BOX
A box displayed on your computer screen that prompts you to give information, such as a selection from a list of options, or a file name.

DIGITIZING
Converting artwork into a series of commands that can be read by an embroidery machine with the use of a special device.

DIGITIZING TABLET
A board used to communicate with a computer or an embroidery machine while creating a design.

DIGITRAC
The original Melco computerized digitizing system which uses an exceptionally large surface and its own vertical stand.

DIRECTORY
A named group of computer files stored on one of your computer drives. The hard drive of your computer is usually the C directory. Floppy diskettes are inserted into the A or B drive.

DISK
A computer data storage device which is accessed in the hard drive or one of the floppy drives.

DISKETTE FORMAT
The manner in which a disk has been prepared to accept information.

DITHERED COLORS
A combination of a solid color and a pattern.

DOUBLE CLICK
Pressing the mouse button quickly two times.

DRAG
Holding down the mouse button while moving the mouse. This is usually done to move an object on the screen or to highlight text.

DROP-DOWN MENU
A list of available commands that displays when you click on a menu option. Commands displayed in black are accessible, commands that are displayed in gray or half tone are not.

E

EDIT
Changing a design file by adding, deleting or moving Mk points, or by inserting and deleting functions.

EMBROIDERY POINT
A unit of measure equal to one tenth of a millimeter or 1/254th of an inch.

EXP

The three letter extension given to an Expanded file.

EXPANDED FORMAT

A coding format that includes the data for every stitch in the design.

EXPORT

Copying a design from the computer to a non-DOS format diskette or paper tape.

EXTENSIONS

The last part of a file name after the period. It can be up to three characters long and is used to identify the type of file.

F

FILE

A related collection of information, named and often stored on a disk.

FILE NAME

The unique identifier given to a design that is stored on a computer. The file name can have up to eight characters, a period, and an up to three letters extension.

FILL STITCH

A series of running stitches used to cover large areas.

FORMAT

Preparing a disk to receive information. All new disks must be formatted, but reformatting a disk destroys any information stored on it.

FUNCTION

An action caused by a command in a design such as Trim, Color Change, Needle Up, etc.

G

GRAPHICAL ROTATION

Angling a design in the Layout window using the mouse to click and drag the rotation box around the object.

GRAPHICAL SCALING

Making a design larger or smaller in the Layout window using the mouse in a click and drag motion.

GROUP OBJECTS

Objects that have been locked together on the screen.

H

HARD DISK
A sealed area in your computer with a read/write head and auxiliary memory.

HOOP
A device made of wood, metal, or plastic used to hold a garment or fabric taut during the embroidery process.

HORIZONTAL SPACING
Additional spacing that may be added between Alphabet letters.

I

ICON
A small graphic representation of something larger.

IMPORT
Bringing a design file into the EDS III program from a non-DOS formatted diskette or paper tape.

INSERT
Adding additional information to an existing design.

J

JUMP STITCH
A frame movement without a needle penetration. It function allows you to make a stitch longer than the maximum stitch length of your machine.

L

LAYER BY COLOR
Used to show specific colors of a design on the computer screen.

LAYOUT WINDOW
The screen in which you can digitize designs, open files on the hard disk, import designs from floppy disks, export designs, modify designs, and create lettering.

LETTER WIDTH
The overall width of each letter, NOT the column width. In EDS III changes to letter width can be made in increments of 10% from +30% to -30%.

LINE CENTER BOTTOM
When lettering is centered horizontally and above the position of the needle prior to sewing.

LINE CENTER MIDDLE
When lettering is centered horizontally and vertically from the position of the needle prior to sewing.

LINE NORMAL
When the bottom left of the lettering is the needle position prior to sewing. The sewing will stop at the bottom right and will not return to the original position.

LINE SPACING
Adding space between lines of lettering. Line space is determined by adding the letter height to the amount of blank space you want between the lines.

LIST BOX
A box, usually with a scroll bar, that appears within a dialog box and displays available options.

LOAD FILL
Accessing a fill pattern for inspection or changes.

LOCK GROUP
One or more objects that have been joined together.

LOCK STITCH
Three or more stitches placed closely together to prevent the embroidered stitches from pulling out. Also know as a tie-off stitch.

M

MAXIMIZE
The small button to the right of the Title Bar with the up arrow. Used to enlarge a window to its fullest extent.

MAXIMUM STITCH LENGTH
The longest stitch your embroidery machine is capable of sewing before performing a jump stitch. The maximum stitch length for Melco is 127 pts.

MINIMIZE
The small button on the right of the Title Bar with the down arrow. Used to reduce a window to an icon.

MODIFY MK BUTTON
An option that changes the position of a Mk point or changes the Mk to a different type of Mk.

MOSS STITCH
The "loopy" part of a chenille design. The height of the loop is controlled by the height of the needle.

MULTIHEAD
An embroidery machine with more than one sewing head.

N

NEEDLE UP
A command used to move from one part of a design to another without stitching.

NON-DOS FORMATS
Any disk format other than DOS that is supported by EDS III, such as: Melco, Tajima, Barudan, ZSK.

NORMAL STITCH
A command that resets the stitching to a regular running stitch. It also brings the needle down to the sewing position after a needle-up function is performed.

O

OBJECT
Any design from a disk, paper tape, or lettering brought in to the Layout window. Several objects can be in one window at one time.

OBJECT FILE
A code format where each object has its own separate set of parameters. Condensed, expanded and lettering designs can all be saved together as an Object File.

OBJECT ORDER
A list showing the sewing order of a group of objects.

OBJECT PARAMETERS
A dialog box which allows you to change the scale, rotation, orientation, or lock status of an object.

OFM
The three letter extension that identifies an Object file.

ORIENTATION
The direction that a design will sew. Melco uses an "F" to designate a normal sewing position.

ORIGIN
The point at which a design will start. Most designs will have x and y coordinates of 0,0; meaning that the design will start in the center and end in the center.

P

PAPER TAPE
An older form of computer information storage in which the information is stored as a series of holes on a reel-to-reel paper tape.

PARTITION LINE SEQUENCE
Determines where the needle will penetrate on each line of stitching in a fill stitch.

PERIPHERAL
Any device that is attached to or run by the computer: Embroidery Machines, Paper Tape Punches, Digitizing Tablets, Printers, or Plotters.

PERIPHERAL SETUP
A dialog box that allows you to select Embroidery Peripherals in your network.

PERIPHERAL STATUS
A dialog box that displays information about a particular peripheral.

POINT EDIT WINDOW
One of the windows that is used to edit designs.

R

RADIUS
The distance from the center to the circumference of a circle. The value of the radius controls the amount of curve in an arc.

REGENERATE
A command to redraw a design, used to see modifications in the current design.

RESET STITCH
See Normal Stitch.

RETURN TO ORIGIN
A command used to move the pantograph back to the origin of the design.

RUBBER BANDING
A command to view an edited portion of a design without regenerating the entire design.

RUNNING STITCH
A line of equally spaced stitches that are used to outline, underlay or add detail to a design.

S

SATIN STITCH
A stitch formed with one needle penetration on either side of a column. Also called a column stitch or steil stitch.

SAVE
A command to overwrite a previously saved file without prompting you for a new filename.

SAVE AS
A command to store a design for the first time, or to store a modified design with a new name to prevent destruction of the original design.

SAVE FILL
A command to allow you to define fill information while digitizing.

SCALING
The process of changing the size, density or stitch lengths in a design.

SCROLL BAR
A bar that appears at the far right or bottom edge of a window or list box whose contents are not fully visible. Clicking on the arrows of the bar moves the viewing portion of the screen.

SEND DESIGN
A command that loads a design in the active window into one or more peripherals. The design can be a condensed, expanded, or object file.

SHORT STITCHES
Computer generated stitches that do not go all the way across a column at a curve or angle to prevent an excess of stitches at one point.

SLANT ANGLE
A command that slants lettering in one degree increments up to fifteen degrees, positive or negative.

SPECIAL STITCH
A user defined stitch that is digitized and stored temporarily in the computer memory. A Special Stitch is limited to 30 Mks or commands.

STATUS BAR
The area at the bottom of the computer screen that displays information about the active window or selected command.

STITCH
One needle penetration made by the embroidery machine.

STITCH COUNT
The number of stitches in a design.

STITCH LENGTH
The length of the running stitches in a design. Measured in points.

STITCH LIST (condensed)
Information showing the Mk points and functions that make up a design.

STITCH LIST (expanded)
Information showing the actual stitches and functions that make up a design.

STITCH PROCESSOR
An EDS III option that changes the size, densities, or stitch lengths of an expanded design.

STORED SYMBOL
A portion of a design that is digitized as a separate piece to be used multiple times within the same design. An example of this would be a leaves on a tree. You would digitize one leaf as a stored symbol then use that same leaf and place it on the tree at various different sizes and angles. This eliminates redigitizing the same design.

T

TIE OFF
See Lock Stitch.

TILE
Allows you to put up to nine windows in the Application Window.

TOOL SET
The commands and options on the left side of the window represented by icons.

TRANSFER DESIGN
A command that sends Expanded or ASD files to the Peripheral.

U

UNDERLAY
Stitches used to stabilize fabric and/or prepare the area for top stitching.

UTC
UTC is the Under Thread Control. It is a sensor mounted to the needle plate bracket that recognizes the absence of the bobbin thread. When the machine sews a certain number of stitches without bobbin thread, the UTC causes the machine to stop, back up that number of stitches, and display the error message, CHECK BOBBIN. The UTC also has a retaining tab that holds the inner basket of the rotary hook.

V

VERTICAL SPACING
A command that stair steps your lettering up (positive value), or down (negative value).

W

WINDOW
A rectangular area on your screen in which you view and work on designs.

Z

ZOOM
A command that enlarges or reduces a portion of a design in the current Layout window, allowing you to edit with more precision. This command does not affect the sewing size of the design.

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Quick Reference Guide

for the

EMC 10T, 10/4, and 10/4T

Melco
Embroidery Systems
A Saurer Group Company

EMC 10T, 10/4, and 10/4T QUICK REFERENCE

Set Home
Do this every time you turn the machine on.

1. Press [MENU] until the display reads: HOME MENU.
2. Press [↵] . The display reads: SET HOME.
3. Press [↵] .

Select a Hoop Size

1. Press [MENU] until the display reads: HOME MENU.
2. Press [↵] . The display reads: SET HOME.
3. Press [◄] . The display reads: HOOP LIMITS ON. If not, press [▲] until it does.
4. Press [◄] . The display reads: SELECT HOOP.
5. Press [↵] .
6. Press [◄] or [►] to scroll to right the hoop size.
7. Press [↵] .

Reset Designs

1. Press [MENU] until the display reads: RESET MENU.
2. Press [↵] . The display reads: SYSTEM RESET.
3. Press [↵] . The display reads **RESET** .

Run a Design

1. Press [MENU] until the display reads: DESIGN MENU.
2. Press [↵] .
3. Press [◄] or [►] to scroll to the design you want.
4. Press [↵] . The display reads: COLOR MENU.
5. Press [▼] or [▲] to select the sequence.
6. Press [►] or [►] to select the color.
7. Press [◄] to delete a sequence.

8. Press [↵] . The display reads: ORIENTATION MENU.
9. Press [↵] .
10. Press [◄] or [►] to scroll to the orientation you want.
11. Press [↵] . The display reads: RUN DESIGN.
12. Press [↵] . First the display reads: MACHINE READY, then shows the design name.
13. Press [MENU] until the display reads: TRACE MENU.
14. Press [↵] . The display reads: CENTERING OFF.
15. Press [◄] . The display reads: TRACE OUTLINE.
16. Press [↵] . First the display reads: CALCULATING, then shows the design name.
17. Press [⊿] . The trace function begins.

Repeat by pressing [⊿] again.

18. When ready to sew, press [↵] , then press [⊿] .

Change the Sewing Speed

Press [◄][►] to increase speed.
Press [◄][◄] keys to decrease speed.

Raise the Needle

1. Press [MENU] until the display reads: HEAD TIMING MENU.
2. Press [↵] .
3. Press [◄] . The needle comes up.
4. Press [MENU] to exit the Head Timing Menu.

Delete a Design

1. Press [MENU] until the display reads: DESIGN MENU.
2. Press [↵] .
3. Press [◄] or [►] to scroll to the right design file.
4. Press [◄] . The display reads: KILL FILENAME?.
5. Press [◄] for YES or [►] for NO.
6. Press [↵] .

Trim on Command

1. Press [MENU] until the display reads: TRIM MENU.
2. Press [↵] .
3. Press [◄] or [►] until the display reads TRIM IMMEDIATE.
4. Press [↵] . The pantograph moves and a trim is performed.