Safety Precautions for User

English

Lotem 800 Family

399Z1R943A

www.creo.com

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RE37376	5249067	5481379	5691823	5942137	6112663	6266134
4456924	5283140	5488906	5691828	5946426	6115056	6267054
4500919	5291273	5497252	5696393	5947028	6121996	6268948
4558302	5296935	5508828	5699174	5958647	6130702	6283589
4743091	5313278	5509561	5699740	5966504	6134393	6295076
4992864	5323248	5517359	5708736	5969872	6136509	
5049901	5325217	5519852	5713287	5973801	6137580	
5079721	5331439	5526143	5739819	5986819	6147789	
5081617	5333064	5532728	5742743	5995475	6158345	
5103407	5339176	5561691	5764374	5996499	6159659	
5111308	5343059	5568595	5764381	5998067	6164637	
5113249	5355446	5576754	5771794	6003442	6180325	
5122871	5359451	5579115	5785309	6014471	6181362	
5124547	5359458	5592309	5802034	6016752	6181439	
5132723	5367360	5594556	5813346	6031932	6186068	
5150225	5367388	5600448	5818498	6043865	6189452	
5153769	5384648	5608822	5854883	6060208	6191882	
5155782	5384899	5615282	5861904	6063528	6204874	
5157516	5412491	5625766	5861992	6063546	6208369	
5177724	5412737	5636330	5864651	6072518	6214276	
5208818	5420702	5649220	5875288	6090529	6217965	
5208888	5420722	5650076	5894342	6096461	6252522	
5247174	5459505	5652804	5900981	6098544	6260482	
5247352	5473733	5680129	5934196	6107011	6266080	

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Symbols Used in this Manual



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.

Introduction

Read this chapter carefully before operating or maintaining the Lotem 800 platesetter.

Note: The safety precautions outlined in this document apply to the following Lotem 800 (Fiber, not Quantum) platesetters, namely Lotem 800, Lotem 800 (F-Speed), Lotem 800 with Spectrum and Lotem GTO.

Note: For safety precautions regarding the Lotem 800 with MCU refer to *MCU for Lotem 800 Safety Precautions for User*, catalog number 399Z1R097A.

This product is a **Class 1** laser product, according to IEC825-1 and USA 21 CFR 1040. This implies that there is no hazardous laser radiation, providing that the user and service safety precautions are followed.

Lotem 800 Family safety at a glance - how to avoid exposure hazards?

WARNING: The laser beam and radiation are hazardous, but invisible to the eye.

1. Keep all external doors and internal protective barriers of the platesetter complete, unharmed and intact!
2. Never defeat the Laser or any other interlock switch!
3. Never leave any object between the laser head and the drum.
4. Do not open any internal doors. Do not use any tools!
5. Do not operate the platesetter if there is any doubt regarding the above. Contact your service engineer.

Extensive means were taken in the design and manufacturing of the platesetter to eliminate the hazards for the operator and service personnel.

Carefully follow the instructions in this document to ensure your safety and the safety of others when operating or maintaining the platesetter.

Installation Safety Precautions

Installation must be done only by authorized service personnel.

The Lotem 800 platesetter is installed and serviced exclusively by specialized technicians. These technicians are trained, authorized and certified in the proper procedures for working with, and adjusting the laser system, and working with the mechanical, cooling and electrical systems of the platesetter.



WARNING: Do not connect the platesetter to the power supply before it is installed by authorized service personnel.



WARNING: Only certified service personnel are allowed to service the Lotem 800 platesetter.

Disconnection from Mains Supply

The platesetter is equipped with a **Main power circuit breaker,** located on the Distribution box (Distribution box) on the lower rear panel of the platesetter; and two identical (yellow) **On/Off** pushbuttons located on both sides of the rear panel of the platesetter.

Special circuit breakers for the **Drum power** and **Drum vacuum pump** are located near the **Main power circuit breaker.** An additional circuit breaker for the **Electronic box** is located internally on the Electronic box cover.



WARNING: Total disconnection from the mains supply can only be achieved by deactivating the Main power circuit breaker (set to "0"), or by unplugging the Main power cable from the 3 phase power connector.

Disconnection from Pneumatic Air Pressure

Switching the air pressure off is done by switching off the air supply . The Lotem 800 receives pneumatic air pressure from the filtration unit located on the wall. Turn the knob to switch the airpressure off.

Basic & Laser Safety Precautions

The basic and laser safety precautions section includes the following topics:

- Optical Fibers
- Laser Head
- Laser Box
- Enclosures
- Safety Interlocks
- Warning labels



CAUTION: Use of controls or adjustments, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.



DANGER: The above CAUTION note must be included in this manual according to USA 21CFR regulations. However, the hazards involved include not moderate, but SERIOUS bodily injury - especially to the eye!

The platesetter is equipped with a **highly hazardous laser system** that exposes the media. However, the platesetter as a whole, is a **Class 1 laser product**, according to IEC825-1 and the USA 21 CFR 1040. This implies that the operator and service engineer cannot access hazardous laser radiation, providing that the user and service safety precautions are followed.



WARNING: The laser beam and radiation of the platesetter are invisible and are hazardous to the eye and skin. **In the presence of flammable material, the laser beam is also a fire hazard! Even brief exposure of the eyes to the laser radiation or beam, or its reflections from shiny or matte objects may cause permanent loss or permanent degradation of eyesight.**



WARNING: Whenever in doubt, the platesetter should never be operated until it is checked and approved for operation by an authorized service engineer.



WARNING: If you **must** enter the room where the platesetter is located when the platesetter is on, and you suspect that any of the following precautions was somehow violated, then you must **disconnect** the power supply to the platesetter before entering the room.

Optical Fibers

Laser energy is generated in the laser diodes, located in the laser box and conducted to the plotting head through optical fibers.



WARNING: You are forbidden under any circumstances to move, pull or handle the optical fibers and their protective tubing!



DANGER: If the platesetter is on and an optical fiber extends from the enclosure, or if a fiber is damaged inside or outside the platesetter, and even when the doors are closed, invisible laser radiation of up to a watt at a wavelength of 810-860 nanometer may be present. Even brief exposure of the eye to this radiation or its reflection from shiny or matte objects can cause permanent degradation or permanent loss of eyesight!

Laser Head

The Optical fibers conduct the laser radiation in the platesetter from the Laser box to the plotting Laser head.



DANGER: The laser head must never be activated if it is removed from its position on the guide beam. In addition, the laser head must never be activated when it is not in its proper position facing the drum, and with all the internal protective barriers assembled and all the doors closed.



WARNING: Never place any object in the path of the laser beam between the laser head and the drum.



DANGER: Up to several watts of invisible laser radiation at a wavelength of 810-860 nanometer may be present at the output of the Laser head. This laser radiation is hazardous to the eye and skin. Even brief exposure of the eye to this radiation or to its reflection from shiny or matte objects can cause permanent degradation or permanent loss of eyesight!

Laser Box

The Laser diodes are located in the Laser box locates behind the side door of the platesetter. The platesetter must never be activated when the Laser box is not in its proper location and the Laser box door closed and properly fastened and no optical fibers emerge from its enclosure.



WARNING: After performing any service activity and before switching **on** the platesetter, the service engineer must check and ensure that no optical fiber extends from the Laser box enclosures or is damaged.

Enclosures

Together with the Laser interlock system, the platesetter enclosure is designed to protect anyone in the platesetter vicinity from exposure to the laser radiation by enclosing the laser radiation within the platesetter. The enclosure includes the external doors and panels, and the internal protective barriers. The internal protective barriers prevent the laser radiation from escaping through the platesetter loading/unloading openings and through the ventilation openings on the side doors or lower panels. This protection depends upon the completeness and correct assembly of the outer enclosure and the internal protective barriers.



WARNING: You are forbidden, under any circumstances, to dismantle any external door or panel, or internal protective barrier from the platesetter!



WARNING: After performing any service activity and before switching **on** the platesetter, the service engineer must check and ensure that all external and internal enclosures and doors are complete, not broken or cracked, and properly assembled to the platesetter.



DANGER: If the platesetter is ON and the enclosure is damaged or incomplete, and even with the external doors closed, then invisible laser radiation of up to several watts may be present. This radiation is hazardous to the eye or skin. Even brief exposure of the eye to this radiation or its reflection from shiny or matte objects can cause permanent degradation or permanent loss of eyesight!



CAUTION: The opening of the two upper doors is controlled by a spring loaded mechanism. Make sure your head is **not near** the door when opening the door.



WARNING: You are forbidden to open any internal doors (for example, Laser box, Distribution box, and Electronic box).



WARNING: You are forbidden to use tools.

Safety Interlocks

Safety interlocks provide the **main** protective means against the severe **laser** and **mechanical hazards** involved with the platesetter, providing that you carefully follow all the safety precautions detailed in this chapter.

Interlock switches are designed to disconnect power from the Laser system, Drum motor and other motors when the upper doors or the left or right doors are open, or the upper rear panel is removed. The paper disposal door disconnects the Paper disposal motor.



DANGER: The user is not, under any circumstances, allowed to defeat any interlock switch.

- Even authorized service personnel are forbidden to defeat the laser interlocks, but are allowed to defeat the Motor interlocks while keeping the appropriate safety instructions.

The following table is included to provide the operator with information about the safety measures and controls included in the platesetter. The operator is strictly forbidden to defeat any interlock switch or actuate any defeat switch, or use a tool!

Interlock Functions and Locations

Interlock Location	Interlock Function	Description of interlock Switches	Serviceman only Defeat Allowances
Upper rear door (unloading)	Disable Lasers and Motors	2 interlock switches 1 defeat switch	Defeat switch only - to operate motors
Upper front door (loading)	Disable Lasers and Motors	2 interlock switches	None
Upper rear panel	Disable Lasers and Motors	1 interlock switch	None
Lower rear panel	Disable Lasers and Motors	1 interlock switch	None
Left door	Disable Lasers and Motors	1 interlock switch	None
Right door	Disable Lasers and Motors	1 interlock switch	None
Cassette inlet opening	Disable motors only	1 interlock magnetic switch	Interlock magnetic switch - to operate motors
Left and Right side paper doors	Disable paper disposal motor only	1 interlock switch at each paper door	Interlock switch - to operate paper disposal motor



WARNING: It may take up to two seconds for the laser interlock system to shut off the laser sources. Therefore, when opening a door, do not rush to access inside the platesetter.



DANGER: If a door or panel is open and if interlock switch is defeated, or if the interlock system failed, then severe **mechanical hazards** and invisible laser radiation of up to several watts may be present. **The laser radiation is hazardous to the eye and skin**. **Even brief exposure of the eye to this radiation or its reflection from shiny or matte objects can cause permanent degradation or permanent loss of eyesight!**

Note: The **laser** interlock system is equipped with a **buzzer**. If a failure is detected in the operation of the laser interlock system, the buzzer is activated and the laser is shut off. In any case, not every possible failure can be detected, especially failure of a single interlock switch.

WARNING: If the buzzer is activated, shut the platesetter off and do not operate the it again until it has been checked and approved for operation by an authorized service engineer.

Warning Labels

The following pages show the laser and other warning labels, and their locations.

Make sure that the warning labels are in good order; notify your service engineer if a label needs to be replaced.

Note: When a language other than English is spoken, the service engineer should stick the translated labels (attached to the platesetter) in the relevant locations.

The warning labels are provided for user and service personnel safety. Do not fail to comply with the warnings!

DANGER

HAZARDOUS MOVING PARTS AND INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION.

ONLY MECHANICAL INTERLOCK MAY BE DEFEATED AND BY SERVICE ENGINEER ONLY.

K7B830



K7B831



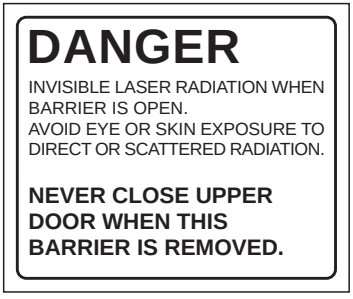
K8B832



K7B833



KB834



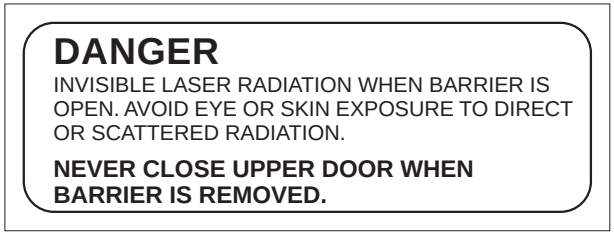
KB835



KB836



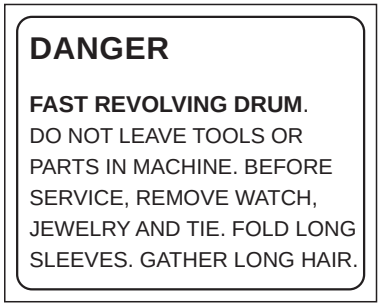
K7L407



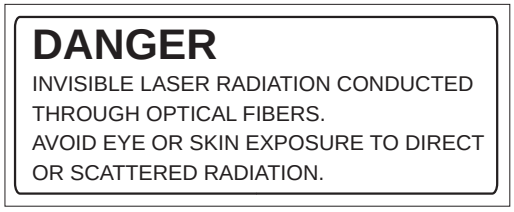
K7L408



K7L411



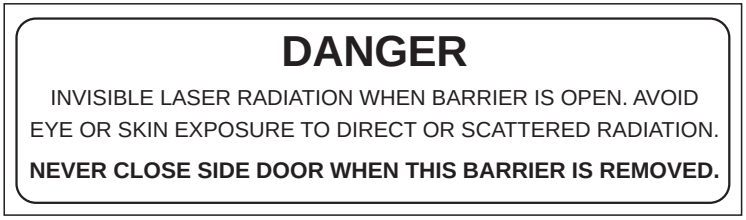
K7L413 (also K7L412A)



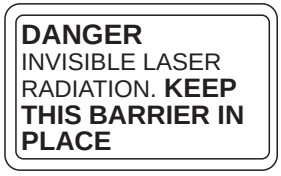
K7L420



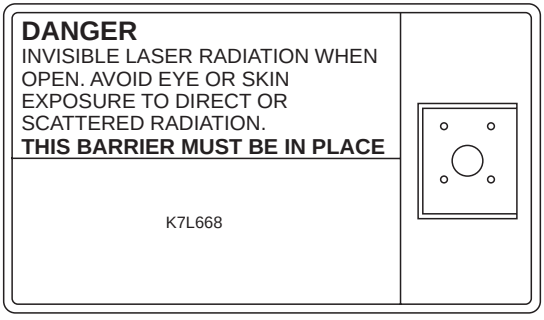
K7L405



K7L416



K7L667



K7L668



K8L535



K2G957



374A7B951 (374A30170)

See the following figures for locations of warning labels on the Lotem 800 single cassette and dual loading cassette platesetters.

Make sure that all warning labels are in good order; renew warning labels if needed.

Note: When a language other than English is spoken, the service engineer should stick the translated labels (attached to the platesetter), in the relevant locations.

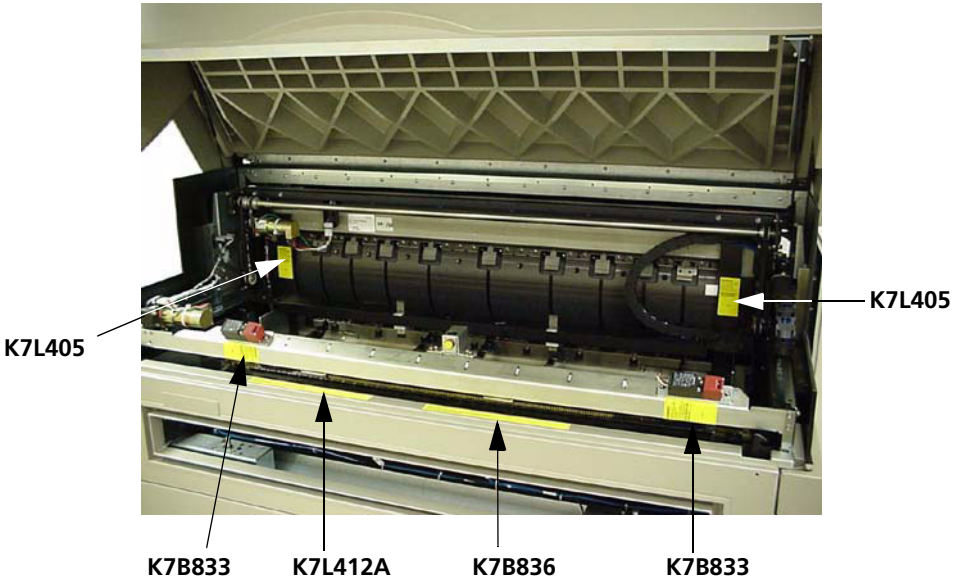


Figure 1: Front top cover open

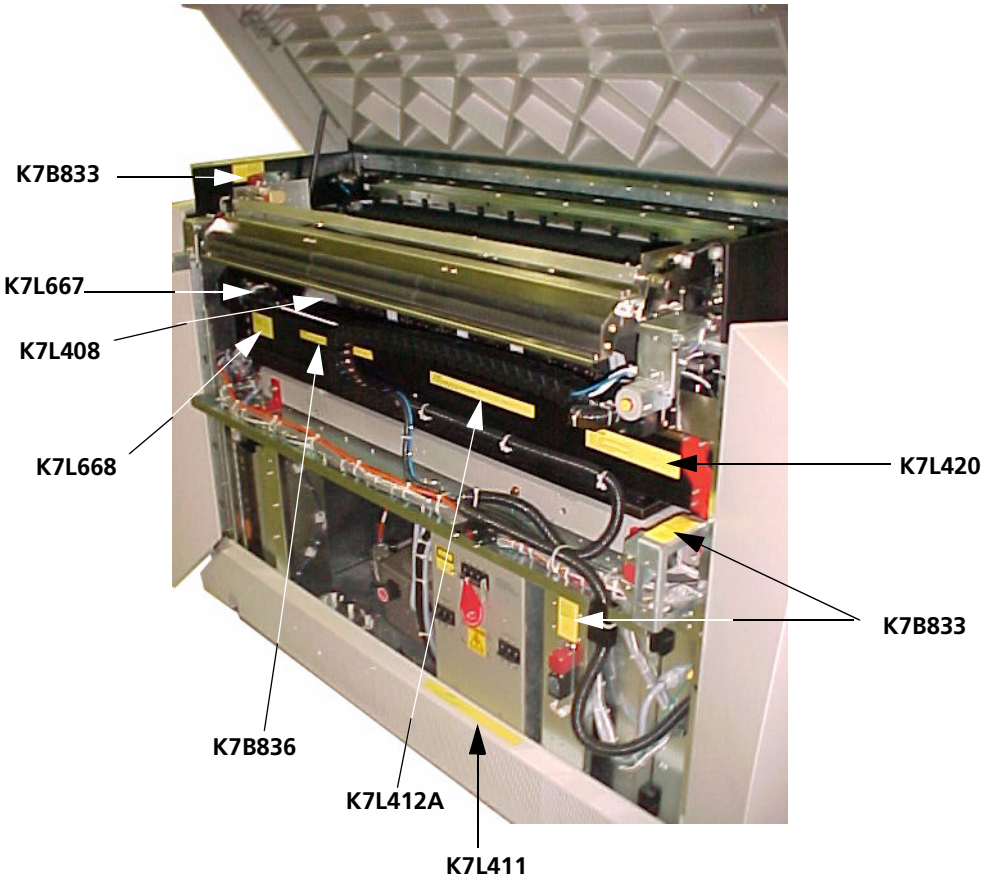


Figure 2: Rear top cover open, rear panel removed

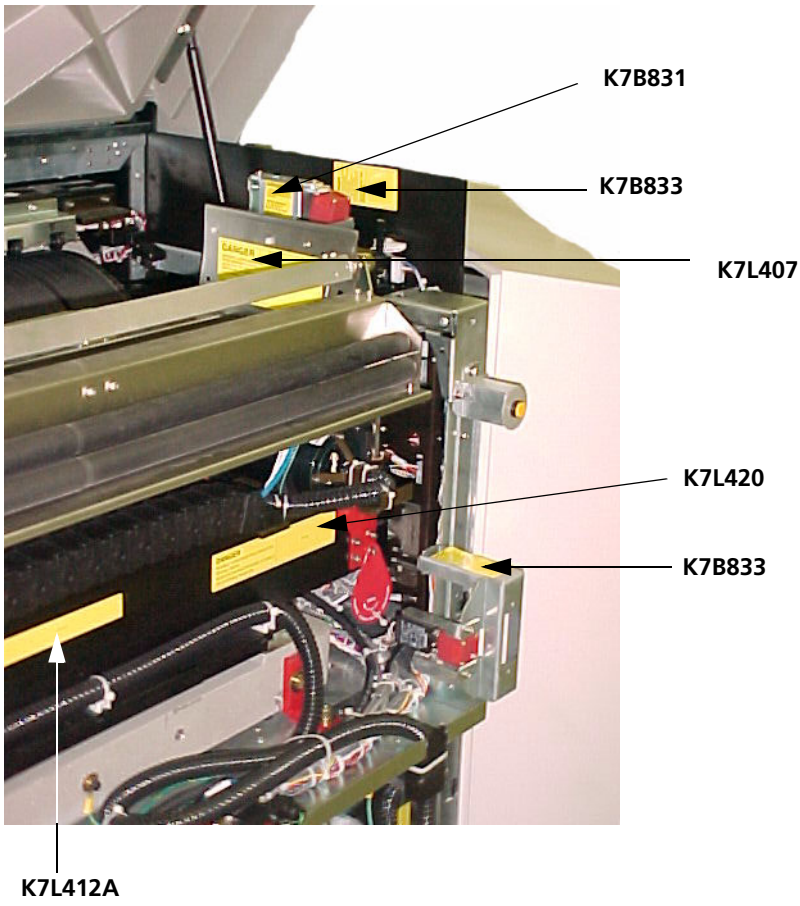


Figure 3: Rear top cover open, panel removed, right side

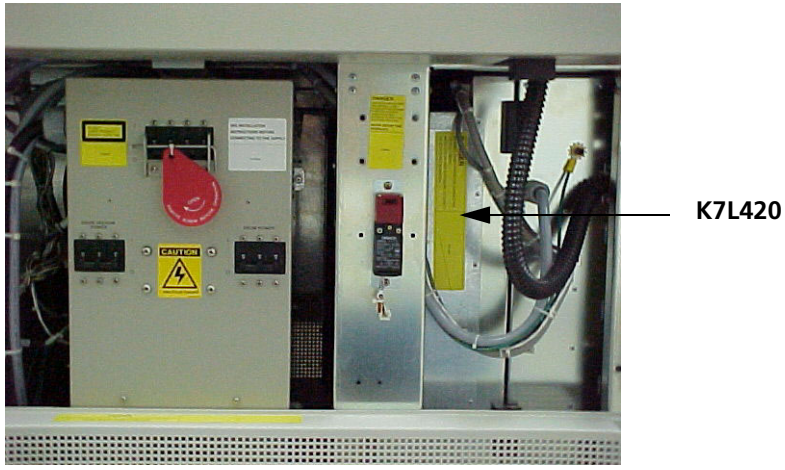


Figure 4: Rear lower panel removed, right side

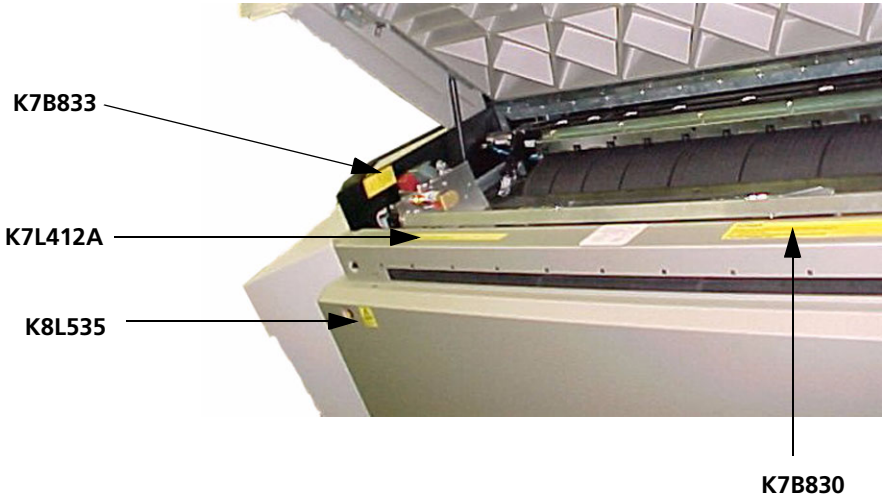


Figure 5: Rear top cover open, left side

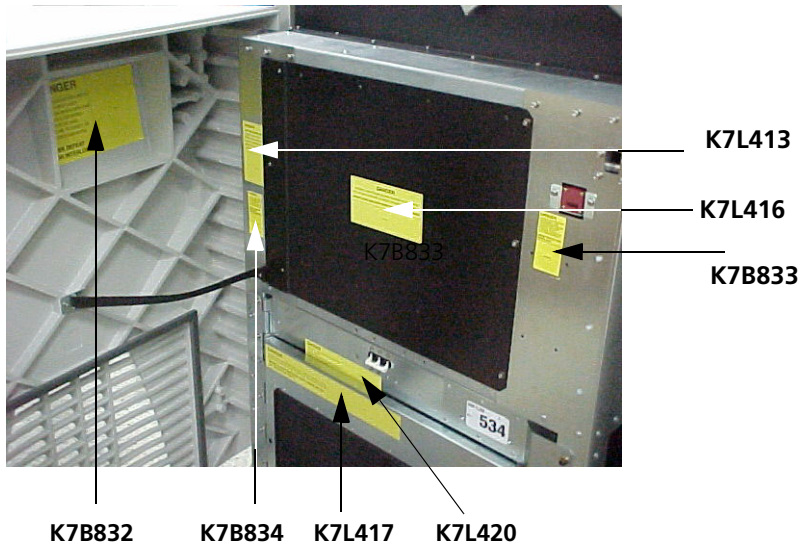


Figure 6: Left side door open

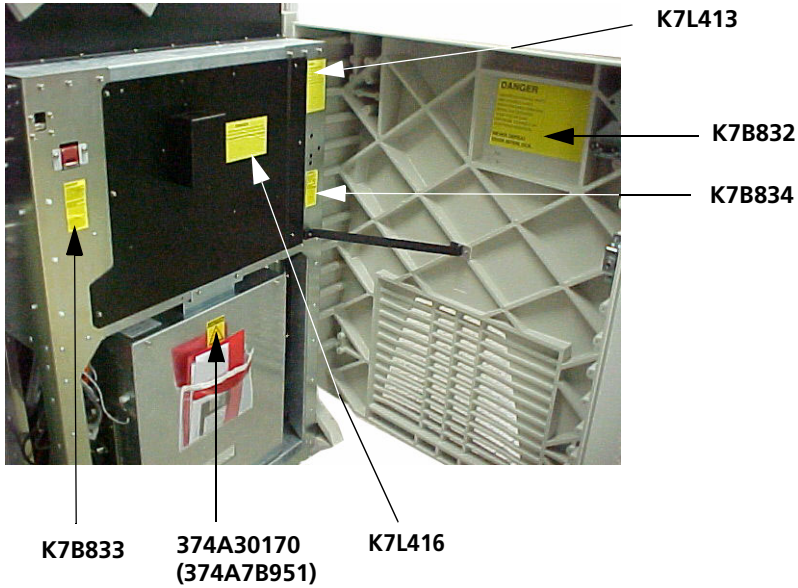


Figure 7: Right side door open

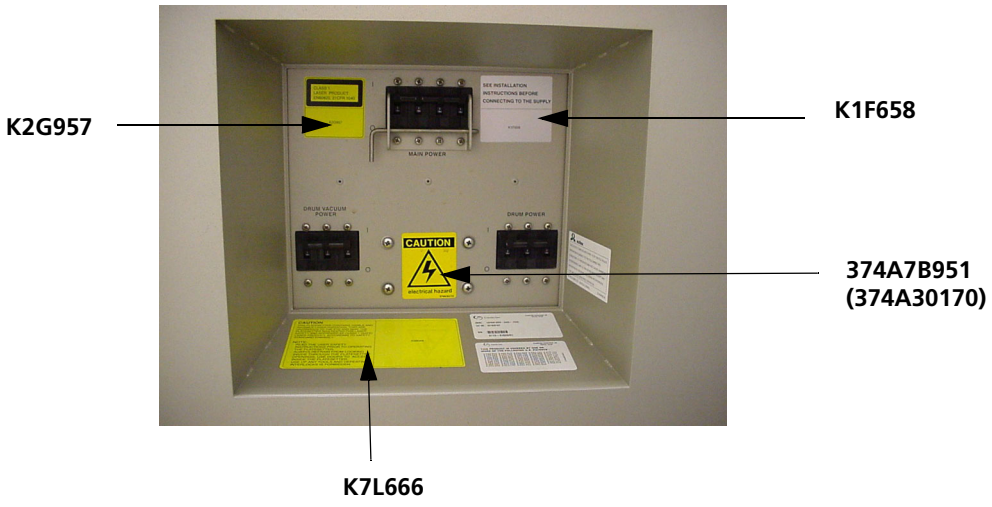


Figure 8: Distribution box

Drum Safety Precautions

The Lotem 800 platesetter contains a drum that revolves inside the platesetter. The plates are loaded, wrapped onto the drum, exposed and unloaded.

The Drum revolves normally at **900** revolutions per minute.
If an object hits the rotating drum, the object may get dislodged inside the platesetter and cause damage (including damage to the safety system and Laser head), or force the upper doors to open, or penetrate through the doors.

Opening the upper doors is initiated from the PC Controller. This activates the solenoids that release the upper door locks, thus enabling the user to open the door. By this time, the drum must be almost stationary.



WARNING: If after the drum door is unlocked, it takes **more than 5 seconds** for the drum to become completely stationary, the machine must be repaired. Shut off the machine and call your service engineer.

Since serious personal injury to the operator, service engineer or anyone in the vicinity may occur by the revolving *drum*, the following precautions must be followed:



WARNING: Do not insert your fingers or hands anywhere near the drum, as they may get caught in the narrow gaps in the drum area!



WARNING: Be sure not to leave any object, tool or part inside or on the platesetter enclosure. if an object gets lodged, it may penetrate through the enclosure and injure a person standing nearby.



WARNING: You are **forbidden**, under any circumstances, to defeat any interlock switch!



WARNING: If the service engineer has defeated the Drum interlock and the door is open, **do not** stand at any distance in front of the platesetter. **Do not** touch any moving part while it is in motion.



WARNING: If you need to open the cover for releasing stuck plates or other maintenance, remove any piece of clothing or object that may get caught in the revolving drum or other moving parts. Remove ties, roll up long sleeves, remove jewelry and gather long hair.

Vacuum Pump

The vacuum pump connected to the platesetter is part of the Lotem 800 configuration. The vacuum pump contains a filtering device that extracts dust, fumes, contaminants and solvent vapors that appear within the platesetter during normal operation and need to be removed.

The filter may be replaced only by the service engineer!



WARNING: The filtering device has been constructed according to recognized technical safety regulations. Nevertheless, danger to life of the user or third parties or damage to property can occur if the filter is not handled properly.

Handling Plates

Loading Plates



CAUTION: The plate edges are sharp so it is recommended that you wear gloves when loading plates into the cassette.



CAUTION: As the plates are heavy, you should roll the Cassette loading trolley to the plate location and avoid carrying the plates.



CAUTION: Be careful that your fingers do not get caught when closing the cassette cover.

Removing Stuck Plates

Special precautions are required when removing a plate that got stuck inside the platesetter.



WARNING: Before removing a plate, switch off the **Main Drum Power** switch on the Distribution box.



WARNING: Before removing a plate, remove objects or clothing that might get caught in the revolving drum or other moving parts, such as ties and jewelry. Fold long sleeves and gather long hair.

It is recommended to release the entire plate as one piece; do not attempt to cut the plate.

Electrical & Pneumatic Connections



WARNING: Do not change the power supply installed by the service engineer. Do not alter any electric wiring. Do not alter the pneumatic tubes.

Lithium Battery

The platesetter contains a Lithium battery. The battery **cannot** be replaced by the user. Only qualified service personnel, are allowed to replace it.



WARNING: Danger of explosion if battery is incorrectly replaced.