

# **Mako 4 CTP Operator Guide**

# Mako 4 CTP Operator Guide

This guide reflects the Mako CTP system as of October 2004.

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# Preface

## Scope of this Guide

This guide provides instructions for the operating and maintaining a Mako 4 CTP platesetter. This guide describes all aspects of the operation of the system, from the loading of media, to the delivery of exposed media to an on-line processor.

The Mako 4 CTP employs a Class 3B laser. This guide contains important safety information and regulatory information about the laser. You should read this information thoroughly before operating the system or performing the procedures described in this guide.

This guide assumes that the system is already properly installed and plugged into the AC mains. Further, this manual assumes that the system has been calibrated and tested for proper operation and acceptable output. Only procedures necessary for safe and efficient operation are provided in this manual.

## Organization of this Guide

### Chapter 1: Requirements and Safety

Chapter 1 includes system operating requirements and information about laser safety.

### Chapter 2: System Operation

Chapter 2 discusses all operational features and provides complete listings of system operational messages. All of the system menus are described in detail. All of the menu items are mapped in flow diagrams.

## Chapter 3: Media Handling

Chapter 3 provides instructional information on how to load media. Guidelines for handling media are also provided.

## Chapter 4: General Maintenance and Troubleshooting

Chapter 5 covers general maintenance items that can be performed by the operator. This chapter includes troubleshooting tips and a procedure for re-locating or moving the system.

## Not Covered in this Guide

Engineering Specifications

Alignment and Calibration

Detailed Field Service Information

## Terms and Conventions Used in this Guide

|                                 |  |
|---------------------------------|--|
| Type                            | This term is an instruction to type data at the keyboard.                                  |
| <i>Italic</i> typeface          | Used to indicate the first mention of an important concept.                                |
| <b>Bold</b> typeface            | Used to highlight important details in text or illustrations and to indicate user actions. |
| <b>Bold sans-serif</b> typeface | Used to represent file names or menu options to be selected. Also refers to section names. |
| <b>Note:</b>                    | Blocks of text used to advise of related information.                                      |
| <b>IMPORTANT</b>                | Notices used to emphasize very important information.                                      |

# Requirements and Safety



## Introduction to the System

The Mako 4 CTP images printing plates. Plates are manually loaded by positioning the plate in the pin registration system and closing the pinch rollers. Imaging of the plate starts with the push of a button. When the imaging is complete, the exposed plate automatically moves onto the media transport, which feeds the plate into a customer-supplied plate processor.

All operations must be performed in a safe-light environment.

## System Requirements

### System Power and Heat Dissipation

|                         |  |
|-------------------------|--|
| <b>Power (maximum)</b>  | 90 - 264 Volts; 3 Amps; 250 Watt<br>50/60Hz, single phase. |
| <b>Heat Dissipation</b> | 850 BTU/hour   |

### Environmental Requirements

|                     |                                       |
|---------------------|---------------------------------------|
| <b>Temperature-</b> | 70 - 77 degrees F (21 - 25 degrees C) |
| <b>Humidity</b>     | 45 - 65%, non-condensing.             |

**Note: Operating the system outside of the ranges specified above may affect performance.**

# Laser Safety

## Laser Product Classification

The system is classified as a Class one (I) laser product which contains a Class 3B (IIIb) laser System. This classification means that the operator is exposed to no hazardous laser light during operation and maintenance. The laser itself, however, is a Class 3B (IIIb) laser device, and emits visible laser light which is considered hazardous by FDA published limits.

## IMPORTANT WARNING

**Use of controls or adjustments or performance of procedures other than those specified in this guide may result in hazardous laser light exposure.**

## System Laser Wavelength Identification Label

The system contains a laser that emits visible laser light. The identification label is located on the output side of the machine, above the output rollers. The label is shown in Figure 1-1.



**Figure 1-1 Media Sensitivity Label**

# Regulatory Information

## Electromagnetic Emissions

### DOC - Canada

The Canadian Department of Communications requires compliance with the Radio Interference Regulations, ICES -003.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

### EMC Directive - Europe

Complies with EN 55011: 1998

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### FCC - USA

The standards for electromagnetic emissions are Part 15, Subpart J of the FCC rules. The system was tested to Class A limits. The following statements are required by the FCC:

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

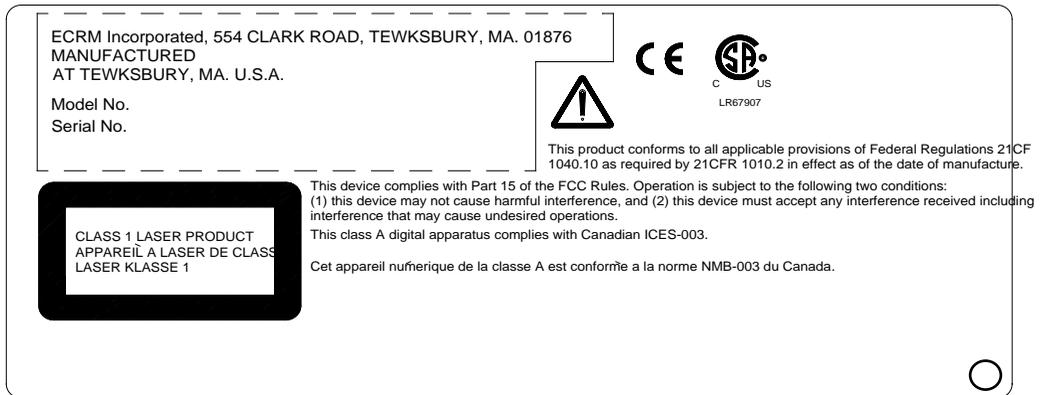
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which

case the user will be required to correct the interference at his or her own expense.

Compliance with applicable regulations depends on the use of shielded cables. It is the user who is responsible for procuring the appropriate cables.

## Identification and Certification Label (ratings plate)

The identification and certification label is attached to the back, exterior of the unit, above the pinch rollers.



**Figure 1-1 Identification and Certification Label**

# System Operation

# 2

## Introduction

A complete Mako 4 system includes a control workstation, CtServer software, a power conditioner, and a Mako 4 platesetter.

### Workstation

The control workstation connects directly to the platesetter and runs the CtServer software. Operating instructions for the workstation are provided with the workstation.

The operator makes frequent use of the workstation when running the platesetter. For that reason, the workstation should be set up and operated next to the platesetter.

### CtServer Software

CtServer is used to send jobs to the platesetter. It is also used to define the plate and pin bar requirements for jobs and communicate that information to the platesetter, which displays the information on the control panel LCD.

The use and operation of CtServer is documented in the *CtServer User's Guide*, which is delivered as a PDF document on the CtServer CD.

### Power Conditioner

The power conditioner shields the system from ac power spikes, voltage drops, and other electrical power disturbances.

# Platesetter

The platesetter outputs the imaged plates.

## Main Parts of the Platesetter

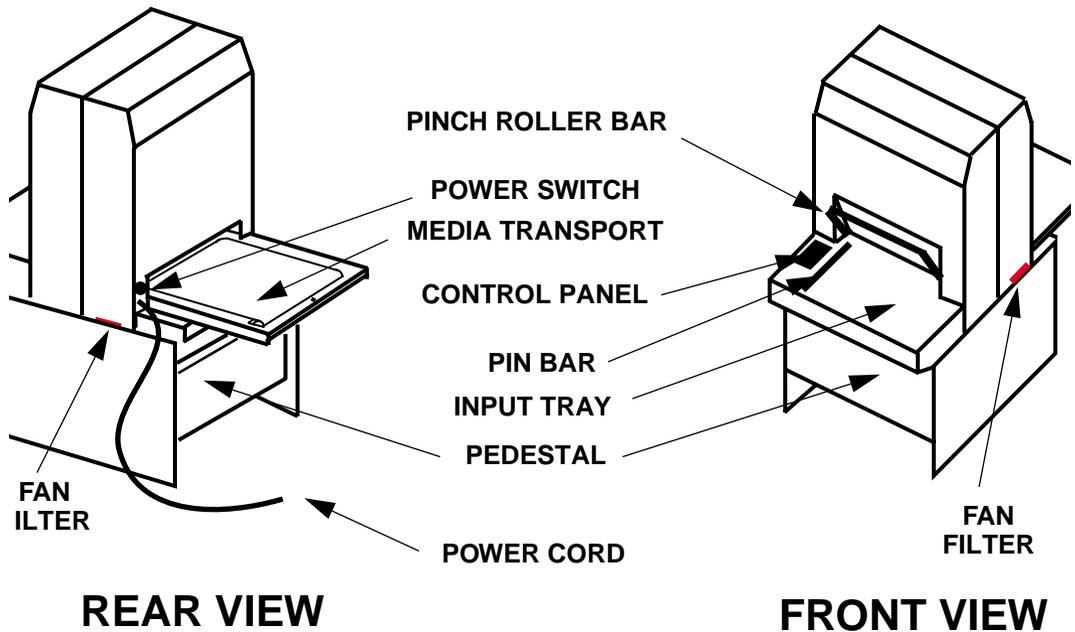


Figure 2-1 Main Parts of the Platesetter

### The Power Switch

The power switch controls ac power to the system. To start up the system, turn on the power switch located on the rear right side of the machine. Depress zero (0) to turn **OFF**, depress one (1) to turn **ON**. See Figure 1-1.

**Note:** It is recommended that the system be powered on for a 1-hour warm-up period prior to imaging.

## The Power Cord

The power cord plugs into a receptacle located just below the power switch.

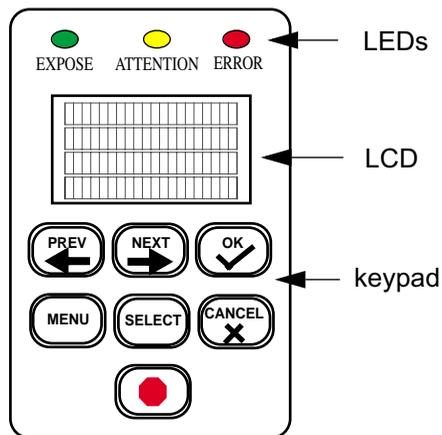
**Note:** In order for the system to work properly, the platesetter, the CtServer computer, and the computer monitor must *all* be plugged into the system power conditioner. Be advised that if the devices are not plugged into the power conditioner, damage resulting from voltage spikes, brownouts, etc., will NOT be covered by the warranty.

## The Pin Bar

The pin bar is used for plate registration. There are two types of pin bars: press notch registered and edge registered. Two pin bars come with the system as standard equipment. Additional pin bars can be ordered as an option. Exposing sets of plates with different registration notch requirements is easily accomplished by changing the pin bar.

## The Control Panel

The control panel allows you to interact with the platesetter. Commands and options are controlled through this device.



**Figure 2-2 Control Panel**

## The Input Tray

The input tray is used to position the plate for exposing. The plate is placed on the input tray and gently slid to engage the registration pins. A groove is provided in the surface of the input tray to provide a convenient place to push the plate forward. A plate cannot be loaded until the previous plate has been completed.

## The Pinch Roller Bar

The pinch roller bar is used to open and close the pinch rollers. These high precision rollers control the plate during exposing. The pinch roller bar must be up (pinch rollers open) to load a plate and down (pinch rollers closed) to expose a plate.

**Never raise the pinch roller bar while a plate is being exposed!** Doing so will cause the plate to jam inside the platesetter if you are using an edge-registered pin bar.

**Note:** The pinch roller bar must be up during the initialization process after a power on.

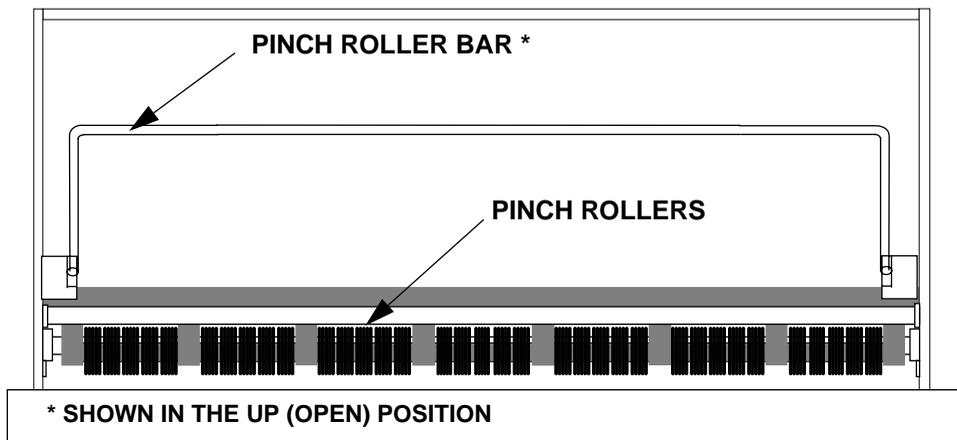


Figure 2-3 Pinch Rollers

## Fan Filters

The system uses 2 fan filters. The filters slide into slots on either side of the unit (see Figure 2-1).

## The Media Transport

The media transport provides for automated delivery of media to a customer-supplied online processor.

## The Pedestal

The pedestal is a specially designed base for the platesetter.

## Starting Up the System

Turn on the power switch located on the rear right side of the machine. Depress one (1) to turn the power **ON**. When the system completes its initialization, a message appears on the display indicating **ONLINE**. When **ONLINE** appears, the host computer can be powered on. Once the host computer is powered on and running CtServer or the RIP, and the Mako CTP is **ONLINE**, the system is ready to expose images.

**Note:** It is recommended that the system be powered on for a 1-hour warm-up period prior to imaging.

## Shutting Down the System

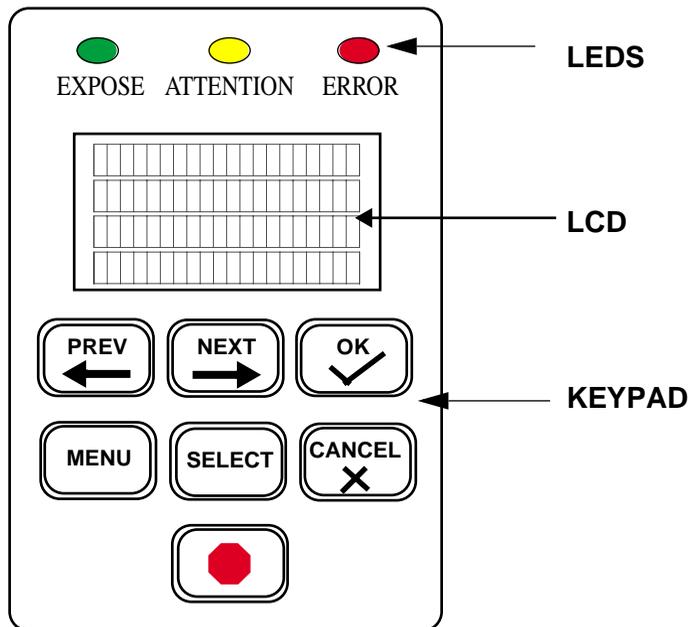
To shut down the system, turn off the power switch located on the lower right side of the machine. Depress zero (0) to turn the power **OFF**. Shut down the system **only** when the display reads **ONLINE**, and the second line is blank. (No operational message visible). Once the machine is turned off, the host computer will have to be rebooted after the machine is turned back on in order to establish communication.

# Using the Control Panel

When you first install the system, you must review and set all the menu parameters. Advance through the menu items and verify or change them as needed. When the menu parameters are completed, the system is ready for use.

## Accessing Menus

Access menus from the system control panel. Enter the menu sub-system by pressing **MENU** from the **ONLINE** state.



**Figure 2-4 Control Panel**

## Keys



Moves you backward within the menu or moves the cursor backward within the current menu item.



Enter or exit the menu sub-system by pressing **MENU** from the **ONLINE** state.



Moves you forward within the menu or moves the cursor forward within the current menu item.



Increments the numeric digit under which the cursor is positioned or scrolls through the options available for the current menu item.



Start exposing the loaded plate. Also, from anywhere in a numeric field, causes the next menu item to be displayed. In the last item of a menu, causes a return to the first item of the menu.



Cancels a pending “load plate” request, but does not stop a job that is in progress.



The Emergency stop button. This button will stop all moving parts of the platesetter.

## LEDs



Green LED that indicates the plate is being exposed when it is flashing. Additionally, indicates registration pin contact when loading a plate.



Yellow LED that indicates there is a condition that requires operator attention. The LCD display indicates what needs to be done.



Red LED that indicates a platesetter error condition. The LCD display indicates what the error is.

# Operator Menus

There are three operator menu options:

- User Preference Menu (See page 9).
- User Maintenance Menu (See page 12.)
- Test Pattern Menu (See page 14.)

## Menu Selection

Follow these steps to set the parameters in any menu.

Step 1. Press MENU to enter the user menu system.

Step 2. Press SELECT until the sub-menu you want displays on the LCD.

Step 3. Press NEXT to enter the selected sub-menu.

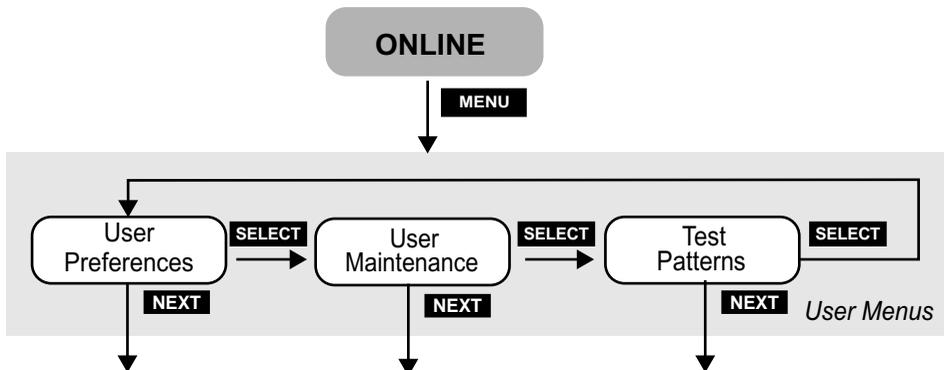
Step 4. Set the parameter to what you want.

Step 5. Press SELECT to change the value.

Step 6. Press NEXT to go to the next parameter until you have completed your selections.

Step 7. Repeat steps 4 and 5 until all changes are made.

Step 8. Press MENU to exit the user menu system.



**Figure 2-5 User Menu Structure**

# User Preferences Menu

## UNITS OF MEASURE

OPTIONS            **ENGLISH** (inches) or **METRIC** (millimeters)

The selected units of measure apply to all numeric measurement values in various menus.

## AUDIO ALERTS

OPTIONS            **ENABLED** or **DISABLED**

This menu item allows you to disable or to enable the audible alarms for the following conditions:

Error conditions, Power-up, Image complete

## HORIZONTAL MAGNIFICATION

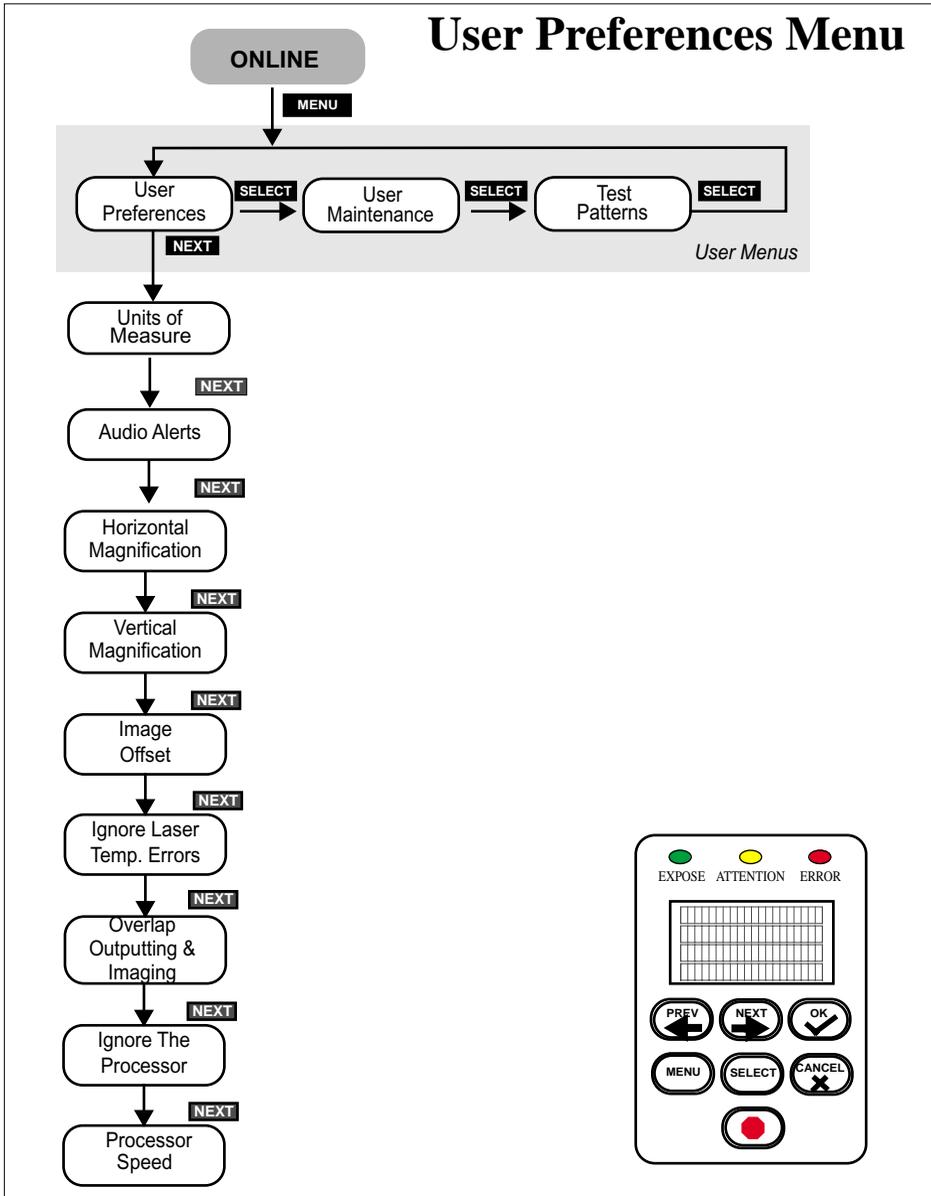
LIMITS            **85.00% to 110.00%**

Sets the size of the image in the horizontal direction from 85% to 110% of nominal.

## VERTICAL MAGNIFICATION

LIMITS            **85.00% to 110.00%**

Sets the size of the image in the vertical direction from 85% to 110% of nominal.



**Figure 2-6 User Preferences Menu Map**

## IMAGE OFFSET

LIMITS            **-0.300” to +0.300” (-7.62mm to +7.62mm)**

The image may be shifted to the left with a negative (-) value, or to the right with a positive (+) value by up to 0.300 inches. Press **PREV** to access the (+) and (-) sign.

## IGNORE LASER TEMPERATURE ERRORS

OPTIONS            **YES** or **NO**

If the laser exceeds its target operating temperature an error will be reported. It is recommended that this problem be fixed. However, if critical jobs need to be completed, it is possible to operate the laser at a higher temperature. This operation is enabled by ignoring the laser temperature errors.

**Note: Operating the laser at a higher temperature shortens the life of the laser.**

## OVERLAP OUTPUTTING AND IMAGING

OPTIONS            **YES** or **NO**

If this option is set “YES,” an operator can begin imaging another plate while the previous plate is feeding into the processor.

## IGNORE THE PROCESSOR

OPTIONS            **YES** or **NO**

“YES” disables the media transport conveyor and effectively makes the transport function as an output tray.

**Note: This feature is useful when the online processor is down for maintenance or repairs.**

## PROCESSOR SPEED

LIMITS            **9.5” per minute to 77.9” (241 mm/min. to 1980 mm)**

Should be set to match the speed of the online processor.

# User Maintenance Menu

## PROGRAM VERSIONS

This user maintenance option displays version numbers of the installed software and firmware. The versions will be displayed as:

```
VERSIONS  
JP0020 n.n  
JA1126 n  
"NEXT" TO CONTINUE
```

Where JP0020 n.n is the part number and revision level of the controller software, and JA1126 n is the part number and revision level of the controller firmware.

## RUN TRANSPORT

This user maintenance option will run the media transport until the STOP button is pressed. This function is used to clean the transport.

## RUN MEDIA ROLLERS

This user maintenance option will run the media rollers until the STOP button is pressed. This function is used to clean the rollers.

## DISPLAY ERROR LOG

This user maintenance option presents system faults (up to a maximum of 20 faults) in chronological order. **TIME** is the elapsed time since the latest power on. **SESSION #** is the total number of times the system has been turned on. **DEVICE NAME** identifies the system component that failed. **ERROR** is an indication of the nature of the fault.

## DISPLAY LASER LOG

This user maintenance option presents status information about the system laser. The information is useful to service personnel,

who sometime request the information over the phone during service calls.

## User Maintenance Menu

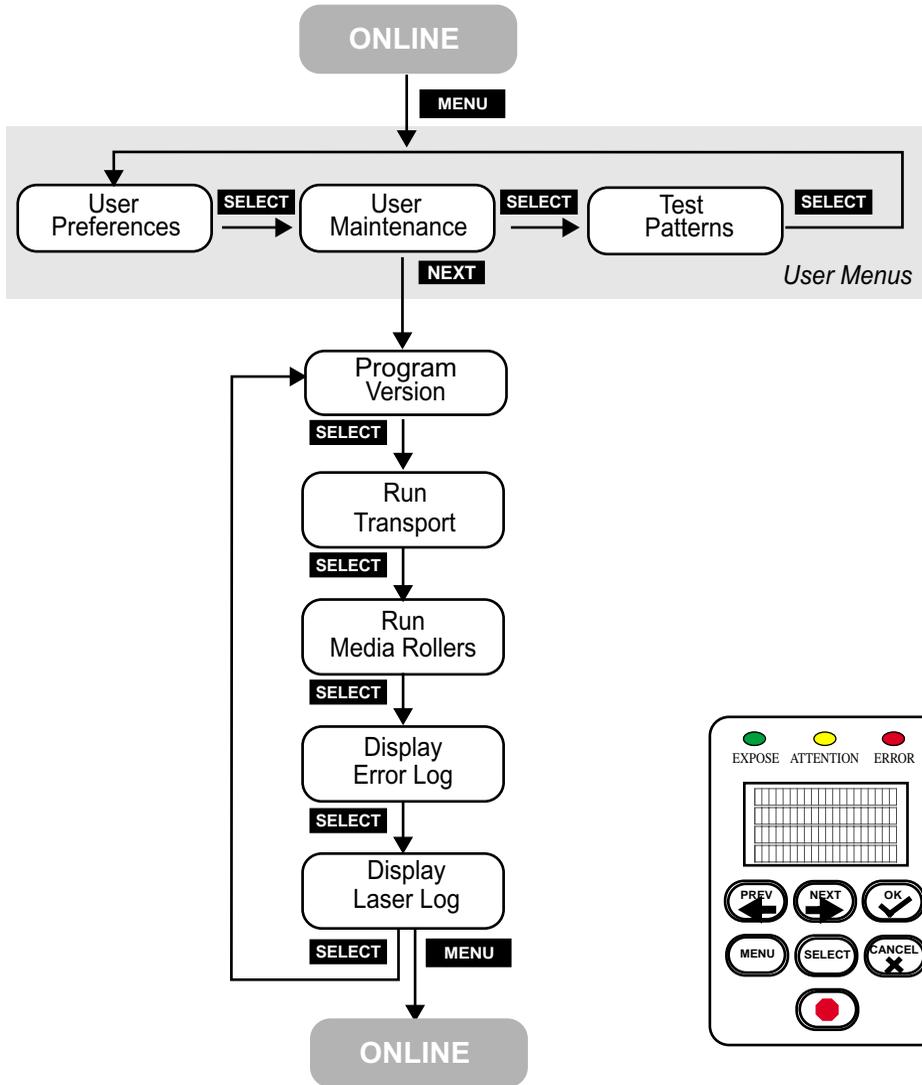


Figure 2-7 User Maintenance Menu Map

# Test Patterns Menu

The test pattern menu is used to select and run one of the pre programmed test patterns. (See the “TEST PATTERN SELECTIONS” sidebar in Figure 2-2-8 on page 15 for a list of the test patterns).

The test pattern menu configuration options are summarized below.

**Note: Some of options listed below are test- pattern specific.**

## TEST PATTERN MODE

OPTIONS            Enabled or Disabled

This option moves the system in and out of test pattern mode.

## TEST PATTERN TYPE

OPTIONS            List of Test Patterns

Test Patterns are described fully in the system Reference guide and are for the use of qualified technicians only.

## REVERSE IMAGE POLARITY

OPTIONS            YES or NO

This option will reverse the test pattern images. YES will expose the background of the plate. NO will expose the image area.

## BAR WIDTH

OPTIONS            1 to **999999** Pixels

This parameter specifies the width of the lines in the Bar Test Patterns.

## BAR SPACING

OPTIONS            1 to **999999** Pixels

This parameter specifies the width of the spaces between the lines in the Bar Test Patterns.

# Test Patterns

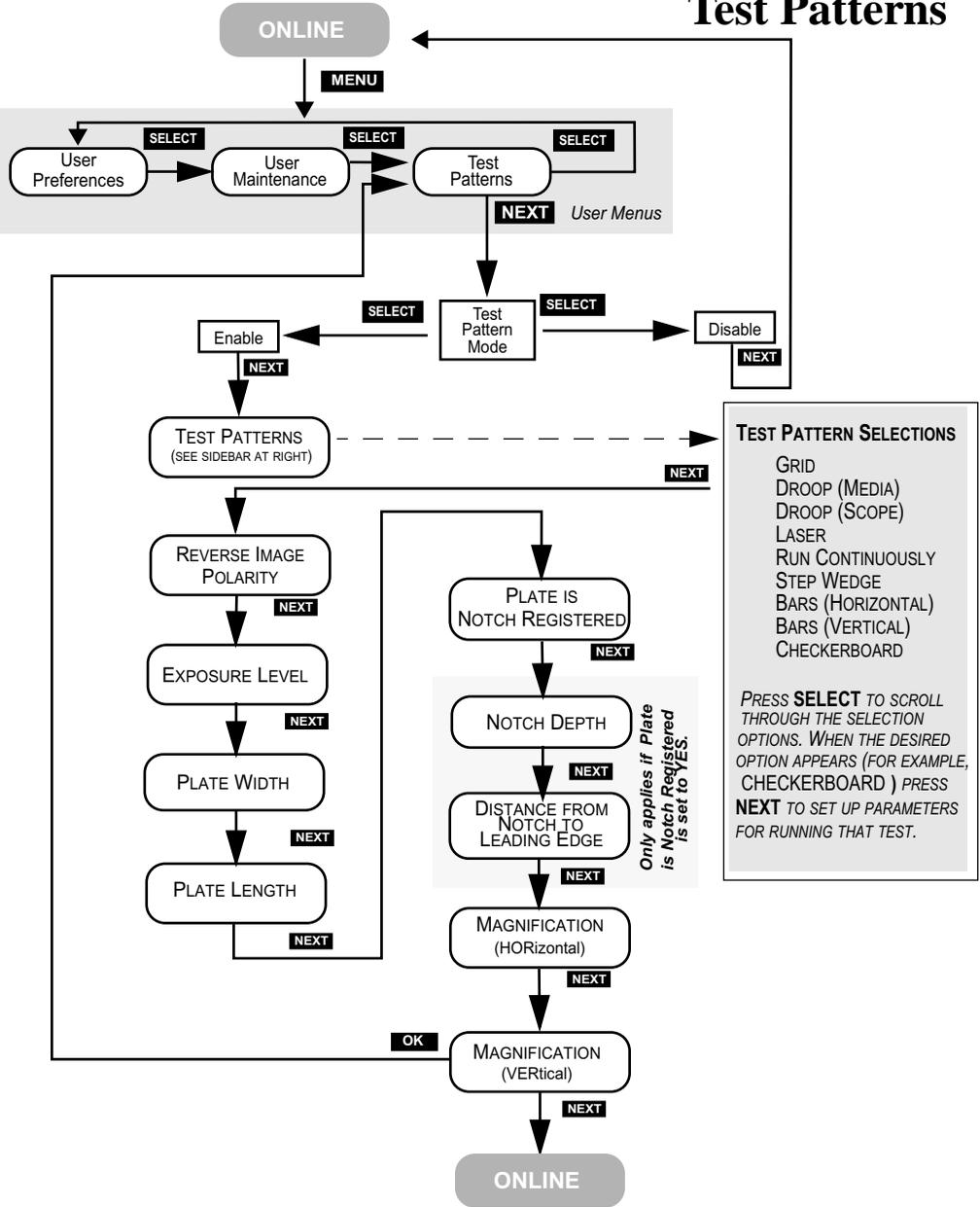


Figure 2-8 Typical Test Patterns Menu Map (Checkerboard example)

## **IMAGE LENGTH**

**OPTIONS**            **0.027” to 39.330” or 2 mm to 999 mm**

This parameter specifies the length of the test pattern to be recorded.

## **IMAGE OFFSET (VERTICAL)**

**OPTIONS**            **0.0000” to 39.330” or 0 mm to 999 mm**

This parameter specifies the distance from the leading edge of the plate to the first line of the image.

## **HORIZONTAL RESOLUTION**

**OPTIONS**            **(dpi) 1200, 1270, 1800, 2400, 2540,  
3048 and 3556.**

**(dpmm) 47.2, 50.0, 70.8, 94.5, 100.0,  
120.0, 140.0**

By picking any of the optional values, you set the horizontal resolution to that value. Horizontal Resolution is not displayed if a GRID test pattern is selected.

**Note: Resolution is model dependent. Your options may differ from those listed above.**

## **VERTICAL RESOLUTION**

**OPTIONS**            **(dpi) 1200, 1270, 1800, 2400, 2540,  
3048 and 3556.**

**(dpmm) 47.2, 50.0, 70.8, 94.5, 100.0,  
120.0, 140.0**

By picking any of the optional values, you set the vertical resolution to that value. Vertical Resolution is not displayed if a GRID test pattern is selected.

**Note: Resolution is model dependent. Your options may differ from those listed above.**

## **PLATE WIDTH**

**OPTIONS            9.922" to 25.472" or 253.8 mm to 646.9 mm**

By picking a value, you set the plate width for test patterns.

## **PLATE LENGTH**

**OPTIONS            9.992" to 36.574" or 253.8 mm to 928.9 mm**

By picking a value, you set the plate length for test patterns.

## **PLATE IS NOTCH REGISTERED**

**OPTIONS            YES or NO**

By picking a selection, you set the alignment to be used for test patterns. Punched plates are generally notch registered as opposed to edge registered.

## **NOTCH DEPTH**

**OPTIONS            0.000" to 1.000" or 00.0 mm to 25.4 mm**

By picking a value, you set the notch depth for test patterns.

## **DISTANCE FROM NOTCH TO LEADING EDGE**

**OPTIONS            2.125" to 36.574" or 53.9 mm to 928.9 mm**

This options specifies the distance from the leading edge of the plate to the center of the notch that is closest to the leading edge. This parameter is only for notch-registered plates.

## **EXPOSURE LEVEL**

**LIMITS             000 to 255**

This menu entry sets the exposure level at the media. The higher the number, the higher the exposure.

## **HORIZONTAL MAGNIFICATION**

**LIMITS                    85.00% to 110.00%**

Sets the size of the image in the horizontal direction from 85% to 110% of nominal.

## **VERTICAL MAGNIFICATION**

**LIMITS                    85.00% to 110.00%**

Sets the size of the image in the vertical direction from 85% to 110% of nominal.

# Running a Step Wedge Test Pattern

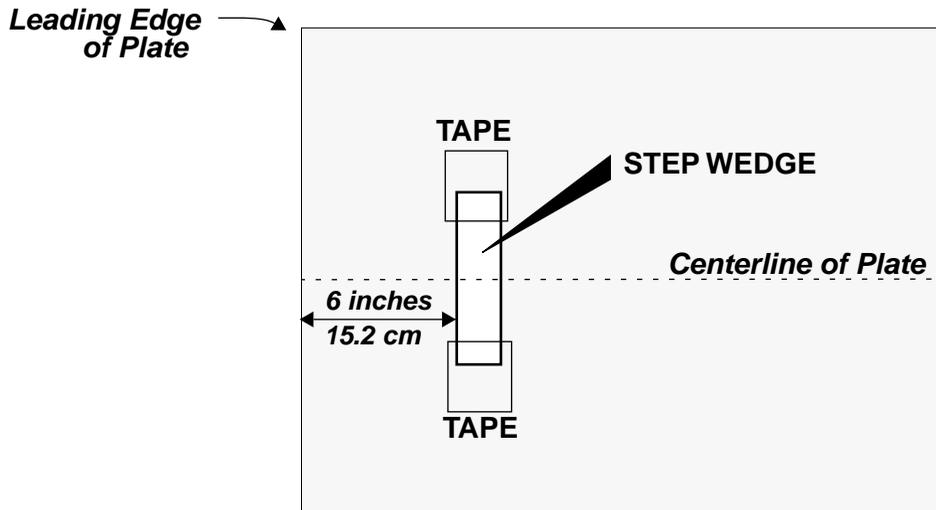
The step wedge test pattern is used to set the proper exposure for a polymer plate. Here s how to run step wedge test plate.

## Preparing to Run the Step Wedge Test Pattern

Step 1. Under safelight conditions, place a test plate on the input shelf.

Step 2. Using the plate manufacturer s recommended step wedge, center the step wedge on the plate 6 inches (15.2 cm) back from the leading edge, as shown below.

Be sure to use two pieces of tape. Make sure the emulsion side of the step wedge faces the emulsion side of the plate, and that there are no air gaps between the wedge and the plate.



**Figure 2-9 Placement of Step Wedge on Test Plate**

## Running the Step Wedge Test

Step 1. At the control panel, press MENU and then repeatedly press SELECT until the Test Patterns Menu displays.

Step 2. Press NEXT, and then press SELECT to Enable.

- Step 3. Press NEXT, and then repeatedly press SELECT until the Step Wedge pattern displays. Then, press NEXT again.
- Step 4. Set Horizontal resolution to the required resolution.
- Step 5. Set Vertical resolution to the required resolution.
- Step 6. Set Exposure to the value you wish to expose the wedge (range is 0-255.)
- Step 7. Set Plate Width to the plate width being used.
- Step 8. Set Plate Length to the plate length being used.
- Step 9. Set Magnification Horizontal to the magnification being used (normally 100%).
- Step 10. Set Magnification Vertical to the magnification being used (normally 100%).
- Step 11. Select MENU.
- Step 12. Press the SELECT key to begin exposure.

The system exposes the first 8 inches of the plate with 100% laser light at the exposure setting selected.

After exposure, the plate moves into the output tray onto the transport belt where it advances until the leading edge of the plate is detected by the transport exit sensor. The transport then stops, the warning light flashes, and a prompt to remove the step wedge displays on the control panel.

- Step 13. Making sure to maintain safelight conditions, remove the taped-on step wedge.
- Step 14. At the control panel, press OK.
- Step 15. If the system has the optional media transport, the transport will start again and feed the plate into the processor.

# Status Messages

During operation, the system displays information that indicates the current condition of the system and of any jobs in process. The status messages appear on the control display.

**PREPARING TO EXPOSE** - The system is starting the spinner and moving the plate to the recording start position.

**EXPOSING IMAGE** - The system is now recording an image.

**EJECTING PLATE** - Exposing is complete and the plate is being ejected onto the plate transport.

**MOVING TO PROCESSOR** - Plate has been ejected from the rollers and is moving to the processor.

**FEEDING PROCESSOR** - Plate is on the transport and the leading edge of the plate is moving into the processor.

**EJECTING PLATE** - Exposing is complete and the plate is being ejected onto the plate transport.

**ONLINE** - The normal operating mode for the system.

**STARTING SPINNER** - This message is accompanied by a progress bar when preparing to start an image and the spinner motor is stopped.

**TEST PATTERNS** - Test Patterns mode has been selected in the Test Patterns Menu and the system is ready to produce a test pattern. This mode of operation should be used by qualified service technicians only.

**INITIALIZING** - The system is performing initialization functions prior to going online.

**Note: If the Pinch Roller bar is down, you will be instructed to raise it during initialization.**

**WAITING FOR LASER** - The system is waiting for the laser to reach operational temperature.

# Error Messages

During operation, error conditions may occur that require your intervention. These messages will appear on the system display panel and the error indicator LED will light. Additionally, if enabled, the alarm will also sound.

## Operator-Correctable Errors

The error messages that you can clear are listed below.

**COVERS ARE NOT SECURE** - This error is displayed when one of the system covers are not secure. Locate and close the open cover, and then

**OPERATOR ABORT** - This error is displayed when the operator aborts a job by using the 'stop' button on the control panel.

**LASER IS OVER TEMPERATURE** - Alerts you that the laser is over temperature. If you override this error in the User Preferences Menu, the laser life will be shortened.

**IMAGE OFFSET ERROR, INCOMPATIBLE PARAMETERS** - This error is displayed when the combination margin, resolution, magnification, media width, and image offset result in a condition where the image starts before the laser can activate. If you should encounter this error, minor adjustments to the above parameters, to push the image to the center of the plate should resolve the problem

**PINCH LEVER OPENED WHILE MOVING MEDIA** - This error is displayed if the pinch lever bar is raised while a plate is moving through the machine.

## Correcting Errors

Step 1. If a plate is in the machine when the error occurs, remove the plate as explained in *Maintenance and Troubleshooting*.

Step 2. Correct the condition that caused the error.

Step 3. Press the control panel OK button.

Step 4. Resume normal operation.

## System Configuration Display

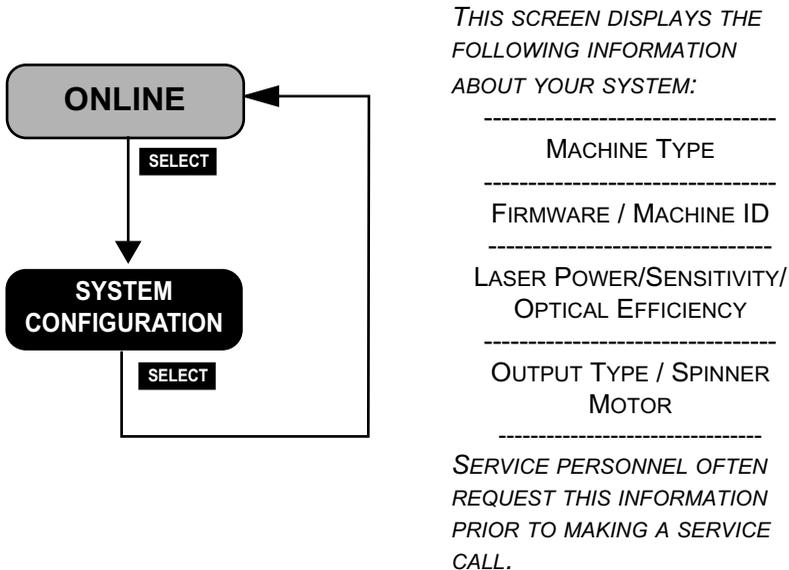
Should you ever call for service, your service provider may ask you to relate the information that appears on the System Configuration display. To view the display:

Step 1. Place the system in ONLINE mode.

Step 2. Press the Select key. The System Configuration Screen displays.

Step 3. Convey the information on the screen to your service provider.

Step 4. Press the select key to clear the display and return to ONLINE mode.



**Figure 2-10 System Configuration Display**



# Media Handling

# 3

## Introduction

This chapter explains how to load and unload media, and install and remove a pin bar.

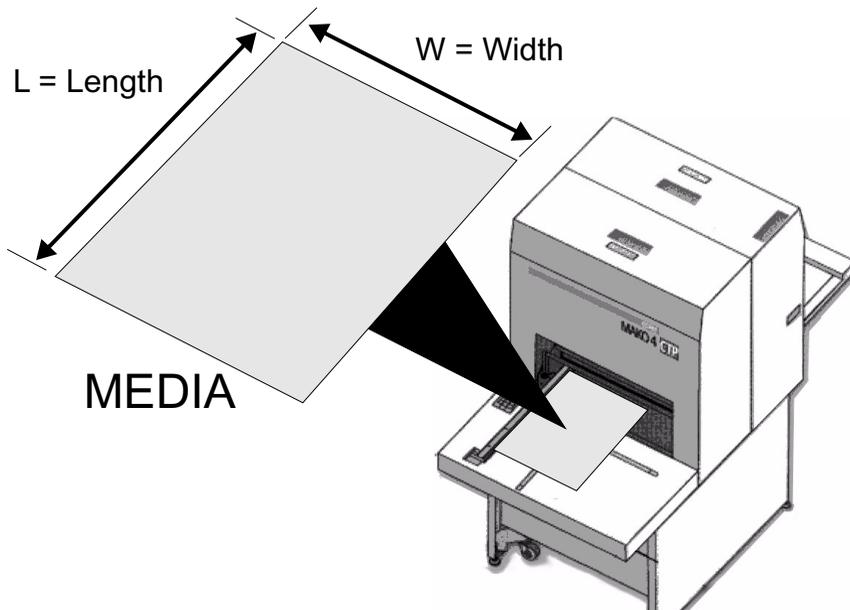
## Media

**Media thicknesses -** 5.5 mil (0.14mm), 6 mil (0.15 mm),  
8 mil (0.20mm), 10 mil (0.25mm),  
12 mil (0.30mm)

**Media size, minimum** 10"W x 13"L (254mm x 330mm),

**Media size, maximum** 25.4"W x 36.5"L (645 x 927mm)

**Configuration -** Prepunched Press Grooves or Edge Register



**Figure 3-1 Media Orientation**

## Media Handling

This product is designed to be operated in a safe-light room.

- See plate manufacturer's specification for safe-light recommendations
- Safe working time varies with manufacturer

The procedure for installing the pin bar and loading the media is covered in this chapter, as well as removing the pin bar and media. This chapter is divided into the following sections.

- Installing and Removing the Pin Bar
- Loading Media
- Removing Media from the Output Tray

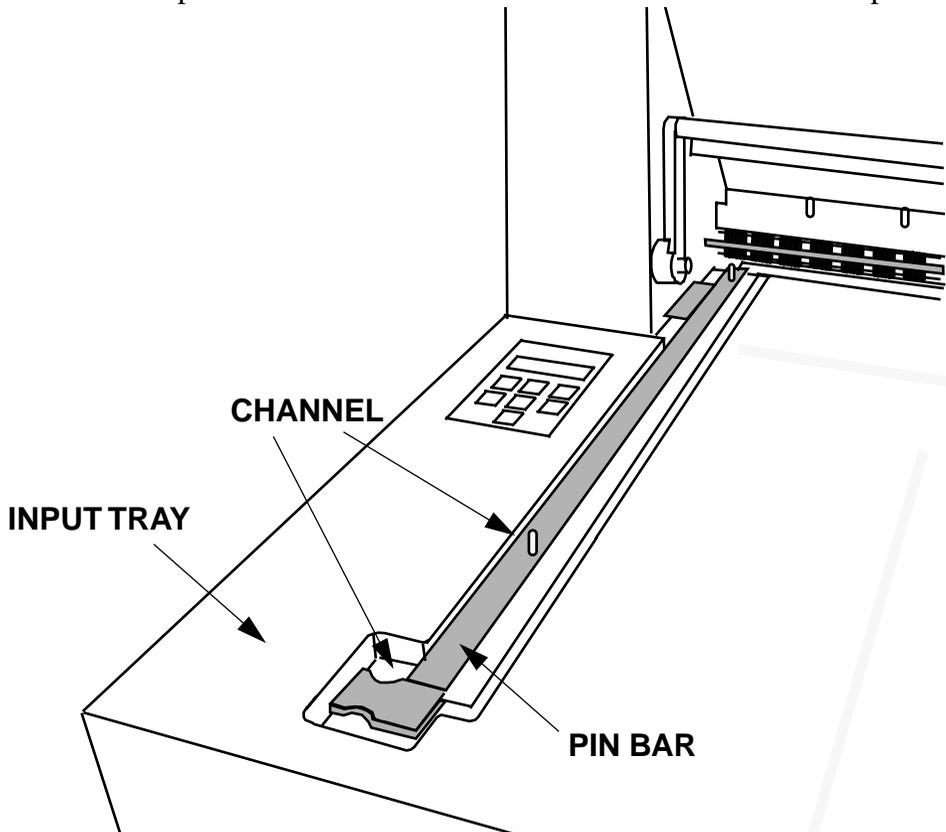
Mako 4 CTP does not have the ability to “know” which pin bar is loaded. It is up to you to make sure the pin bar is appropriate for the plate that is being used.

# Installing and Removing the Pin Bar

The pin bar provides alignment points that insure accurate plate registration.

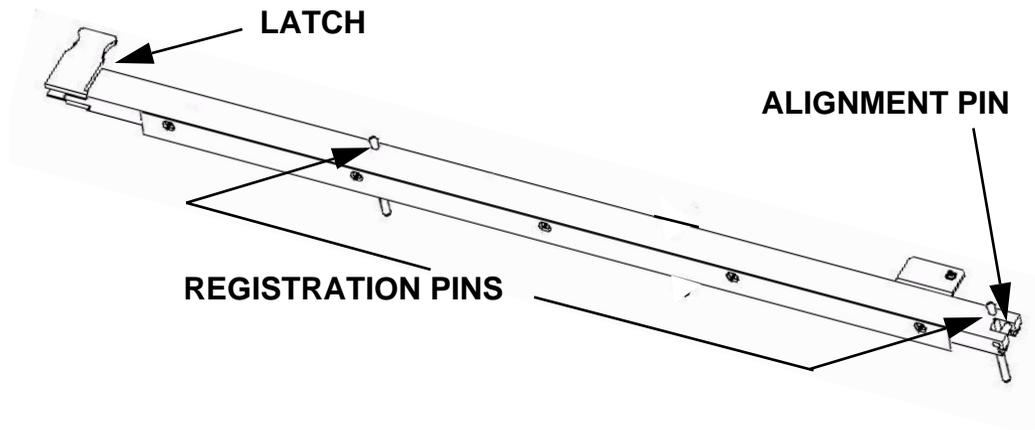
There are two types of pin bars: notch-registered and edge-registered. Notch-registered pin bars are for registering plates that are punched with a specific notch pattern. This pattern matches up with the pins in both the Mako CTP and the press clamp. The edge-registered pin bar is used to edge register a plate. Typically, notch registration provides more consistent registration than edge registration.

The pin bar is located in a channel on the left side of the input tray.



**Figure 3-2 Pin Bar Location**

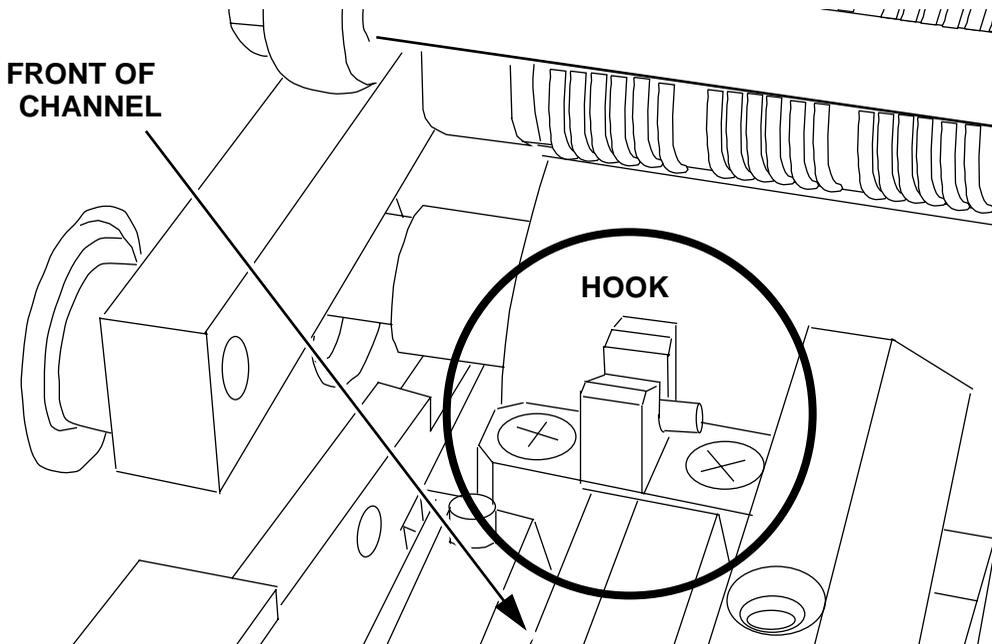
Figure 3-3 shows the main parts of the pin bar. The alignment pin helps keep the pin bar in proper alignment with the rest of the media handling system. The latch at the other end of the pin bar locks the bar in place in the channel.



**Figure 3-3 Pin Bar**

## **Installing a Pin Bar**

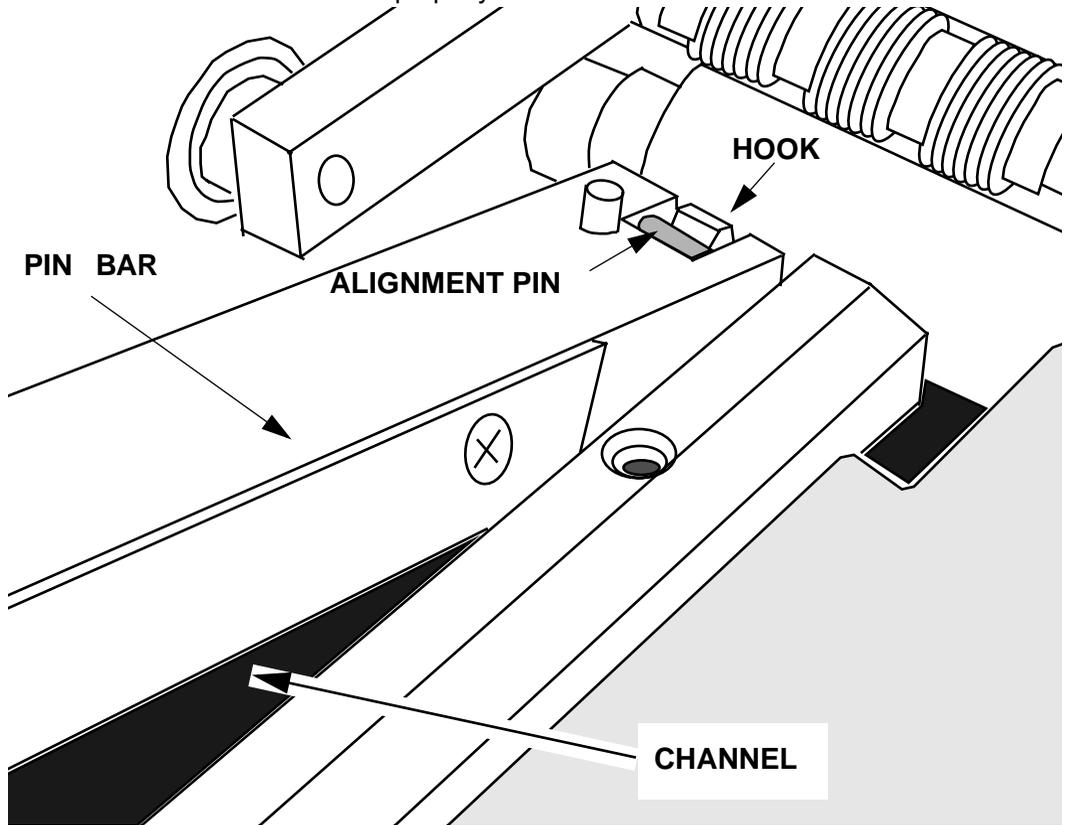
- Step 1. If necessary, remove the existing pin bar as explained in Removing a Pin Bar on page 6.
- Step 2. Hold the new pin bar with the latch end in your left hand and the alignment pin end in your right hand
- Step 3. Look for the small hook at the front of the channel (see figure below).



**Figure 3-4 Alignment Pin Hook**

- Step 4. Position the pin bar over the channel with the alignment-pin end at the front of the channel and the latch at the back of the channel.
- Step 5. Holding the pin bar at a 45 degree angle, snap the pin bar alignment pin into the hook, as shown in Figure 3-5.
- Step 6. Press down on the alignment pin so that it stays in the hook; then, lower the other end the pin bar into the channel until the latch snaps and locks the bar in place.

Step 7. Firmly press the center of the pin bar down to insure that it is seated properly.



**Figure 3-5 Setting the Alignment Pin in the Hook**

## **Removing a Pin Bar**

- Step 1. Push the pin bar latch forward to disengage the latch.
- Step 2. Lift the pin bar up by the latch until the bar is at about a 45 degree angle.
- Step 3. At the front of the pin bar, disengage the alignment pin from the hook in the channel.
- Step 4. Carefully remove the pin bar and store it in a safe place.

# Loading Media

The host computer will request a pin bar and plate to be loaded, and the Mako CTP will prompt you to load the plate. One of the following prompts appears on the control panel LCD:

```
LOAD A PLATE  
<plate name>  
<bar name>
```

This message indicates that the next plate to be imaged is the same as the preceding plate. **It is a prompt for you to load the same kind of plate that was just imaged.**

```
LOAD A NEW PLATE  
<plate name>  
<bar name>
```

This message indicates that the next plate to be imaged is different than previous plate, but that it uses the same pin bar. **It is a prompt for you to load the new (different) type plate.**

```
VERIFY BAR AND LOAD  
<plate name>  
<bar name>
```

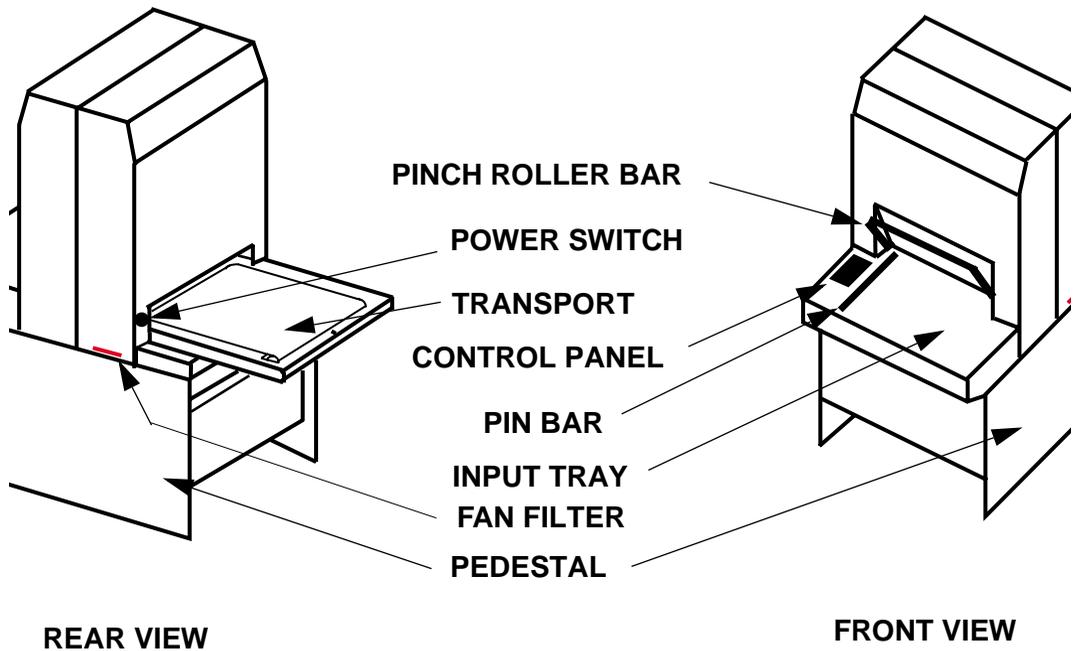
The meaning of this message depends on when it appears during the CtServer (host computer) session.

When the session is first opened, **it is a prompt for you to ensure that the correct pin bar is installed before loading the first plate, and then to load the plate.**

Subsequently in the session, the message indicates that the next plate to be imaged is different than the preceding plate AND requires a different pin bar. **Thus, it is a prompt for you to change the pin bar and load the new (different) plate.**

The technique used for loading plates is a key in achieving good

plate registration. Always handle and position the plate gently and carefully. Thin plates are especially susceptible to dings and dents.



**Figure 3-6 External View of the System**

## **Loading Edge-registered plates**

Step 1. Face the front of the recorder.

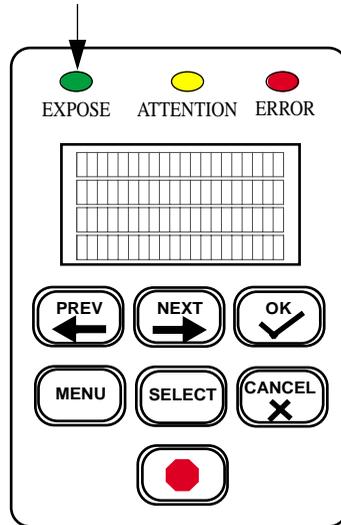
Step 2. Raise the pinch roller bar to open the pinch rollers.

Be sure the pinch roller is fully raised. **If it is not, the green Expose LED will not light.**

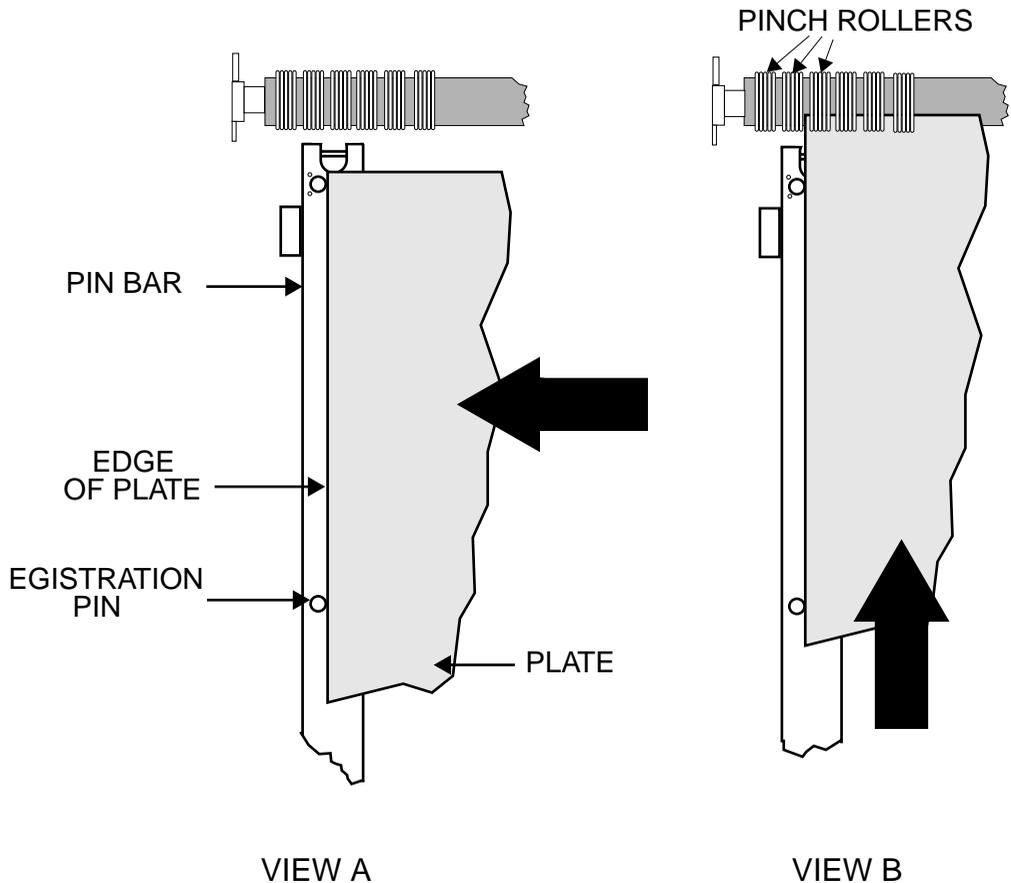
Step 3. Verify the requested pin bar is loaded. If it is not, change the pin bar.

Step 4. Place the requested plate on the input tray.

## GREEN LED



Step 5. Push the plate to the left so that the edge of the plate contacts the registration pins in the pin bar. (See View A, Figure 3-7).



**Figure 3-7 Loading Edge-registered Plates**

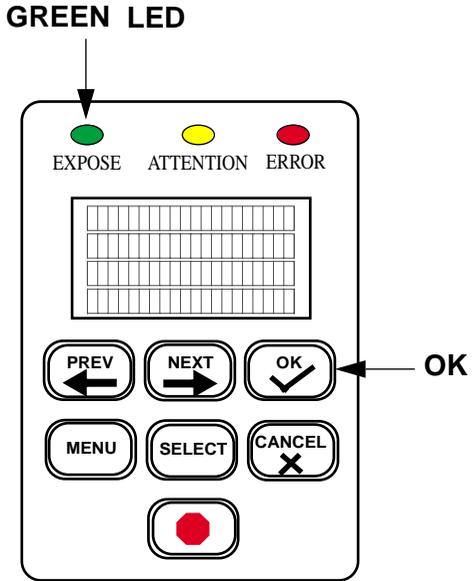
Step 6. Push the plate forward (View B) into the recorder until it comes into contact with a third registration pin that is inside the recorder.

Step 7. Gently adjust the position of the plate as needed to get the green Expose LED to come on and stay on. This shows the plate is maintaining contact with all 3 registration pins (the 2 on the pin bar, plus the 1 inside the recorder).

If the LED goes out, you have lost pin contact. Move the plate out and to the right slightly, and then back in and to the left until the green LED stays on. Be careful to not apply so much pressure to the plate that the registration pins dent the plate. Use one finger/thumb to apply minimal pressure to the center of the plate.

**Note: If the green LED is not staying illuminated, the pin bar may not be fully seated. Remove and reinstall the pin bar, following the instructions above.**

Step 8. Holding the plate in position, lower the pinch roller bar . The green light will remain on if pin contact has been maintained and the recorder will prompt for the OK button to be pressed to start imaging.



**Note: If the green LED does not stay illuminated, open the pinch roller bar and go back to Step 5.**

Step 9. Press the OK button. Imaging will begin.

**CAUTION - Never raise the pinch roller bar while a plate is being exposed. Doing so will cause the plate to jam inside the platesetter. For details, refer to “Clearing Misfeeds” in the troubleshooting chapter.**

Step 10. After the plate is imaged, it will be automatically transported from the Mako to the on-line processor via the media transport.

## Loading Notch-registered plates

Step 1. Face the input tray.

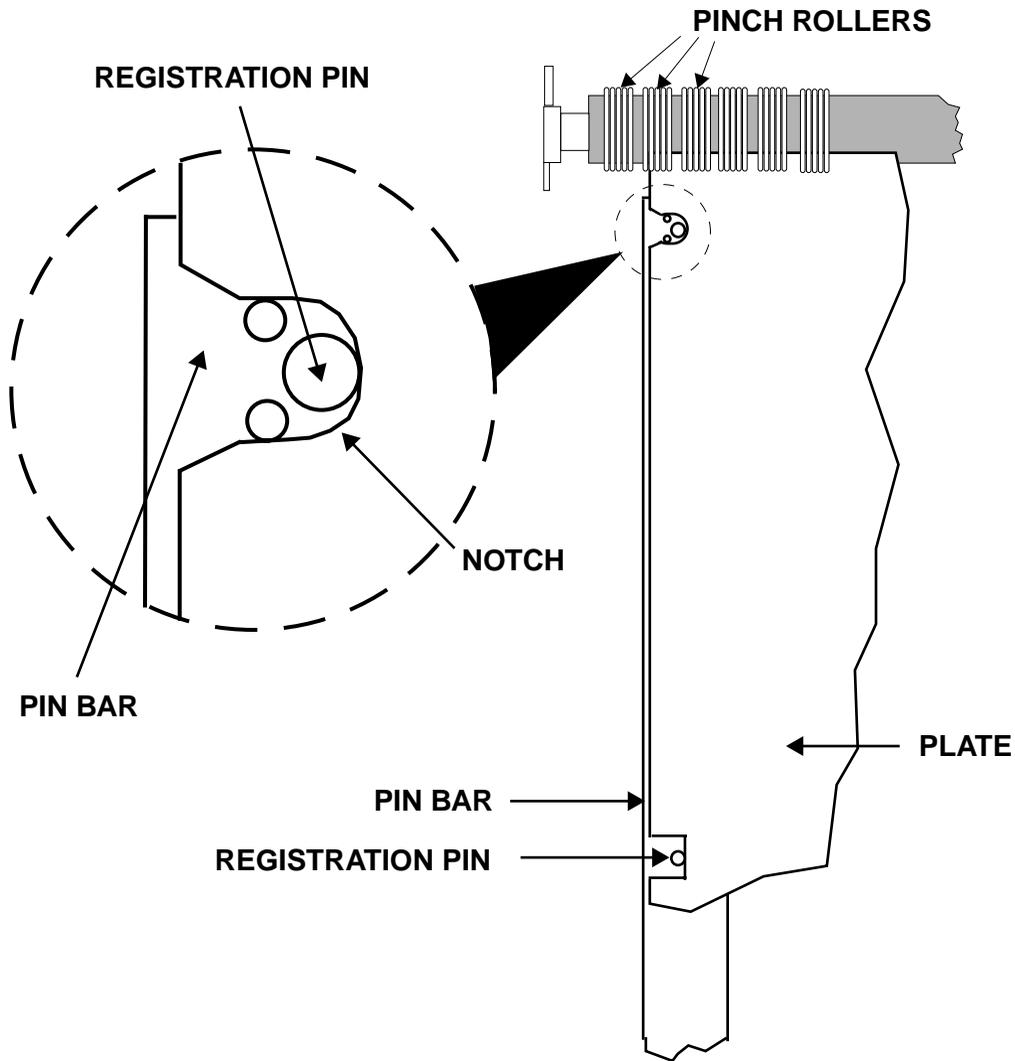
Step 2. Raise the pinch roller bar to open the pinch rollers.

Be sure the pinch roller is fully raised. **If it is not, the green Expose LED will not light.**

Step 3. Verify the requested pin bar is loaded. If it is not, change the pin bar.

Step 4. Place the requested plate on the input tray.

Step 5. Position the plate so that both notches in the plate fully engage the two registration pins on the pin bar (see Figure 3-8).



**Figure 3-8 Loading Notch-registered Plates.**

Step 6. Watch for the green Expose LED to come on and stay on. This shows the plate is maintaining contact with the pins.

If the LED goes out, you have lost pin contact. Move the plate **slightly** away from the registration pins and then back against

them again until the green LED stays on. Be careful to not apply so much pressure to the plate that the registration pins dent the plate. Use one finger/thumb to apply minimal pressure to the center of the plate while lifting the plate slightly.

**Note: If the green LED is not staying illuminated, the pin bar may not be fully seated. Remove and reinstall the pin bar, following the instructions above.**

Step 7. Holding the plate in position, lower the pinch roller bar. The green light will remain on if pin contact has been maintained and the recorder will prompt for the OK button to be pressed to start imaging.

**Note: If the green LED does not stay illuminated, open the pinch roller bar and go back to Step 5.**

Step 8. Press the OK button. The plate will be backed up to properly position the leading edge for exposing.

Step 9. After the plate is imaged, it will automatically be transported out of the platesetter and into the on-line processor.

# Maintenance and Troubleshooting

## 4

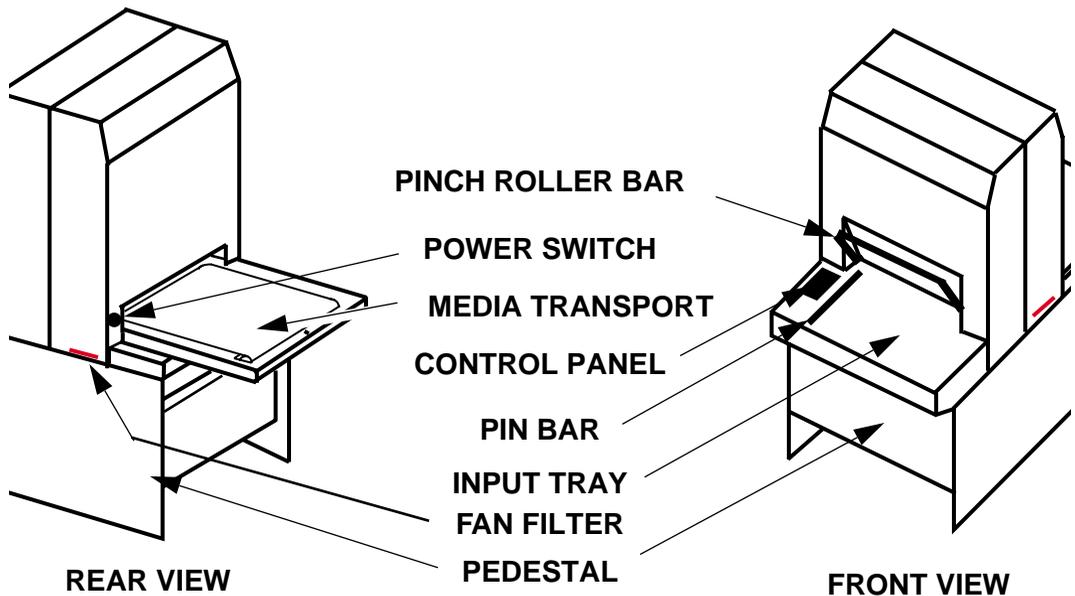
### Introduction

**This chapter discusses:**

- General Maintenance
- Moving the System

### General Maintenance

This chapter explains how to keep the system in clean, working order. Remember to shut the power off to the machine prior to performing any internal maintenance procedures. Use only the recommended cleaner. Make sure that cleaning supplies are lint and dirt free.



**Figure 4-1 System Details**

## **Cleaning the System**

Clean the outside of the system and the pin bar with any mild detergent in clean water using a soft, cotton cloth. Don't use abrasive cleansers or chemical cleansers.

## **Cleaning the Fan Filters**

Two filtered fans run at all times to maintain an air flow inside the machine. Both fans use a 3.6" x 3.6" aluminum filter like the one shown in the next figure. (ECRM P/N FF0087).

The filters can become clogged with dust and other debris if it is not cleaned regularly. A clogged filter can result in the loss of internal pressure and increase the possibility of a system malfunction. Clean the filters whenever they show signs of contamination with dust or other debris

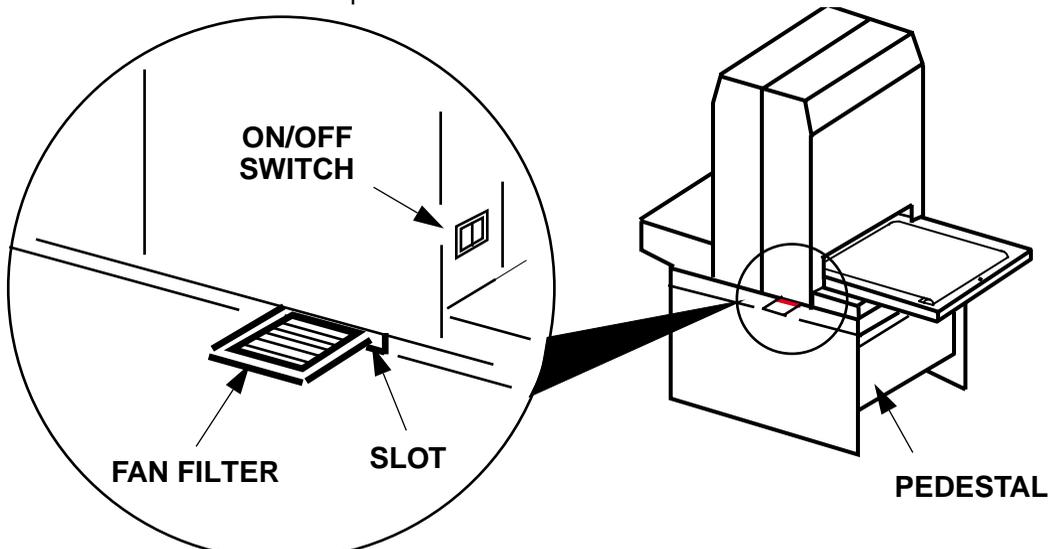
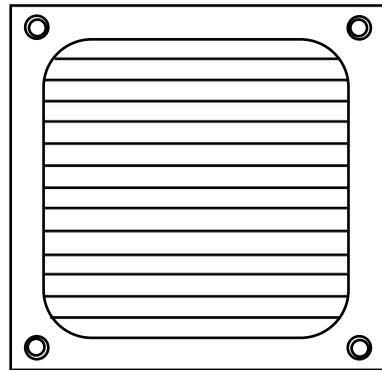
Here's how to remove and replace the filters:

Step 1. Turn the power switch off.

Step 2. From inside the pedestal, reach up and under the machine where the on/off switch is located. See Figure 4-2.

Step 3. Place your fingers on the filter. It has a corrugated feel.

Step 4. Gently push the filter toward the outside of the machine until the filter protrudes from the slot shown below.



**Figure 4-2 Fan Filter Removal**

Step 5. Pull the filter out of its slot.

Step 6. Wash the filter in mild, soapy water, rinse in clean water and dry.

Step 7. Place the filter back into the slot.

Step 8. Push the filter, from the outside, until it is completely in the machine.

Step 9. From inside the pedestal, gently push the filter to the middle of the machine until it is fully seated in the holder.

Step 10. Repeat steps 1 through 10 above for the other filter, which is located on the opposite side of the system.

## **Cleaning the Media Drive Rollers**

Cleaning the rollers will cut down on the contaminants running through the media system. Dirty rollers can cause contamination of the media.

### **Front Media Roller Cleaning Procedure**

#### **Cleaning the Drive Roller**

Step 1. Open the pinch roller bar to open the rollers.

Step 2. Use the User Maintenance Menu to run the media rollers.

Step 3. Sparingly apply Fantastik (ECRM HB2456) to a clean, lint-free wipe.

Step 4. As the rollers turn, gently wipe both the front and back rollers with the cloth, being careful to not catch the cloth in the rollers. Do not touch the rollers with bare hands. The oils and dirt will contaminate the rollers.

Step 5. After wiping with Fantastik, sparingly apply isopropyl alcohol to a clean, lint-free wipe.

Step 6. As the rollers turn, gently wipe both the front and back rollers with

the cloth, being careful to not catch the cloth in the rollers. Do not touch the rollers with bare hands. The oils and dirt will contaminate the rollers.

## Cleaning the Pinch Roller

Step 7. Wipe gum-contaminated pinch roller o-rings with a water-dampened low-lint cloth.

Step 8. If water fails to remove the gum, use ECRM PH0046 roller cleaner. **(Do NOT use alcohol or a general purpose cleaner to clean the rollers.)**

Step 9. Replace the covers.

Step 10. Exit the User Maintenance Menu.

## Rear Media Roller Cleaning Procedure

The rear media roller is not accessible to an operator. The next time you have the system serviced, ask your service provider to clean the rear roller.

## Cleaning the Media Transport Output Sensor

Step 1. Using a cotton tip swab moistened with isopropyl alcohol, gently rub the output sensor to remove any debris buildup.

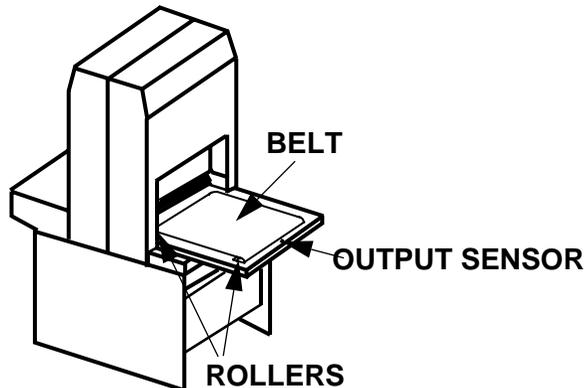


Figure 4-3 Media Transport

## Cleaning the Media Transport Belt

- Step 1. Use the User Maintenance Menu to run the transport.
- Step 2. Using a lint-free cloth moistened with Fantastik (ECRM HB2456), remove debris from the belt.
- Step 3. Using a second lint-free cloth moistened with alcohol, rub down the belt.

## Clearing Misfeeds

Two methods for clearing a misfeed are presented below.

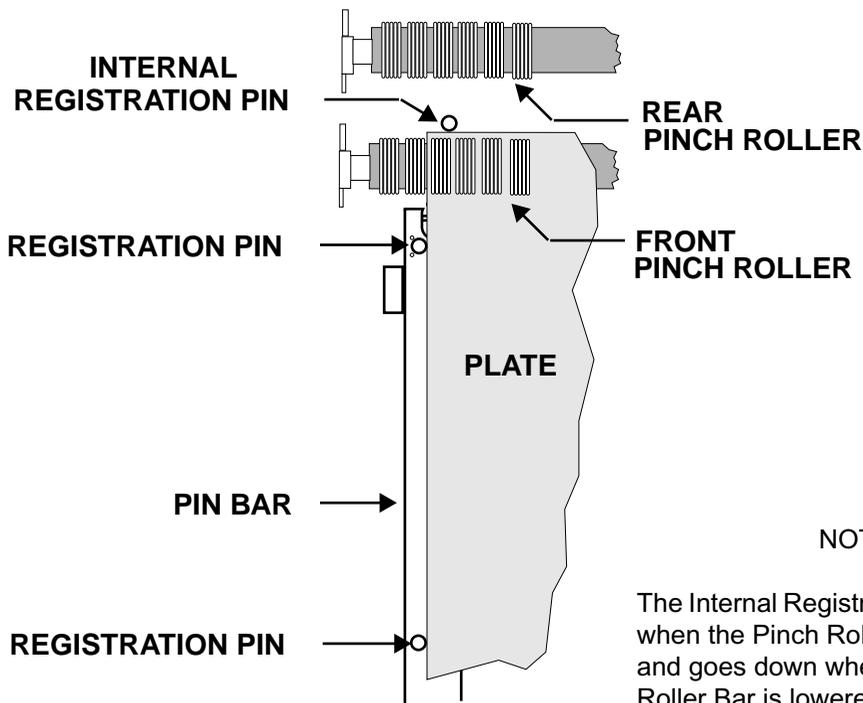
- Use Method 1 if you are using a notch-registered pin bar.
- Use Method 2 if you are using an edge-registered pin bar.

### **Method 1**

- Step 1. Lift the pinch roller bar to open the roller.
- Step 2. Carefully pull the jammed media out of the rollers.
- Step 3. Press the OK button on the control panel.
- Step 4. Resume normal operation.

### **Method 2**

When an edge-registered pin bar is used, a third “internal” registration pin is activated. The location of this pin (which you can feel but not see when you load a plate) is shown in Figure 4-4. The pin moves up into the media path when the pinch roller bar is raised, and it drops below the media path when the bar is lowered.

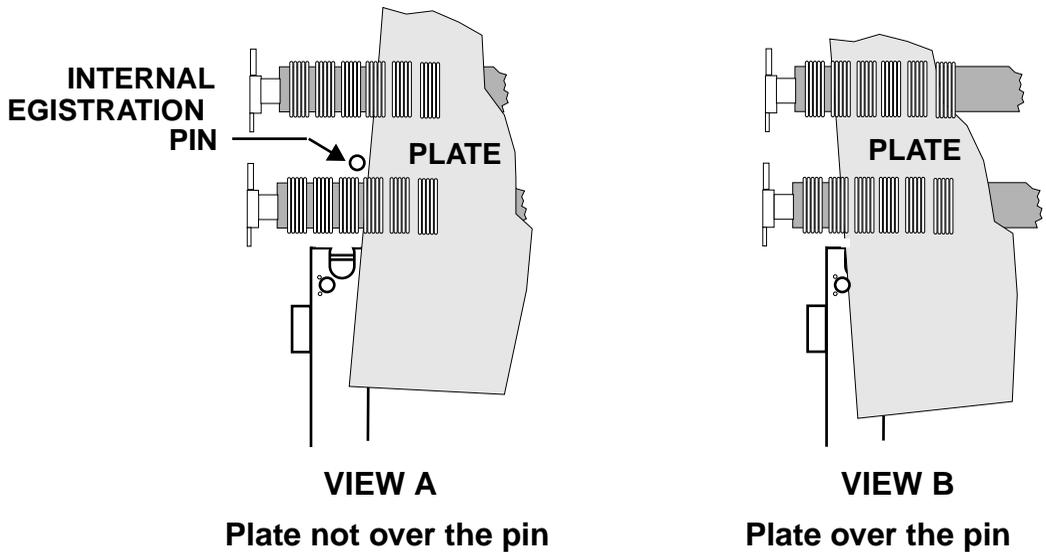


NOTE

The Internal Registration Pin goes up when the Pinch Roller Bar is raised and goes down when the Pinch Roller Bar is lowered.

**Figure 4-4 Internal Registration Pin**

During imaging, the pinch roller bar is down and the registration pin is below the plate's path of travel. If a misfeed or a power failure happens to occur and the plate gets "hung up" in the machine, you are advised not to raise the pinch roller bar. Doing so will raise the registration pin. **If the plate happens to be positioned over the registration pin (Figure 4-5 View B), when the pin comes up and it will bend or dent the plate.**



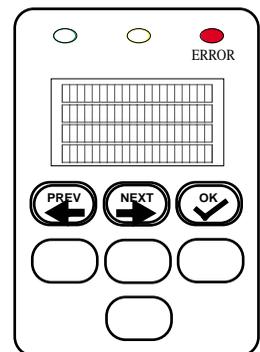
**Figure 4-5 Plate Positions over the Registration Pin**

To insure against this happening, use the following procedure to remove the plate:

Step 1. Do not raise the pinch roller bar or power off the machine.

Step 2. Use the control panel PREV and NEXT buttons as follows to extract the plate:

- Press the PREV button to effect a movement of the plate toward the front of the machine, and then press the button again to stop the movement.
- Press the NEXT button to effect a movement of the plate toward the back of the machine, and then press the button again to stop the movement.



Step 3. Exercise the PREV and NEXT buttons as required until the plate out all the way of the machine.

Step 4. Press the OK button. This turns off the blinking error light and clears the the error message from the display.

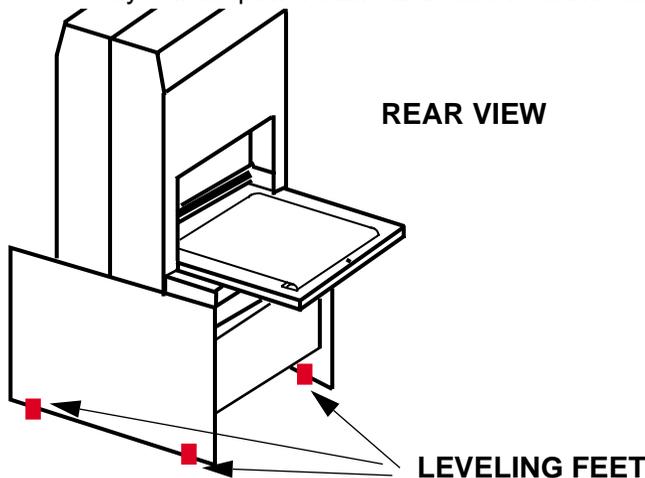
Step 5. Resume normal operation.

## Moving the System

When installing or moving the system, *you must level the system at its new location* as explained below. See Figure 4-6 for the location of the leveling feet in the pedestal.

Step 1. Unplug the power cable from the (wall) outlet. Leaving one end of the cable plugged into the Mako CTP, gently coil the power cable and store it on the shelf in the pedestal.

Step 2. Disconnect the SCSI cable from the PC attached to the Mako CTP. Leaving the SCSI cable connected to the Mako CTP, gently coil the power cable and store it on the shelf in the pedestal.



**Figure 4-6 Levelling Feet Location**

Step 3. Retract all four levelling feet so the system rides on its wheels and place the system in its new location.

- Step 4. Turn all four levelling feet of the platesetter down until they just touch the floor.
- Step 5. Continue to turn leveling feet until the system is level, front to back and side to side.

