Operation Manual for the EP 1 embroidery peripheral

- Single head, single needle
- Easy to operate
- Low power consumption
- High quality results

Melco
Embroidery Systems

A Saurer Group Company

1575 West 124th Avenue
Denver, Colorado 80234
United States of America
e-mail via the Internet: publications@melco.com

First Printing: October 1995

Table of Contents

5. Configuration

6. Operator Maintenance

Appendix A. EP 1 Troubleshooting Guide

1. Setup

The setup procedure for the EP 1 Embroidery Peripheral is easy and will only take a few minutes.

1. Carefully remove the machine from the shipping container, using care not to drop or damage any other items packed around it. The machine is heavy, so be careful. Place the machine on a sturdy table or work bench.

NOTE: Be sure to save the shipping container and packing supplies that your embroidery peripheral came in. If your machine should ever require factory service, it should be returned in the original (or other equally suitable) shipping container.

2. Make certain the machine's power switch is turned to the OFF position.

3. Plug the power cord into a wall outlet. A surge protector is recommended but not required.

4. Connect the peripheral to your controller or host computer using the network cable. Plug the network cable into **either** of the network ports, as shown in Figure 1-1. Plug the terminator cable into the other network connector. It does not matter which cable is plugged into which connector.

Terminator cable

Network cable
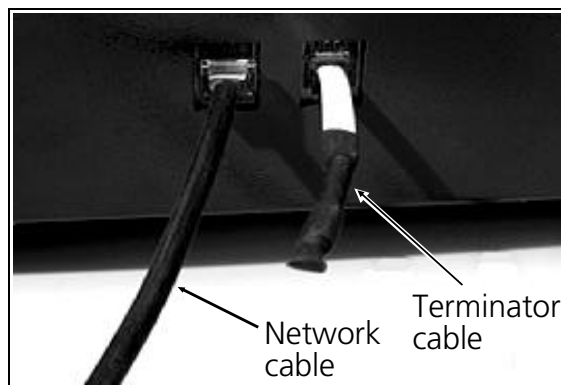
Figure 1-1

5. Your machine may have come with a needle already installed, but it is a good idea to start your sewing with a new needle.

6. Locate the thread guide bar and gently pull it upward until it reaches its maximum height. It will extend like a car antenna. Rotate the guide bar until the ends are aligned over the thread cones on the base below (see Figure 1-2).

7. Your machine may have come with thread already loaded on the bobbin, but check to make certain.

8. Load a spool of thread onto the thread stand and thread the machine as required.

Figure 1 - 2

At this point your EP 1 should be ready to begin sewing. If you should encounter any problems during this procedure, contact your local Melco representative for assistance, or call Melco's Technical Support line.

2. Needles, Bobbins, and Threads

This chapter covers how to thread your machine, select and install needles, wind the bobbin reels, and properly set the upper and lower thread tensions.

Threading the EP 1

1. When routing the thread, apply a small amount of pressure on the supply spool to prevent the thread from unwinding too quickly.

2. Hook the thread onto the thread guide mounted above the supply spool.

3. Pass the thread into the right hole of the top plate thread guide from the front to the back. Bring the thread over the top of the same thread guide and pass it into the left hole, again from the front to the back (refer to Figure 2-1).

4. Hook it around the back of the tension disc (A) 1/2 turn in a counter-clockwise rotation (refer to Figure 2-1). Use the rear tension disk (B) instead of (A) only when the Isacord thread is used.
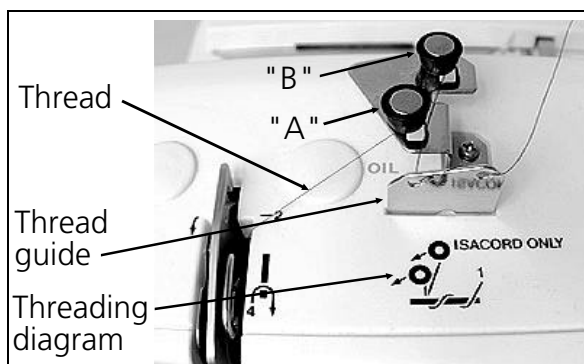
Figure 2-1

Figure 2-2

5. Pass the thread into the rear hole of the thread tension unit, with the thread between the thin metal piece and the bar.

Figure 2-3

6. Pull the thread under the take-up spring and up the right side of the thread tension unit, passing it under the take-up spring.

Figure 2-4

7. Pass the thread through the embroidery thread take-up lever from the left to the right; and then pull it downward toward the first lower thread guide.

Figure 2-5

Figure 2-6

8. Hook the thread into the two lower thread guides as you continue to pull it downward.

Figure 2-7

Figure 2-8

9. Hook the thread into the needle bar thread guide from the left side.

10. Pass the thread into the needle from the front to the rear (use a threader if desired).

Figure 2-9

Figure 2-10

11. After threading the needle, position the embroidery thread through the presser foot hole. You may do this now by threading it as you would the eye of a needle or in the following procedure while drawing out the bobbin thread.

The Bobbin Case

Removal

1. After turning off the power switch, lift the needle above the throat plate by rotating the flywheel.

2. Remove the auxiliary table by lifting slightly at its left front and sliding it off to the left.

Figure 2-11

3. Open the bed cover by placing your finger at the left rear of the cover and flipping it forward and down to its opened position.

4. Pull out the bobbin case lever and remove the bobbin case from the hook body.

NOTE: The hook area must be kept clean to avoid thread breakage problems! If you find any thread debris at this time, clean it out.
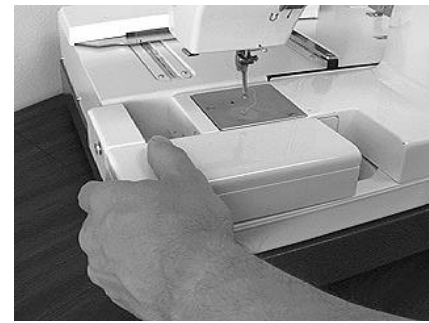
Figure 2-12

Winding Thread Onto The Bobbin Reel

The bobbin winder can wind bobbin thread anytime, even while embroidering, because the bobbin winder is an independent part of the embroidery machine.

1. Attach the bobbin reel onto the bobbin winding shaft, and push the bobbin winding shaft downward.

2. After hooking the bobbin thread onto the thread guide above the bobbin thread cone, route the thread through the first thread guide, and then the second guide, in this order. Each thread guide features a thread path diagram, as shown in Figures 2-13 and 2-14.
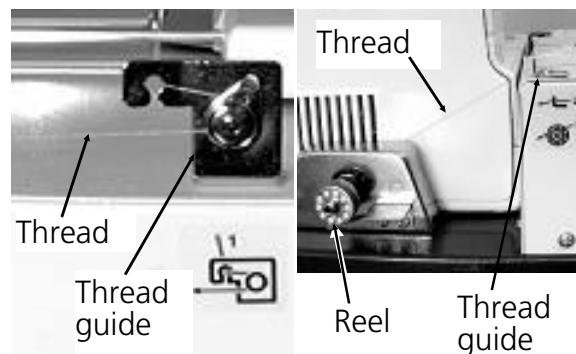
Figure 2-13   **Figure 2-14**

3. Pass the thread through a bobbin reel hole from the inside of the wall to the outside.

4. Press and hold the [SPOOL] key until the bobbin begins turning.

NOTE: If the [SPOOL] key is not held down long enough, the bobbin will not turn.

5. After the thread has been wound completely, the bobbin reel will continue to spin for a few moments before stopping.

6. After the bobbin reel has stopped turning, cut the thread and remove the bobbin reel from the bobbin winding shaft.

7. If the thread was cut or if thread cannot be wound on the bobbin reel normally during thread winding, the thread winding can be stopped by pressing the [SPOOL] key again.

Setting the Bobbin

After thread has been wound onto the bobbin reel and the bobbin reel is placed into the bobbin case, install the bobbin case into the hook body.

NOTE: Turn the power switch OFF when putting the bobbin case into the hook body.

1. Hold the bobbin case in your left hand so the open side is facing toward you.

2. Hold the bobbin reel in your right hand.

NOTE: It is recommended that you orient the bobbin reel so the thread is coming off in a clockwise direction. However, some users feel that orienting it with the thread coming off in a counter-clockwise direction is better. Either way is acceptable.

3. Place the bobbin reel into the bobbin case.

4. Grasp the end of the thread, and pass the thread into the bobbin case slit.

5. Draw the thread under the tension plate and out the opening in the bobbin case, then pass the thread into the hole of the bobbin case horn (use the aid of the threader if desired).

6. Draw out the thread about 4 inches (10cm).

7. Set the bobbin thread tension.

Installation

1. To install the bobbin case into the hook body, pull out the bobbin case lever as you do when you remove the bobbin case (the bobbin does not fall out of the case when the lever is held out).

2. Position the bobbin case horn so it points upward. Set the horn into the concave portion of the hook body as you insert the bobbin case onto the post in the middle of the hook body.
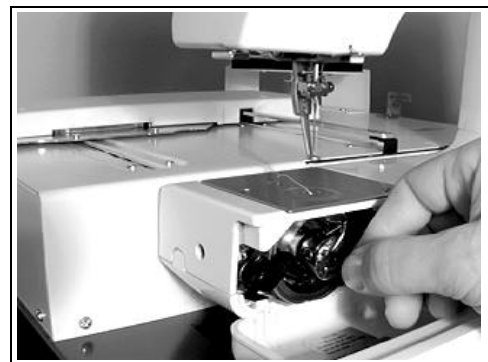

Figure 2-15

3. Release the bobbin case lever and check that the lever has grasped the end of the post, thus securing the bobbin case in the hook body.

Drawing Out the Bobbin Thread

After setting the bobbin thread and threading the embroidery thread, draw the bobbin thread out of the needle plate hole as follows:

1. Hold the end of the embroidery thread by the left hand. Do not stretch it so tightly that the needle tip is deflected.

2. Lower the needle once, and lift it again by rotating the flywheel toward you (counterclockwise) with your right hand.

3. After the embroidery thread take-up lever has reached the top, pull slightly on the embroidery thread, and the bobbin thread will come through the needle plate hole.

4. Pull the drawn bobbin thread to the left, and hook it to the thread holder of the auxiliary table.

5. Pull the embroidery thread loop to the left from below the Presser Foot, thus allowing it to pass through the bottom hole.

6. Hook the embroidery thread to the thread holder on the left side of the faceplate. Take up any looseness, and hang it down about 1 1/4 inches (3cm).

7. Use the face plate thread cutter to cut any surplus thread to a suitable length.Setting Thread Tensions

Setting Thread Tensions

Upper Thread Tension

The upper thread tension wheel works best when set between 4 and 5 on the numbered dial. A higher number on the dial will increase the tension and a lower number will decrease the tension. Experimentation with different threads and fabrics will give you experience on how to set the upper thread tension to best suit your needs.

Bobbin Thread Tension

For the best possible results, it is important to use the bobbin reels and bobbin thread that was furnished with your machine. Most pre-wound bobbins do not work well with the EP 1. Melco recommends the use of Rasant bobbin thread, which is available from Accessory Resource Corporation.

1. Put the filled bobbin reel into the bobbin case. Make certain the thread goes through the slit in the side of the case and under the tension plate.

2. Support the bobbin case with one hand and lift the thread with the other hand.

3. Dangle the case by the thread. The tension should be tight enough that the case is supported by the thread. If the thread unwinds from the reel too easily, the tension must be increased. Tighten the setscrew (clockwise) on the outside of the case.

4. Gently jiggle the case like a yo-yo. The tension should be loose enough that a small amount of thread (about an inch) unwinds from the reel, then stops. If no thread comes out, the tension must be decreased. Loosen the setscrew slightly (counter-clockwise), then jiggle the case again.

5. Once the tension has been set properly, put the thread through the hole in the horn that is attached to the bobbin case, then install the case into the machine.

How to Select a Needle

The EP 1 embroidery machine uses a Class 15 household sewing machine needle. The following needle types are given to help guide you in selecting the proper needle for your various embroidering situations. This is only a suggestion, and you should choose your needles in the future through experience you gain while embroidering.

HA x 1 65/9 sharp: for embroidering a thin material, like a pocket in the lining of a coat.

HA x 1 75/11 sharp: standard, applicable to almost all embroidering.

HA x 1 90/14 sharp: for embroidering a thick material, like a canvas bag.

65/9 ball point, 75/11 ball point, & 90/14 ball point: for knits, sweaters, & other delicate garments.

Needle Replacement

1. With the power switch turned OFF, raise the needle above the needle plate by turning the flywheel counter-clockwise.

2. Loosen the needle clamp screw with a screwdriver.

3. Remove the needle by pulling it down and out of the needle clamp.

4. Check the new needle for a flat portion on the shank. If there is a flat, rotate the needle so the flat is facing to the rear of the machine. This automatically positions the needle properly for installation. If no flat is on the shank of the new needle you must orient the needle with the "scarf' facing to the rear of the machine. This will leave the "thread groove" of the needle in the front. (You can easily feel the groove by rubbing your finger nail across the front of the needle.)

5. Insert the new needle fully into the needle clamp until it touches the pin.

6. Tighten the needle clamp screw securely.

3. Embroidery Hoops

Loading Garments

Do not load garments or fabrics while the hoop is attached to the EP 1. Doing so may damage the machine. Hooping is best accomplished on a clean, sturdy table.

Round Hoops

1. Place the outer frame on a flat surface with the label on the mounting plate facing up.

2. Lay the garment over the outer frame of the hoop and center the work area.

3. Put the inner frame over the garment and press downward, capturing the garment between the two hoops.

4. Pull the edges of the garment outward to stretch it tautly.

NOTE: Many fabrics will stretch unevenly and cause distorted embroidery if care is not used during hooping.

5. Tighten the adjusting screw to secure the outer frame. This will not tighten the garment, only the frame itself.

You may need to load some garments several times until you get it "just right."

Rectangular Hoops

When stitching large embroidery designs (maximum of 5.5" x 9.4"), use the rectangular embroidery hoop (available from Accessory Resource Corporation).

Put a fabric on the embroidery hoop after placing the embroidery hoop on a table or a flat surface. Fix the four sides by inserting the fabric holders from the top. To hoop the fabric correctly, check the fabric position after mounting the righthand fabric holder. When mounting the lefthand fabric holder, press the fabric with the palm before mounting, and the fabric should not stretch excessively.

Attaching The Hoop To The Pantagraph

1. Hold the hoop at a slight angle (approximately 15 degrees) and slide the mounting plate into the pantagraph opening, as shown in Figure 3-1.

2. Lower the hoop, with the mounting plate centered over the two guide pins, as shown in Figure 3-2.

Figure 3-1   **Figure 3-2**   **Figure 3-3**

4. When the mounting plate is firmly placed on the guide pins, turn the mounting knob clockwise to secure the hoop, as shown in Figure 3-3.

To remove the rectangular embroidery hoop, turn the knob in the direction opposite the arrow then remove the mounting plate from the guide pins.

NOTE: When removing a fabric from a rectangular hoop, press the fabric holder from the rear side (lower face) of the hoop, and the fabric can be removed easily.

After sending a design to the EP 1, follow the steps below:

1. Press [MENU] until the display reads DESIGN MENU.

2. Press [ENTER] to display the design. Select from the available designs by using the [⇓] or [⇑] keys.

3. Press [ENTER] again to select the design in the display. The display will then read RUN DESIGN.

4. Press [ENTER] once again to set the design queue.

5. Press [MENU] until the display reads TRACE MENU.

6. Press [ENTER]. The display will read CENTERING OFF.

7. Press the [⇓] key. The display will read TRACE OUTLINE. Press [ENTER] to calculate the trace area. The display will read TRACE DESIGN.

8. Press [START] to trace the design.

If the hoop needs to be moved for embroidery, use the appropriate arrow keys, then press [START] to trace the design again.

9. Press [ENTER] to prepare the EP 1 for embroidery.

10. Press [START] two times.

11. When the design is finished embroidering, the display reads END OF DESIGN. Press [START] to embroider this design again, or press [MENU] until the display reads RESET MENU to change designs.

12. Press [ENTER] four times (until the display reads MACHINE 01 READY.

13. Repeat procedure for the next design.

> NOTE: If you lose your place during this sequence, go to the RESET MENU and press [ENTER] four times. It is easier to reset and start again than to back out of an error.

4. Detailed Operation

This chapter explains all the control panel keys and the various operation menus of the EP 1 embroidery peripheral.

The Control Panel

The Liquid Crystal Display (LCD)

Displays the different menus and choices, as well as embroidering and design information (see Figure 4-1).

Figure 4-1

Start Key

Begins the embroidery process and restarts it if the machine was stopped. Also activates the Return to Origin, Trace Outline, and Move operations.

Stop Key

Halts the embroidering process. Also activates the Frame Back function. Press once and release and the machine will "back up" one stitch. Press and hold for 5 seconds and the machine will back up continuously, even after the key is released, until [STOP] is pressed again.

Arrow Keys

The arrow keys allow you to move the hoop and manually select the starting position for embroidery. Also used to move throu gh the various operation menus.

Hoop Center Key

Pressing this key centers the chosen hoop directly beneath the needle.

Spool Key

Activates the bobbin winding mechanism, and manually stops winding.

Menu Key

Selects the different operation menus. Each time [MENU] is pressed the next menu will be shown on the display. After the last menu has been displayed, the first will be shown again

Enter Key

Used to choose different menu options and to display design information during embroidery. Press once during embroidery and the stitch count and preset maximum embroidery speed are displayed. Press again during embroidering and the design name and present embroidery speed are displayed.

Alt Key

This key is used only in conjunction with other keys to activate the following options:

[ALT] + [⇑] increases the preset maximum embroidery speed while embroidering.

[ALT] + [⇓] decreases the preset maximum embroidery speed while embroidering, deletes design files in the Design menu, and allows you to change the machine's unit number during a hard reset.

[ALT] + [⇐] allows you to see the width of a chosen design from the centerpoint.

[ALT] + [⇒] allows you to see the height of a chosen design from the centerpoint.

[ALT] + [MENU] allows you to move through the operation menus in reverse order.

[ALT] + [ENTER] enables you to "undo" your current menu choice and return to the idle mode display.

The Light Emitting Diodes (LED)

Two of the control keys, Start and Menu, feature a small red LED in the upper left corner.

The Menu LED will glow to indicate a menu operation in progress.

The Start LED will glow while the machine is embroidering. If the embroidering is stopped (either manually or due to a thread break) the LED will blink continuously.

The Operation Menus

Design Menu

Press [MENU] until the display reads DESIGN MENU, then press [ENTER]. You can use the [⇑] or [⇓] keys to scroll through up to 16 different designs sent from the controller computer. If no designs are present, the display will read NO DESIGNS FOUND.

To select a design that is displayed, press [ENTER]. To delete a design that is displayed, press [ALT] + [⇓], then press [⇑] for "yes" or [⇓] for "no". If the design is sent from the controller computer using the Auto Delete feature, it will automatically be deleted at the end of embroidering.

Run Design

Press [MENU] until the display reads RUN DESIGN, then press [ENTER]. The display will read SET QUEUE 01, then will display your chosen filename. Up to 28 queue settings may be assigned and their designs embroidered one after another. Once a file has been embroidered, it will be **removed** from the queue if the auto delete feature is activated and the next file in the queue will be selected. If the design is sent from the controller computer using the Auto Run feature, it will automatically be added to the queue.

NOTE: If you are embroidering one design at a time, always make certain the display reads: QUEUE 01. This ensures you are always embroidering the "current" design and not a "previous" one.

Frame Menu

Press [MENU] until the display reads FRAME MENU, then press [ENTER]. The display will read FRAME BACK. Press [⇒] and the display will read FRAME FORWARD.

Press [STOP] once and release, and the machine will "back up" or "move forward" one stitch. Press and hold for 5 seconds and the machine will frame backward or forward continuously, even after the key is released, until [STOP] is pressed again. This operation will stop automatically at the origin, end point, or next color change.

Press [⇓] and the display will read RETURN TO ORIGIN. Press [ENTER] and the display will read: FRAME FORWARD. Press [START] and the hoop will move to the point of origin for the last design sewn.

Trace Menu

Press [MENU] until the display reads TRACE MENU, then press [ENTER]. The display will read CENTERING OFF. Press [⇒] and the display will read CENTERING ON. Press [ENTER] and the display will read CALCULATING. Once the design outline has been calculated, the display will read TRACE OUTLINE. Press [ENTER] and the display reads TRACE FILE1. Press [START] and the hoop will move beneath the needle to trace the outline of the selected design.

If the outline of the design is larger than the hoop, the alarm will sound and the display will read FRAME OVER. If no design was selected, the alarm will sound and the display will read RUN JOB ERROR.

Hoop Selection

Press [MENU] until the display reads HOOP SELECTION, then press [ENTER]. You are offered four different hoop choices. Press [⇑] or [⇓] to select a hoop type and size, then press [ENTER]. The chosen hoop will remain selected even after the power has been turned off.

NOTE: Hoop sizes <u>cannot</u> be changed during embroidering.

Move Menu

Moving The Hoop Numerically

Press [MENU] until the display reads MOVE MENU, then press [ENTER]. The display will read X, Y MOVE. Press [ENTER] again and the display will read X+00.00 Y+00.00. Move the cursor to the area you want to change by pressing [⇐] or [⇒]. Change the coordinates by pressing [⇑] or [⇓] until the desired number has been reached. Press [START] and the hoop will move to the new location.

Seeing The Hoop's Physical Location

Press [MENU] until the display reads MOVE MENU, then press [ENTER]. The display will read X, Y MOVE. Press [⇓] and the display will read LOCATION. Press [ENTER] and the display will show the X and Y coordinates of the selected hoop based on the total embroidery area available to the EP 1.

Figure 4-2 shows an example of this. The X,Y location of any design is based on the total embroidery area of the EP 1, with the reference point being the lower-left corner of that area. The total embroidery area is 5.5" wide by 9.4" high, so all location measurements are based on that size.

Figure 4-2

Reset Menu

System Reset

Press [MENU] until the display reads RESET MENU, then press [ENTER]. The display will read SYSTEM RESET. Press [ENTER] and the display will read ** RESET **. All of the designs in the embroidery queue will be cleared but not deleted from memory.

Hard Reset

Press [MENU] until the display reads RESET MENU, then press [ENTER]. The display will read SYSTEM RESET. Press [⇑] or [⇓] and the display will read HARD RESET. Press [ENTER] and the display will read ** RESET **, followed by MEMORY CLEARED. All of the changes that you have made since the machine was turned on will be reset.

Other Functions

Thread Break

If the upper thread should break while embroidering, the EP 1 will stop embroidering, the alarm buzzer will sound, and the display will read THREAD BROKEN.

Bobbin Thread Low

If the bobbin thread runs low, the alarm will sound and the display will read BOBBIN THREAD.

Dust Accumulation

If excessive dust accumulates inside the bobbin case, the alarm will sound and the display will read DUST! KEEP CLEAN.

Upper Shaft Lock

If the upper shaft stops moving and locks up due to excessive thread build-up in the bobbin case, the alarm will sound and the display will read REMOVE THE LOCK!   Clear the lock.

Hoop Limits

If your selected design is too large for the current hoop, there is a chance the hoop will move beneath the needle during embroidering, which will damage the needle, hoop, and possibly the drive mechanism. Using the Trace option prior to embroidering eliminates the chance of this occuring. However, if the hoop limits are exceeded, the alarm will sound and the display will read RACK LIMIT.
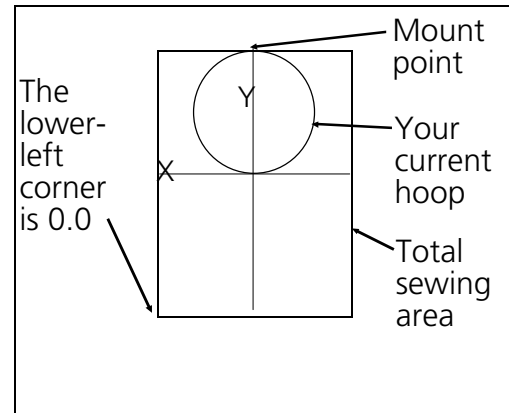
5. Configuration

The EP 1 allows you the option of setting the unit number, display brightness, and volume of the key clicks and error beeps.

Unit Number

If you have several embroidery machines hooked up to one computer, each machine must be assigned its own unit number. Each EP 1 is set at the factory as unit #1 but you can change that number easily.

1. With the machine power OFF, hold down the [ALT] and [⇓] keys and keep holding them down while you turn the power ON. Once the power is on, release the keys and the display will read: UNIT NUMBER _ _. Press [ENTER] and the display will read UNIT NUMBER 01.

2. Change the unit number by pressing the [⇑] or [⇓] keys until the display shows the number that you want.

3. Press [ENTER] until the display reads: MEMORIZE & EXIT.

4. Press [ENTER] again to "save" the unit number.

5. Turn the machine power OFF, wait a few seconds, then turn it back ON. When the machine powers up, the display will show the new unit number.

NOTE: If the power is turned off before completing this procedure, the setting will not be saved.

Display Brightness

The LCD can be set at several different brightness levels.

1. With the machine power OFF, hold down [ALT] and the [⇓] key and keep holding it down while you turn the power ON. Once the power is on, release the key and the display will read: UNIT NUMBER _ _. Press the [⇓] key and the display will read BRIGHTNESS. Press [ENTER] and the display will read BRIGHTNESS 50.

2. Change the display brightness by pressing the [⇑] or [⇓] keys until the display is at the right brightness setting for your particular needs.

3. Press [ENTER] until the display reads: MEMORIZE & EXIT.

4. Press [ENTER] again to "save" the brightness level.

5. Turn the machine power OFF, wait a few seconds, then turn it back ON. When the machine powers up, the display will be at the new brightness setting.

NOTE: If the power is turned off before completing this procedure, the setting will not be saved.

Key Click Volume

Each time you press one of the keys on the EP 1 control panel, the machine responds with a "click" sound. You can adjust the volume of this click to suit your needs.

1. With the machine power OFF, hold down the [ALT] and [⇓] keys and keep holding them down while you turn the power ON and the display will read UNIT NUMBER _ _.

2. Press the [⇓] twice and the display will read: KEY CLICK.

3. Press [ENTER] and the display will read: KEY CLICK 30.

4. Change the key click volume by pressing the [⇑] or [⇓] keys until the desired volume is obtained.

5. Press [ENTER] until the display reads: MEMORIZE & EXIT.

6. Press [ENTER] again to "save" the click volume.

7. Turn the machine power OFF, wait a few seconds, then turn it back ON. When the machine powers up, the key click volume remains at the new level.

NOTE: If the power is turned off before completing this procedure, the setting will not be saved.

Error Beep Volume

Whenever an operation error occurs, the EP 1 beeps. The volume of this beep can be adjusted to suit your needs.

1. With the machine power OFF, hold down the [ALT] and [⇓] keys and keep holding them down while you turn the power ON and the display will read UNIT NUMBER _ _.

2. Press the [⇓] three times and the display will read: ERROR BEEP.

3. Press [ENTER] and the display will read: ERROR BEEP 30.

4. Change the error beep volume by pressing the [⇑] or [⇓] keys until the desired volume is obtained.

5. Press [ENTER] until the display reads: MEMORIZE & EXIT.

6. Press [ENTER] again to "save" the beep volume.

7. Turn the machine power OFF, wait a few seconds, then turn it back ON. When the machine powers up, the error beep volume remains at the new level.

NOTE: If the power is turned off before completing this procedure, the setting will not be saved.

6. Operator Maintenance

This section explains how to clean and correctly lubricate your EP 1 .

Cleaning

A clean hook area is essential for proper operation. The hook area should be checked at the start of each day and each time bobbin thread is added.

Disassembling the Hook Area

1. Position the needle above the needle plate by rotating the flywheel.

2. Open the bed cover and remove the bobbin case.

Figure 6-1

3. Open the two hook race body cover holders by rotating the left one counterclockwise and the right one clockwise, as shown in Figure 6-1.

4. Remove the hook race body cover.

5. Remove the rotary hook.

Clean the interior of the hook race body cover and rotary hook body by using a brush or a soft, oily cloth only. Remove any dust from the two bobbin thread sensor holes inside the hook race body with a cotton swab.

NOTE: Do not use any cleaning chemicals to remove pieces of threads and dust.

Figure 6-2

Assembling the Hook Area

1. Insert the rotary hook body into the hook race body.

2. Install the hook race body cover by fitting the hook race body pin into the hook race body slit.

3. Close the right and left hook race body cover holders.

Bobbin case

Rotary hook

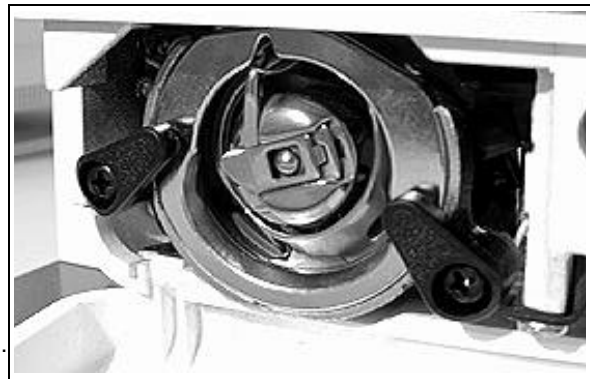Hook race body cover

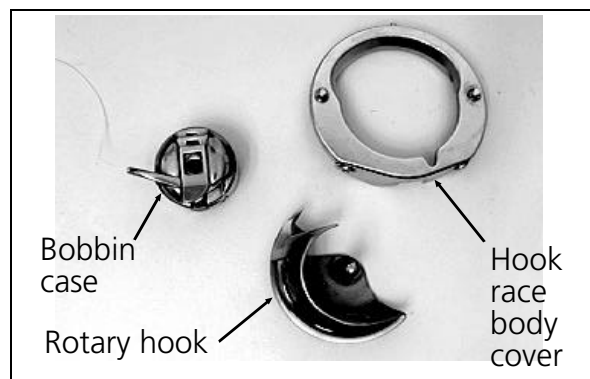4. Install the bobbin case.

5. Close the bed cover.

Figure 6-3

General Cleaning

Cleaning the outside surfaces of the machine is not important for operation, but is an aesthetic consideration. Do not use harsh detergents such as powdered cleansers or "all-purpose cleaners" for the plastic or painted parts of your machine. Use mild cleaners or a mild detergent soap solution, along with a soft, clean cloth to wipe the surfaces.

Lubrication

Lubricating the Hook Area

A well lubricated hook assembly is essential for proper operation of the machine. It should be oiled every day or each time you clean the hook assembly. Make certain that the needle is in the "up" position.

1. Remove the rotary hook body the same way you would to clean it.

2. Wipe the inside of the hook race body and the outside of the rotary hook body with an oil cloth. To avoid excessive lubrication, use an oil cloth only.

3. Reassemble the hook assembly.

General Lubrication

> **CAUTION! Turn the power switch OFF before starting any lubrication procedures to prevent damage to the machine.**
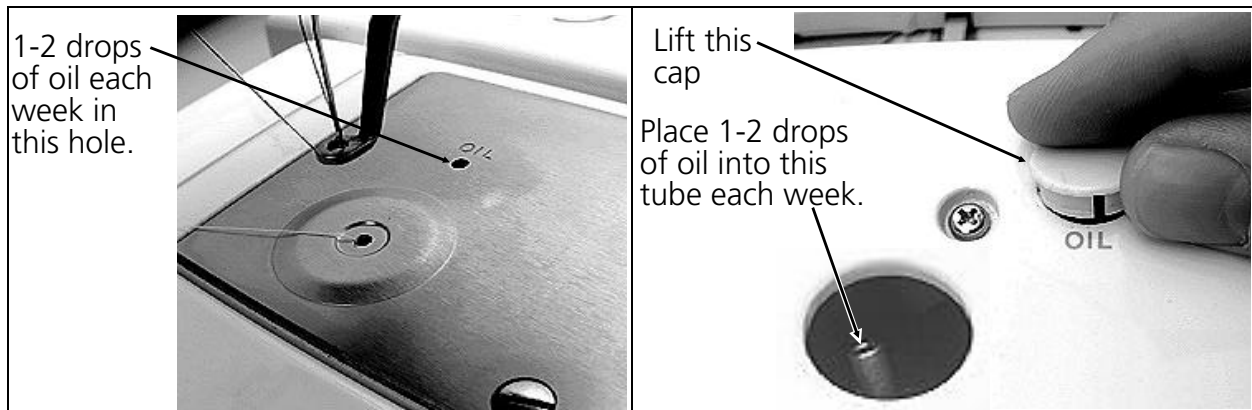

Figure 6-4   **Figure 6-5**

1. Place 1-2 drops of lubricating oil in the throat plate shown in Figure 6-4, once every week.

2. Lift the plastic cap and place 1-2 drops of lubricating oil in the tube shown in Figure 6-5 once every week. Replace the plastic cap when done.

3. Below the flywheel, remove the plastic cap and place 1-2 drops of lubricating oil in the tube shown in Figure 6-6 once every month. Replace the plastic cap when done.

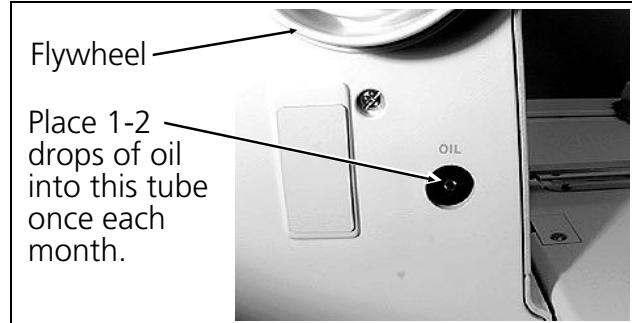4. Remove the plastic caps over oil holes #1 and #2, as shown in Figure 6-7.

5. Inside oil hole #1, place 1-2 drops of oil onto the shaft as shown in Figure 6-8, Detail "A", once each month.

6. Inside oil hole #2, place 1-2 drops of oil onto the connecting arm shaft, as shown in Figure 6-8, Detail "B", once each month. A small flashlight will help to locate the right spot.
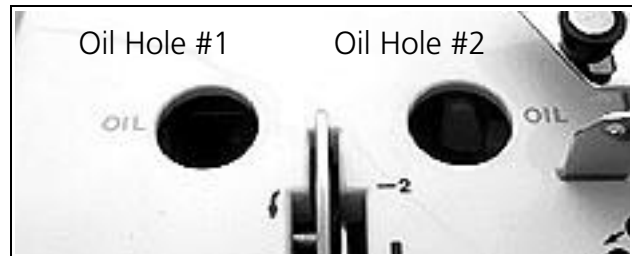
7. Inside oil hole #2, place 1-2 drops of oil onto the other end of the connecting arm shaft, as shown in Figure 6-8, Detail "C", once each month. Rotating the flywheel will help move the connecting arm into the correct position. Replace the plastic caps when done.
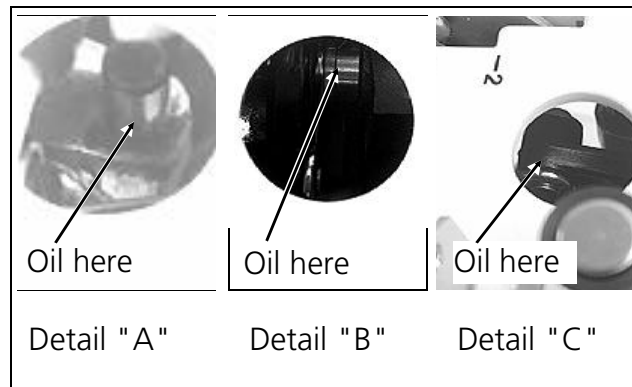
8. Open the face cover. Referring to Figure 6-9, Detail "A", place 1-2 drops of oil in the upper oil hole of the main connecting rod each month. Rotating the flywheel will help move the connecting rod into the correct position. Also place 1-2 drops of oil at the base of the spring each month.

9. Referring to Figure 6-9, Detail "B", place 1-2 drops of oil in the lower oil hole of the main connecting rod each month. Rotating the flywheel will help move the connecting rod into the correct position.

Flywheel

Place 1-2 drops of oil into this tube once each month.

Figure 6-6

Oil Hole #1   Oil Hole #2

Figure 6-7

Oil here   Oil here   Oil here

Detail "A"   Detail "B"   Detail "C"

Figure 6-8

Upper hole   Lower hole

Spring

Detail "A"   Detail "B"

Figure 6-9

Place 1-2 drops of oil at each location
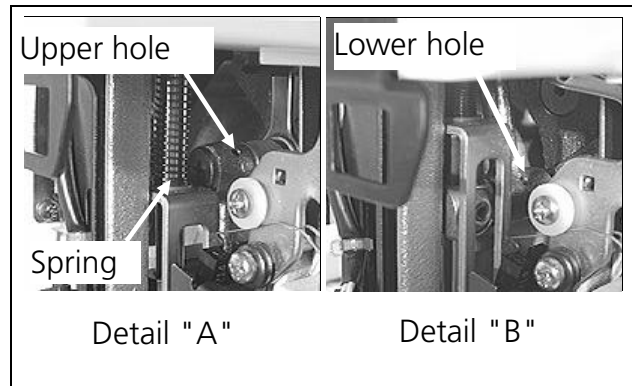
10. Place 1-2 drops of oil at both locations where the shaft passes through a bushing, as shown in Figure 6-10, once each month. Close the face cover when done.

11. After lubrication, the fabric and thread during the next embroidery operation may become contaminated with oil. To keep from contaminating actual garments, sew on a scrap piece of fabric for a short time before continuing.

Figure 6-10

NOTE: Never use any oil other than the sewing machine oil recommended by Melco (one container of oil is included with the machine).

A.Troubleshooting Guide

Thread breakage

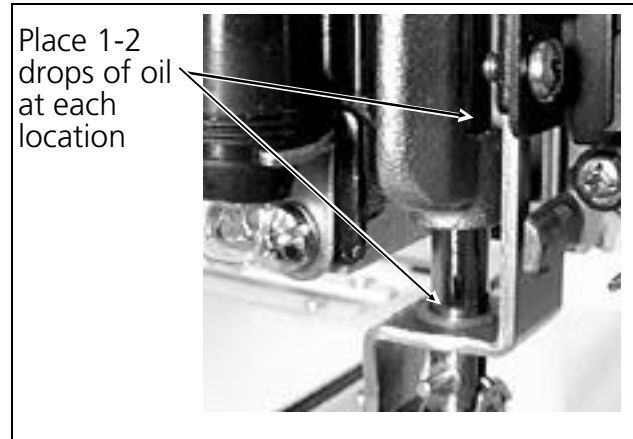| PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Design	Stitches are too short and/or too dense	Check the design for short and/or dense stitches, and edit the design to remove them
Needles	Incorrect needle for thread size being used	Replace with a compatible needle
	Needle is bent, damaged, or dull	Replace needle
	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)

Quick Reference Guide

for the

EP 1

Melco
Embroidery Systems

EP 1 QUICK REFERENCE

Start-up with a Premier Controller

1. Turn on the Premier Controller
2. Insert the SYSTEM DISK into the Premier's drive.
3. Turn on the EP 1 peripheral.
4. Remove the SYSTEM DISK and insert the lettering disk.
5. Set the following PARAMETERS before entering any lettering:
   - FONT
   - LAYOUT
   - SIZE
   - NEEDLE POSITION
   - DENSITY
6. Once the PARAMETERS are set, enter lettering from the Premier keyboard.
7. Press [READ DATA].
8. Press [RUN].
9. Press [LETTER A/C] to clear the keyboard to enter the next file.

Steps in **bold type** are critical to operation.

DESIGN MENU

1. **Press [ENTER] to display the design name.**
2. **Select designs using [UP] or [DOWN] arrows.**
3. **press [ENTER] to select the design; display shows RUN DESIGN.**
4. **Press [ENTER] to set the design queue.**
5. Press [ENTER] to display stitch count and machine speed.
6. Press [ENTER] to display the design name and embroidery speed.

7. Press [ALT]+[LEFT] arrow to show design size in the x-plane.
8. Press [ALT]+[RIGHT] arrow to show design size in the y-plane.

FRAME MENU

1. Press [ENTER].
2. Select Frame Forward by pressing [RIGHT] arrow and Frame Back by pressing [LEFT] arrow.
3. Press [DOWN] arrow to return to the design origin.
4. Press [STOP] to move forward or back (depending on which is selected) through the design.
5. Press [START] to return to the design origin.

TRACE MENU

1. **Press [ENTER].**
2. **Use the [LEFT] or [RIGHT] arrow keys to turn centering ON or OFF.**
3. **Press [DOWN] arrow to select TRACE OUTLINE.**
4. **Press [ENTER] to calculate TRACE AREA.**
5. **Press [START] to TRACE DESIGN.**
6. **Press [ENTER] to ready machine for sewing.**
7. **Press [START].**
8. **Press [START] again to begin embroidering.**

HOOP SELECTION MENU

1. Press [ENTER].
2. Use [UP] or [DOWN] arrows to select hoop size.
3. Press [ENTER].

MOVE MENU

1. Press [ENTER] 2 times.
2. Use the [LEFT] and [RIGHT] arrows to set number positions.
3. Use the [UP] or [DOWN] arrows to select appropriate numbers for move.
4. Press [START] to move hoop to new position.

To display the current hoop position, press [DOWN] arrow, then [ENTER].

RESET MENU

1. **Press [ENTER] to select SYSTEM RESET.**
2. **Press [ENTER]; display shows RESET.**
3. **Press [ENTER] to reset the machine.**
4. **Press [ENTER] to display MACHINE 01 READY.**
5. **Press [MENU] to begin the process again.**