Kodak

Flexcel NX Laminator

Safety Precautions for Service

English

DRAFT

731-01328A-EN Rev A

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Introduction

The Kodak® Flexcel® NX Laminator is designed and manufactured to provide a safe working environment under approved operating conditions.

Read this safety guide carefully before installing, operating or servicing the Flexcel NX Laminator.

Read the operator safety precautions for the Flexcel NX Laminator, an indispensable part of the service engineer's precautions. See *Flexcel NX Laminator Safety Precautions for Operators* (part number 731-01317A-EN.)



Figure 1: Flexcel NX Laminator view of left side and front



Figure 2: Flexcel NX Laminator view of right side and rear

Symbols Used in This Guide



DANGER: This indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury. This does not alert you to a property damage accident unless personal injury risks are associated with the accident.



WARNING: This indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury. This does not alert you to a property damage accident unless personal injury risks are associated with the accident.



CAUTION: This indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. This may also alert you to unsafe practices or potential property-damage-only accidents.

Note: A note provides additional information that you may need to consider.

Basic Safety Precautions

The laminator's moving mechanical parts and electrical power constitute the source of hazards.

However, extensive means were taken in the design and manufacturing of the laminator to eliminate the hazards for the operator and service personnel.

- Only properly trained personnel should operate this laminator.
- Disconnect the power to the laminator before performing service or maintenance.
- Use only the specified laminating materials, maintenance or service tools, and supplies.

Power and Electrical Elements

The following elements protect the operator and service engineer from electrical hazards:

- Electrical enclosures
- Doubly insulated wiring
- Grounding

Many service procedures can be performed when the laminator is turned off. Whenever possible, perform service when the laminator is off.

DANGER: Electronic boards and modules may have places and components at hazardous electrical voltage. Do not touch.

Electrical Enclosures

The electrical enclosures are grounded metal boxes that require a tool to open. These enclosures may have warning labels with the symbol of lightning in a triangular border.



Figure 3: 374A7B951

Doubly Insulated Wiring

Wires that carry hazardous voltages have double insulation.

WARNING: Wires may be singly insulated near connectors. Do not touch singly insulated wires.

Grounding

The device must be grounded.

DANGER: There is a hazard of fatal electric shock if a safety ground is not provided.

WARNING: Do not alter the internal grounding means.

Installation

WARNING: Only authorized service personnel are allowed to install or to service the Flexcel NX Laminator.

These technicians are trained in the proper procedures for working with and adjusting the mechanical and electrical components of the laminator.

Electrical Connections

Electrical Specifications

- Rating: 200–240 V AC, 8 A
- Line voltage
  - Dual-phase supply in a 120 V configuration
  - Single-phase and neutral in a 230 V configuration
- Supply frequency: 50/60 Hz ±1.5%
- Power line connections must include three pins: two phases (or phase and neutral) and one safety ground.

DANGER: There is a hazard of fatal electric shock if a safety ground is not provided.

- The cable connector (male, 3-pin: 2 phases and safety ground) is supplied with the laminator.
- Electrical cord: 177 in. (450 cm)

Configurations available:

One configuration is available: 50/60 Hz.

- **60 Hz power output (North America):** Electrical supply must be 208 V AC, 8 A, 60 Hz ±1.5%, two phases and safety ground.
- **50 Hz power output (Europe):** Electrical supply must be 200–240 V AC, 8 A, 50 Hz ±1.5%, phase and neutral, and safety ground.

AC Mains Power Outlet

The AC mains power electrical outlet must be three-pin and grounded.

- Europe: 3-prong, grounded, 230 V AC, single phase, 50 Hz, 20 A
- North America: 3-prong, grounded, 120 V AC, single phase, 60 Hz, 20 A

WARNING: The circuit breaker on the wall outlet must be 20 A.

AC Mains Power Cable Plug

- Europe: 3-pin, 2-pole, 3-wire, 230 V, 16 A, 6 o'clock (6 o'clock orientation of the ground connection) ,IEC60309
- North America: 2-pole, 3-wire, 250 V, 20 A, L6-15P locking plug

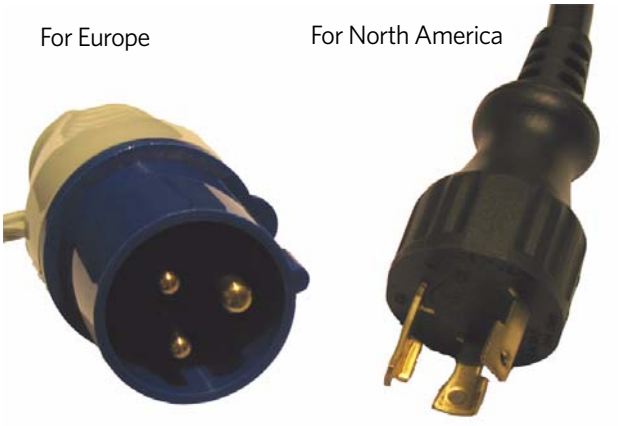


Figure 4: Power cable plug types:

WARNING: Do not alter any electric wiring. Do not alter the power cord or plug.

Laminator Control Switches and Emergency Stop Buttons

The Flexcel NX Laminator has one On/Off switch, four functional buttons and three emergency stop buttons.

Name	Function	Location
On/Off switch	Connects and disconnects from the AC mains power	Right side
Emergency stop buttons (3) (red)	Stop laminator's mechanical movements in an emergency	Front panel, left panel, right panel
LAM button (green)	Starts the lamination process	Left panel
HOME button (blue)	Moves carriage to home position after lamination	Front panel (left button)
VAC button (gray)	Initiates and stops vacuum operation	Front panel (middle button)
FAULT button (amber)	Indicates an error when blinking, and resets the laminator	Front panel (right button)

Disconnecting from the AC Mains Power

The Flexcel NX Laminator's On/Off switch turns the power on and off. It is located on the left side of the laminator

WARNING: You can totally disconnect from the AC mains power only by turning the On/Off switch to Off, or by unplugging the power cable from the AC mains power supply outlet.



Figure 5: On/Off switch

Emergency Stop Buttons

The laminator has three red emergency stop buttons, located on the front, left, and right panels. Each emergency stop button stops the laminator's mechanical movements. Pushing the emergency stop button does not disconnect electricity from the laminator.

To stop the laminator's operation:

➢ Push the red emergency stop button.

To restart the laminator after pushing the emergency stop button:

1. Turn the emergency stop button that you pushed clockwise.

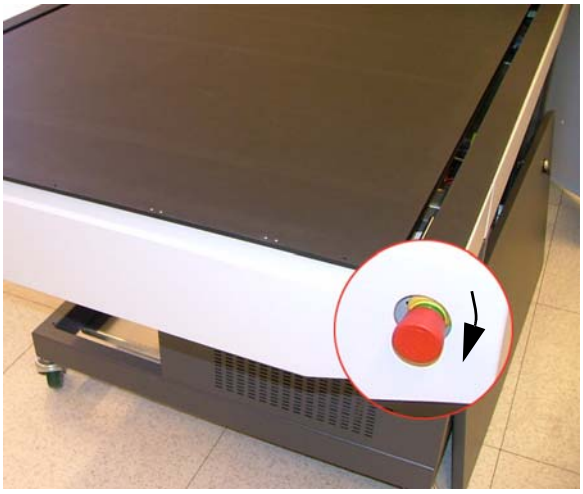


Figure 6: To release the emergency stop button, turn it clockwise

2. Push the Fault button until the three buttons on the operation panel remain on (about five seconds).

Functional Buttons

The laminator has four functional indication lights/buttons:

- **HOME** (blue): Moves the carriage to home position
- **VAC** (gray): Initiatiates and stops the vacuum pump. The vacuum pump shuts off automatically after 10 minutes of inactivity.
- **FAULT** (amber): Indicates an error that affects the laminator's function, and resets the laminator
- **LAM** (green): Starts lamination

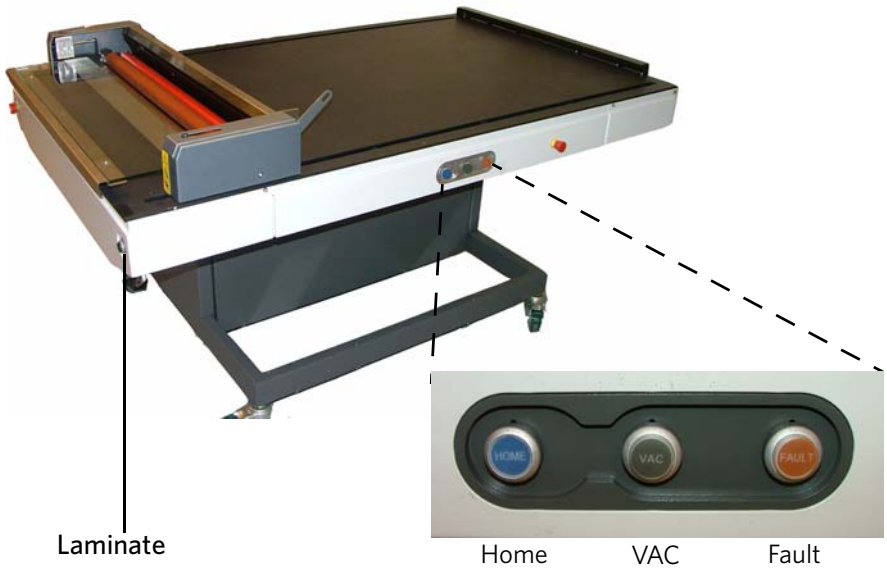


Figure 7: Functional buttons

Indication Lights

- A blinking indication light indicates that you must push that button to continue operation or to reset the laminator.
- A lit indication light indicates that the button's function is in progress.
- All indications lights blink together when you activate the emergency stop.

Power-related Precautions



WARNING: You must observe *all* safety precautions in this document when servicing the Flexcel NX Laminator. *In addition* to all other precautions mentioned in this document, you must observe the following basic power-specific precautions.

- Use only the recommended power source (electrical connections) to run the Flexcel NX Laminator.
- Consult a qualified and licensed electrician if you have any questions about the power source and its safety features.
- If the power cord is run across the floor, provide adequate protection to the cord to avoid damage from foot traffic, dropped items, or rolling items.
- Disconnect power to the laminator before performing service or maintenance.
- Do not insert fingers, hands, or items into openings in the Flexcel NX Laminator. Items may come in contact with electrically energized components.

Mechanical Elements

Mechanical hazards are present during the laminator's essential operations, and the operator and serviceman interact with movable parts.

WARNING: Hazadarous moving parts. Keep fingers and other body parts away. Follow the operation procedures described following.

WARNING: Roll up long sleeves, gather long hair, and remove neckties and any piece of clothing or jewlery that could get caught in the rollers or in the table slots.

WARNING: Do not leave any loose objects, tools, or parts on the laminator table or carriage, or anywhere inside the laminator. Such an object may become caught in the moving carriage, harm the carriage or other parts of the laminator, and thus create a hazard or damage the device.

Three emergency stop buttons enhance operator and serviceman safety. If a body part or clothing becomes caught in the laminator, immediately push one of the emergency stop buttons.

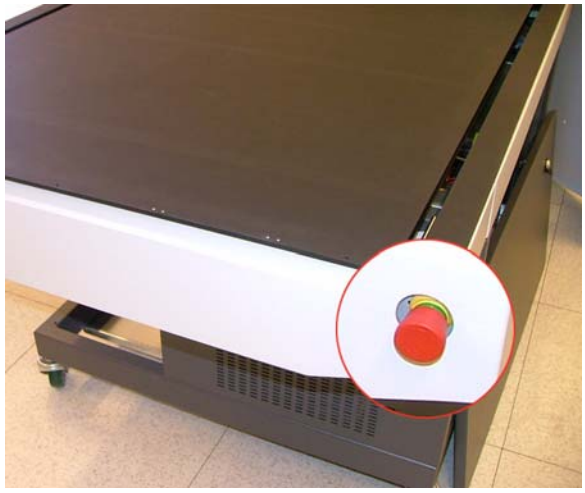


Figure 8: One emergency stop button

Carriage

The laminator carriage travels along two tracks within slots that are cut through the laminator table.

WARNING: Do not place hands or fingers into these slots or into any other areas on the table or carriage unless the device is disconnected from the AC mains power supply.

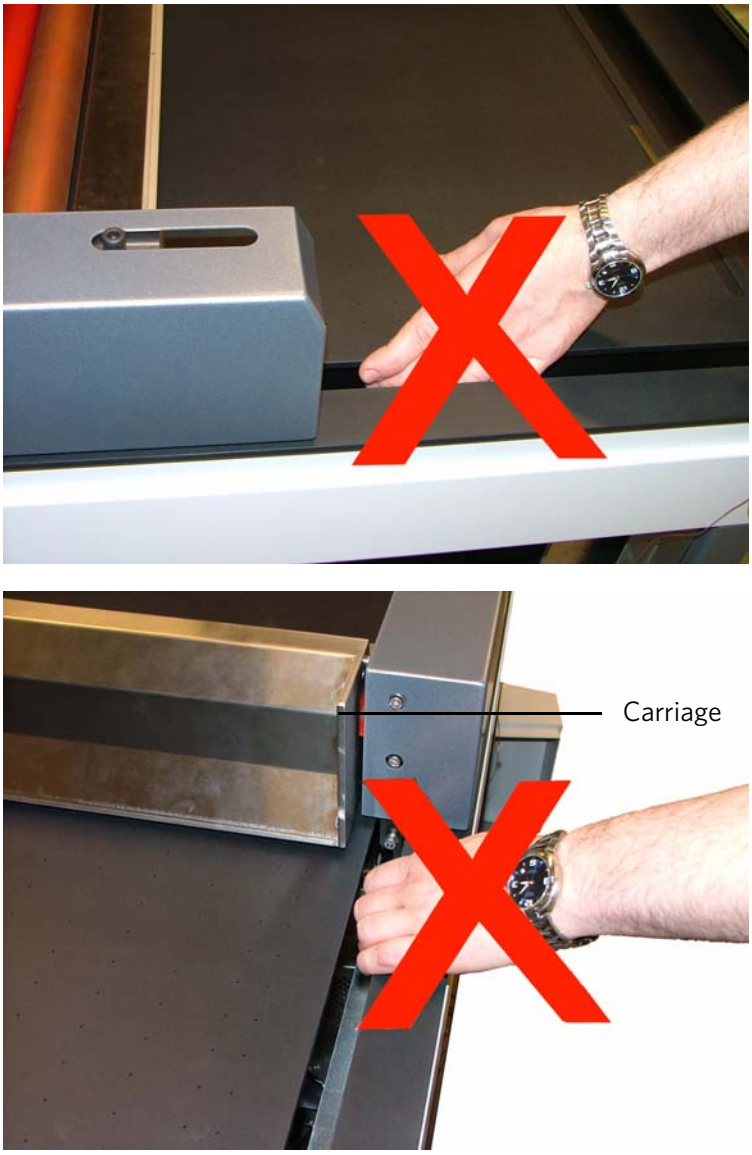


Figure 9: Table slots

Rollers

Lamination sheets feed into the rollers as the carriage travels along the table.

WARNING: Do not place fingers into the rollers when the carriage is moving. The rollers can pull your fingers and hands into the laminator.

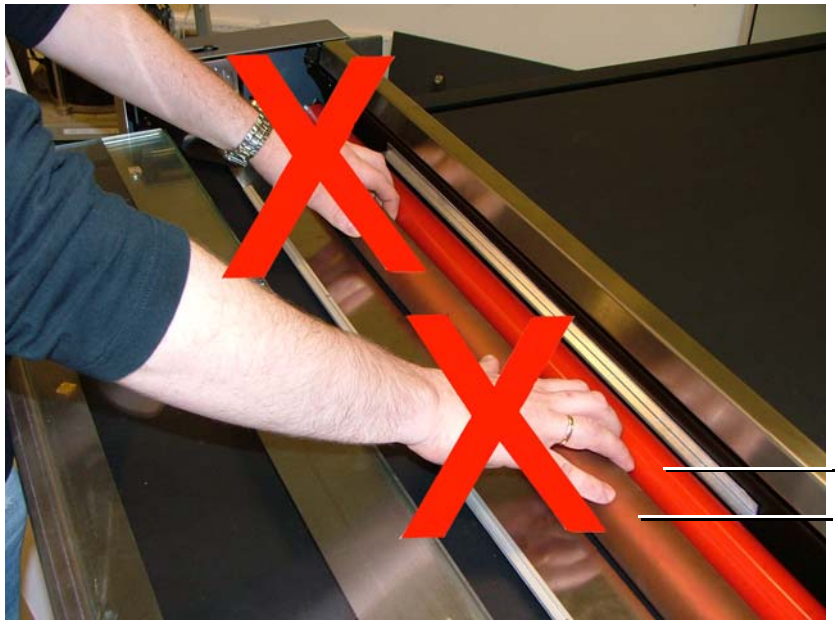


Figure 10: Rollers

CAUTION: Keep the carriage in home position after lamination, and when the laminator is not in use. This will help to prevent the rollers from coming together and forming a flat spot, which could possibly damage the rollers.

Mechanical-related Precautions



WARNING: You must observe *all* safety precautions in this document when servicing the Flexcel NX Laminator. *In addition* to all other precautions mentioned in this document, you must observe the following basic mechanical-specific precautions.

- Post the following sign close to the laminator:
  "CAUTION: Machine in service–do not operate." This sign will caution people not to operate the laminator while it is being serviced.
- Before performing any service task, roll up long sleeves, gather long hair, and remove neckties and any piece of clothing or jewlery that could get caught in the rollers or other moving parts.
- Do not insert fingers or hands into any openings in the laminator when the laminator is turned on.
- After you initiate a lamination job, move away from the device.
- Do not touch the balance weights when the carriage is moving.
- Keep the carriage in home position when the laminator is not in use.
- Be sure not to leave any objects, tools, or parts inside or on the laminator enclosure. The object may get caught in the laminator's moving parts.
- Because of the potential danger of loose parts inside the laminator, be sure to replace, reconnect, or adjust any component exactly according to the correct procedure.

Laminator Enclosures

The laminator enclosure, which includes the front, side, and rear doors and/or panels, the upper table, and the carriage enclosure, is designed to protect operators from electrical and mechanical hazards.
Keep all parts and panels of the laminator complete, unharmed, and intact.



DANGER: Exercise extreme caution if you must open or access the electrical panel.

Basic Operation

Important: During operation, observe all safety precautions mentioned in this guide.

Note: For indication lights descriptions, see *Indication Lights on page 9.*
For full operation instructions, see the *Flexcel NX Laminator Visual Reference Guide*.

3. If you changed Flexcel NX plate sizes, adjust the balance weights' position.

   Note: One balance weight is located on each side of the carriage.

   - ❒ For 31.5-in. (80-cm) plates, move the balance weights away from the table.
   - ❒ For 35-in. (89-cm) plates, move the balance weights toward the table.

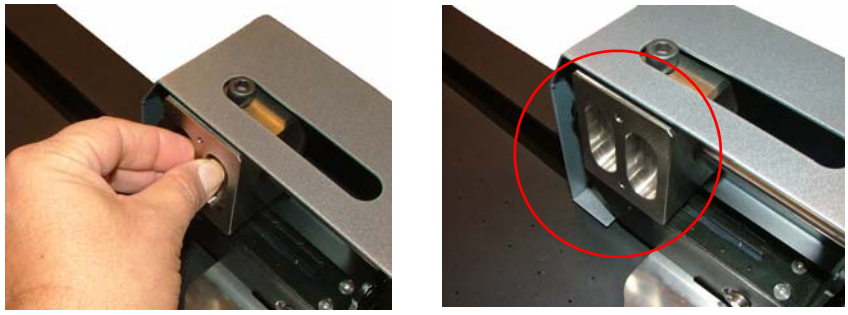


Figure 11: Moving the balance weight into position for a small plate

4. Place a plate on the table, against the stoppers.

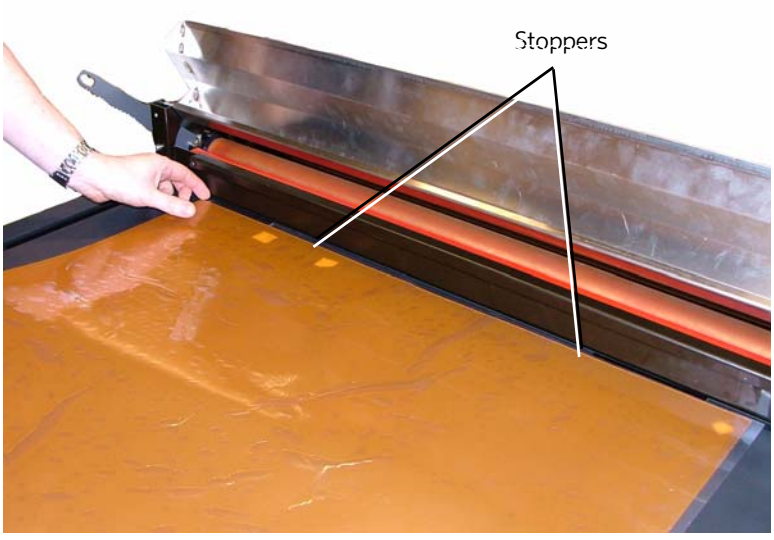


Figure 12: Plate on table

5. Peel off about 10 in. (25 cm) of the plate's protective cover.



Figure 13: Protective cover

6. Close the carriage plow so that the edge of the plate's protective cover is resting on top of the plow.



Figure 14: Plow closed

7. Load the Flexcel thermal imaging layer (TIL) into the carriage.

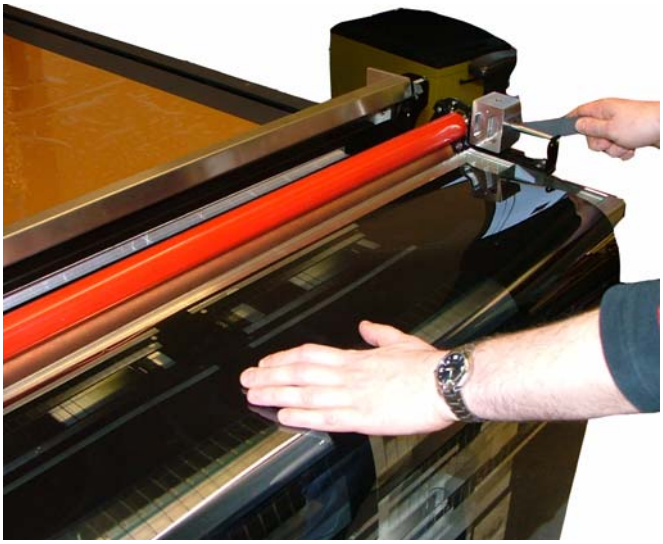


Figure 15: Loading the TIL

8. To secure the TIL in the carriage, push the lever.



Figure 16: Handle being closed to secure the TIL

9. Push the LAM button and move away from the laminator.

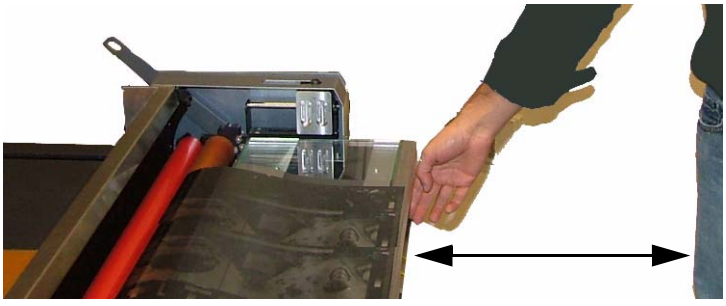


Figure 17: Safe distance from the laminator

Warning Label Locations

WARNING: The warning labels are provided for operator and service personnel safety. Always comply with the warnings.

The following pages show the laminator warning labels and their locations.

Replace warning labels that are not in good condition.

Warning Labels



Figure 18: 382-01894A



Figure 19: 382-01894A (2)



Figure 20: 374A7B951

Warning Label Locations on the Flexcel NX Laminator

See the following figures for locations of warning labels on the Flexcel NX Laminator.



Figure 21: Left side view



Figure 22: Right side view

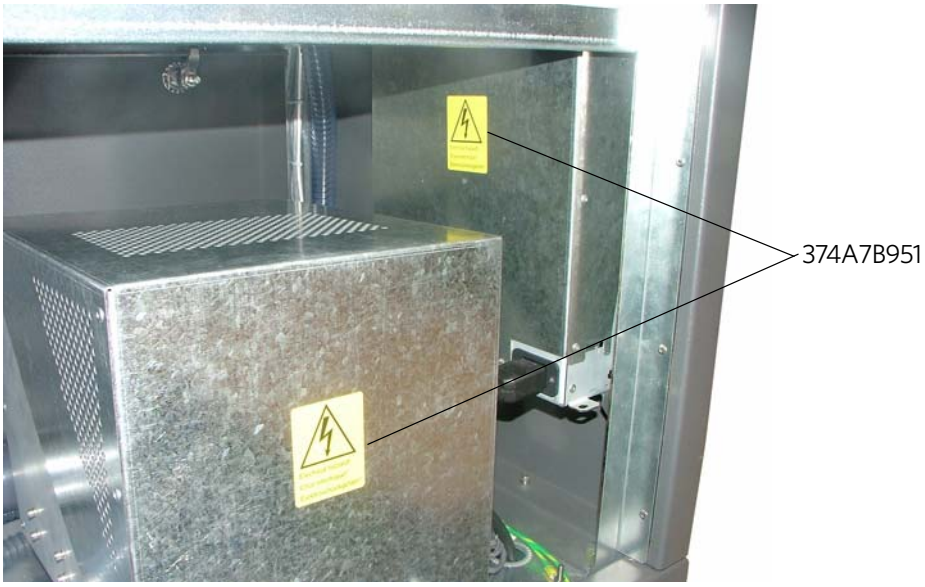


Figure 23: Rear view, electrical panel removed