Kodak

Magnus 800 Platesetter

S, F, V, X, Z-Speed

Safety Guide for Service Engineers

English

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About the Magnus 800 Platesetter

Extensive care was taken in the design and manufacturing of the Kodak® Magnus™ 800 platesetter to eliminate hazards to operators and service personnel.

The Magnus 800 platesetter is a Class 1 laser product, according to International Safety Standard IEC60825-1 and USA regulation 21 CFR 1040. This implies that there is no hazardous laser radiation provided that safety guides are followed.

The speed of the Magnus 800 platesetter is determined by the type of thermal head installed on the device, see Table 1.

Thermal Head	Platesetter Speed
TH1.7	S, F
TH2.5	V, X
TH3	Z

Table 1: Thermal head types and their different speeds

About This Safety Guide

To ensure your safety and the safety of others, carefully read and follow the safety precautions in this guide before installing, operating, servicing, or maintaining the Magnus 800 platesetter.

WARNING: If you are installing, operating, servicing, or maintaining a Magnus 800 Z-speed platesetter (TH3), you must also read and follow the Safety Guide for Magnus 800 Z-Speed Platesetters, beginning on page 31.

WARNING: For operator safety guide, see Magnus 800 Safety Guide for Operators.

Important: The colors of the platesetter depicted in this guide may differ from the colors of the platesetter at the customer's site.

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.

Magnus 800 Platesetter Views



Figure 1: Front view

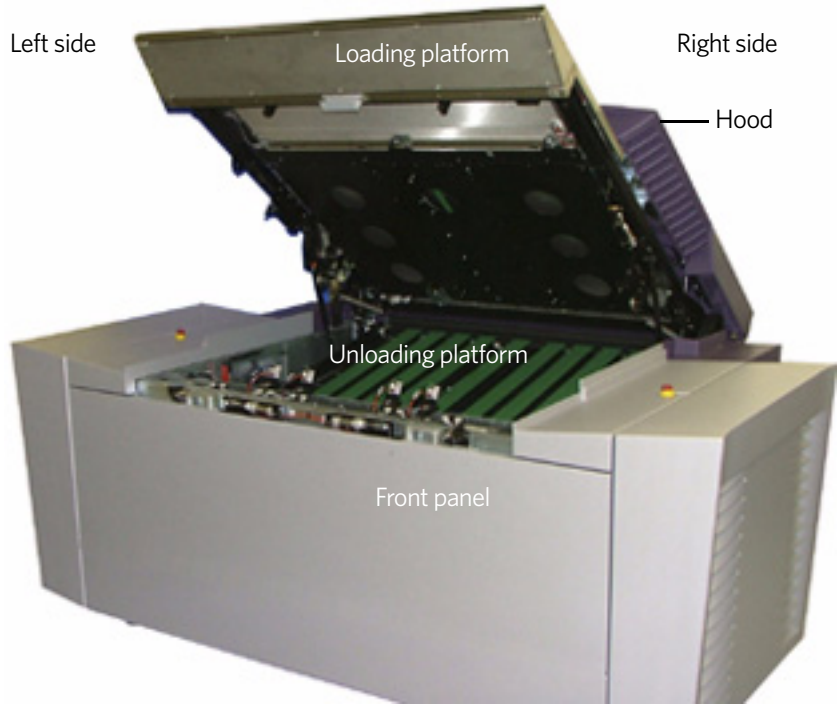


Figure 2: Front view with hood and loading platform raised



Figure 3: Rear view



Figure 4: Left side view

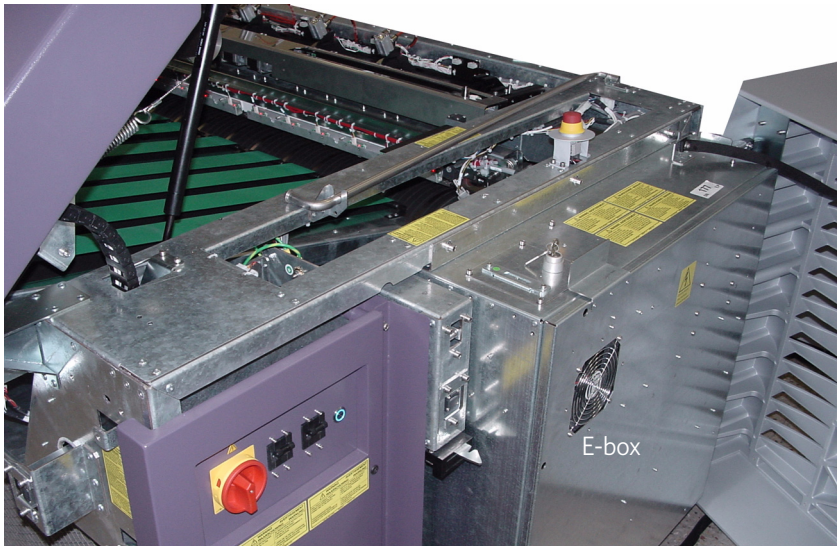


Figure 5: View of E-box inside the left side door



Figure 6: Right side view

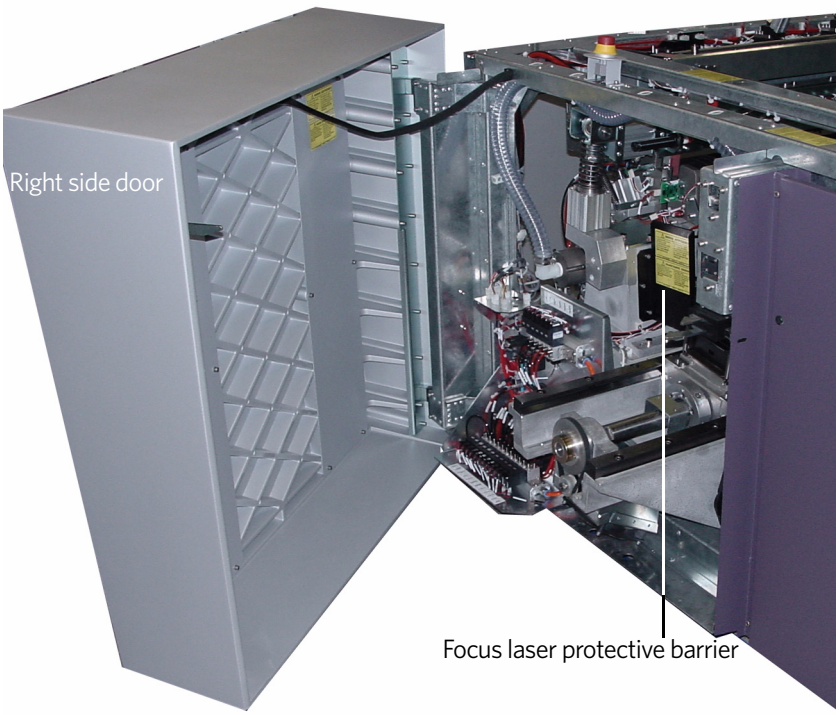


Figure 7: View of focus laser protective barrier inside the right side door

Before Beginning Service

Never perform service on the platesetter until you complete the following precautions:

- Post the following sign close to the keyboard and close to the platesetter: **WARNING**: Machine in service—do not operate.
- Remove any clothing or object that could get caught in a moving part of the platesetter. For example, remove ties, roll up long sleeves, remove rings and bracelets, and gather long hair.
- Remove any reflective objects such as jewelry, wristwatches and so on from your hands, wrists, and shirt. Use non-reflective tools. This reduces the risk of hazardous laser reflection in case of a failure in the laser interlock system or in a protective barrier.

General Safety Precautions

- Read the Magnus 800 Platesetter Safety Guide for Operators—an indispensable part of the platesetter service safety instructions.
- Many service procedures can be performed when the entire platesetter or some of its assemblies are turned off. Whenever possible, perform service when the platesetter is off.



WARNING: It takes the drum a few seconds to stop rotating when either the platesetter power supply is disconnected or when an emergency stop button is pushed.

- Keep all external doors and internal protective barriers of the platesetter complete and undamaged.



WARNING: Never defeat the interlock switches, except as permitted in "Defeating the motors and focus laser interlock" below—using only the intended motor's red metal defeater and the intended rotary focus laser defeat key.



WARNING: The beams and radiation are hazardous. The write laser is invisible to the eye.

- Avoid defeating the motors and focus laser interlock unless absolutely necessary.



WARNING: Never leave any object between the optical head and the drum.



WARNING: If there is any doubt regarding the proper function of the interlock system or if you suspect that the platesetter protective cover or barrier is broken, cracked, or otherwise damaged, turn off the platesetter. Do not turn the platesetter on until you have checked and fixed the problem.

Power and Electrical Components

Many service procedures can be performed when the entire platesetter or some of its assemblies are switched off. Whenever possible, turn off the platesetter before performing service.

Electrical Safety Precautions

Electrical safety is provided by grounding the platesetter, electrical enclosures (earthed metal boxes that require a tool for opening), and double insulation of wires that carry hazardous voltages.

The electrical enclosures may have warning labels with the symbol of lightning in a triangular border (see label 374A7B951).



WARNING: The platesetter must be grounded. See Power Line on page 7.



DANGER: The electrical hazards in the platesetter are not neutralized by either interlocks and/or emergency stop switches.



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



WARNING: Do not alter the internal grounding.



WARNING: Whenever there is potential exposure to an electrical hazard, it is always preferable to turn off the platesetter by the rotary main switch.

Power Line

The total power consumed by your system depends on the specific site configuration. See the “Magnus 800 Site Preparation Guide”.

All voltage settings, fuses, and cords should be in full compliance with local standards.

Magnus 800 platesetter connections:

- Rating: 200–240 Vac
- Line voltage
  - ❒ Two-phase supply in a 120 V configuration
  - ❒ One-phase and neutral in a 230 V configuration
- Supply frequency: 50Hz in 230 V configuration. 60 Hz in 120 V configuration +/- 1.5%



WARNING: Vacuum pump rating (50 or 60 Hz) must fit the supply frequency.

- Power line connections *must* include three pins: two phases and one safety ground.



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

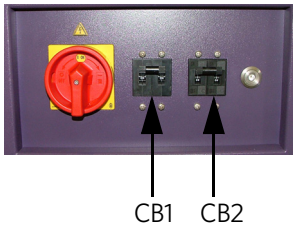
- The cable connector (male, 3-pin: 2 phases and safety ground) is supplied with the platesetter.
- For branch circuit requirements, see “Magnus 800 Site Preparation Guide”.

Debris Removal Cabinet connections:

Refer to the “UDRC Site Preparation and Requirements”.

Disconnection from Main Power

The platesetter is equipped with a lockable, main power rotary disconnect switch, located on the circuit breaker box, on the left-rear panel. Also located on this box is an **on/standby** button and two additional circuit breakers. Circuit breaker CB1 is for the three internal power supply units and an autoloader, circuit breaker CB2 is for the drum, fans, and chiller.



A special circuit breaker for the drum vacuum pump is located internally near the vacuum pump, behind the rear-lower panel:



Note: Emergency stop buttons are located on the upper-right and upper-left of the platesetter. Pressing either of these buttons will stop the operation in progress, but will not disconnect the platesetter from the power supply.

WARNING: Total disconnection from the main power can only be achieved by deactivating the main power rotary circuit breaker (set to “0”) or by unplugging the main power cable from the main power.

WARNING: During service, when the main power rotary circuit breaker is set to "0", always use the intended main switch locking element in order to keep the platesetter in an off position. This locking element acts as a safeguard in case somebody accidently attempts to turn on the platesetter.

Disconnection from Pneumatic Air Pressure

The Magnus 800 platesetter receives pneumatic air pressure from the filtration unit located on the wall.

WARNING: Before working with any pneumatic component, shut down the air pressure valve and discharge the air pressure from the system.

Lithium Battery

The CPU board in the platesetter workstation contains a lithium battery.



WARNING: If the battery is incorrectly replaced, there is a danger of explosion.

The battery *must not* be replaced by the operator. Only qualified service personnel may replace the battery.

Precautions to take when replacing the battery:

- Turn off the power by pulling out the power cord from the workstation.
- Follow the battery manufacturer's instructions.
- Replace the battery with the same or equivalent type recommended by the manufacturer.
- Never short the battery terminals.
- Install the new battery in the correct polarity.
- Dispose of the used battery according to the manufacturer's instructions.

Drum Safety Precautions

The *Magnus* 800 drum revolves inside the platesetter at about 550 revolutions per minute.
The plates are loaded, wrapped onto the drum, exposed, and unloaded. Special safety mechanisms, that include solenoids and an interlock system, prevent operator access to the drum while the drum is rotating.
If an object hits the rotating drum, the object may get dislodged inside the platesetter and cause damage (to the safety system, laser head) or the platesetter enclosure.



WARNING: Do not leave any object, tool, or part inside or on the platesetter enclosure. A loose object inside the enclosure may be hit by the revolving drum and create a safety hazard.

To prevent the operator from accessing the drum while it is revolving, the following covers are equipped with solenoids that lock the covers in a closed position. After a command is issued from the workstation the solenoids unlock these covers, only when the drum has stopped revolving.

- Hood (upper cover)
- Loading platform

Service access to the drum area through interlocked machine panels or the side doors requires the use of tools. During such access, the service person is exposed to the revolving drum for several seconds (opening of the interlocked door or panel activates the resistive brake mechanism, that takes a few seconds to stop the drum).



WARNING: Do not touch or get close to the revolving drum, drum motor, and the drum motor's belt.

WARNING: When you open the hood or the loading platform from the workstation, if the drum is not completely stationary within 3 seconds after the door is unlocked, you must repair the device.

WARNING: If you activate the motors' defeater, all motors can work.

WARNING: When you stop the drum with the emergency stop switches, or by turning the machine off, it takes a few seconds for the resistive brake mechanism to stop the drum rotation.

Precautions to take when accessing the drum area:

- Before performing service, 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.
- Never stand in front of the drum, when the front panel has been removed and simultaneously, the motor's interlock is defeated by the red defeater inserted into the defeater switch.
- Also if the motors' interlock is defeated and the covers or panels are open, make sure that no one is standing in front of the drum—even if the drum is stationary at the moment.
- When the motor interlock is defeated, the drum revolves much slower than 550 rpm, but still revolves forcefully. Therefore, keep your hands off the drum area all the time that the motor interlock is defeated.

Gripper (TEC/LEC) Actuators

Before working with any pneumatic component, it is preferable to shut down the main air pressure valve (located at the air pressure unit on the wall), and discharge the air pressure from the system. If actuation of the TEC /LEC is required and air pressure is therefore on, do not access the TEC /LEC area, in addition, make sure that no one else is near the TEC /LEC area.

WARNING: Never put your hand or fingers underneath the TEC/LEC grippers or gripper actuators. If air pressure remains in the system, your fingers might get caught in a pneumatic component, such as the gripper actuators.

WARNING: Make sure not to leave any TEC (magnetic gripper element) attached to the drum, unless it is well attached in its intended place.
The revolving drum may cause badly attached elements to become dislodged and cause a hazard.

- Take special care when handling the TEC as its edges are sharp.
- When installing the TEC onto the drum, make sure the magnet is firmly pushed down and secured to the drum. Failure to do so will result in the TEC flying off.
- Make sure you install the TEC on the drum according to the label depicted in Figure 8 on page 11:

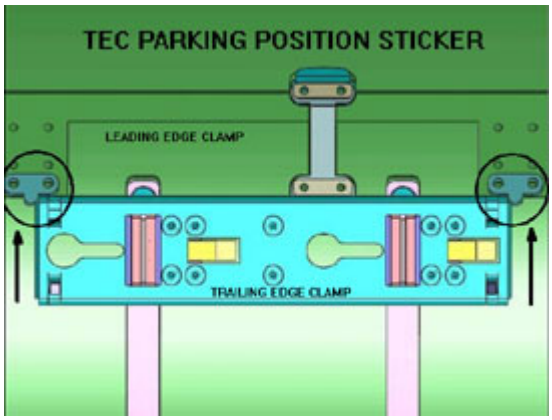


Figure 8: TEC in parked position

Emergency Stop Buttons

There are two emergency stop buttons one on either side of the upper surface of the platesetter. Also there is one emergency stop button behind the front panel. Pressing an emergency stop button causes the drum to cease rotating and cuts power to all motors.
During normal platesetter operation, or during service, when the doors are open and the interlocks are defeated, press the emergency stop button to almost immediately stop the motors from operating.

WARNING: When the emergency button has been pressed, it may take a few seconds for the drum to come to a complete standstill.

Note: If the emergency button is released, it will not reactivate the motors. The motors can only be reactivated in the Magnus 800 Controller software.

Note: Pressing a platesetter emergency stop button turns off the write and the focus lasers.

WARNING: Never rely on activating an emergency stop as a precaution against exposure to laser because damage to the eye may occur much more quickly than your ability to press the emergency stop button.

Safety Interlocks

Safety interlock switches provide protection against the severe laser and mechanical hazards provided that you follow all the safety precautions in this guide.

The safety interlock switches are located on doors and panels of the platesetter (for details, see Table 2 on page 13).

The interlock switches disconnect power from the laser head (write and focus) and from the motors, including the drum motor, when either the hood or loading platform are open, and/or the side door is open, and/or a panel is removed



WARNING: The interlock switches do not disconnect electrical power from the vacuum pump, chiller and fans. These elements are therefore able to operate while the hood, doors or panels are open. Disconnect main power before servicing these elements.



WARNING: It takes up to three seconds for the laser interlock system to shut off the laser sources. Therefore, when opening a door or panel, do not hurry to access the inside of the platesetter.



WARNING: The hood and loading platform, and each of the panels have two interlock switches. Each side door has only one interlock switch. In order not to depend on the reliability of a single switch, keep the hood or one of the panels open when a side door is open. However, when the autofocus laser defeat is activated, the two side doors are open and the hood and all panels must be closed (see page 15).



WARNING: The service engineer is forbidden under any circumstances to defeat any of the interlock switches, except the intended motor interlock defeater switch, and the intended focus laser rotary key defeater switch
(shown on page 16).

The following table is included to provide the service engineer/personnel with information about the safety measures and controls included in the platesetter.

Table 2: Locations, functions and descriptions of the platesetter safety interlocks.

Location	Function	Description
Hood/Loading platform - right side	Disable lasers and motors	1 safety interlock switch
Hood/Loading platform - left side	Disable lasers and motors	1 safety interlock switch
Left side door	Disable lasers and motors	1 safety interlock switch 1 interlock defeat push switch 1 focus laser interlock defeat rotate key 1 emergency stop button close to the door **Note:** To defeat the motors' interlock, the push switch must be pressed in. To defeat the focus laser interlock (and simultaneously the motors' interlock), the push switch and the rotate key must be activated.
Right side door	Disable lasers and motors	1 safety interlock switch 1 emergency stop button close to the door
Front panel	Disable lasers and motors	1 safety interlock switch
Inside (behind) front panel - center	Disable lasers and motors	1 emergency stop button
Upper rear panel - right side	Disable lasers and motors	1 safety interlock switch
Upper rear panel - left side	Disable lasers and motors	1 safety interlock switch

Note: For those doors or panels equipped with two interlock switches, each switch provides backup for the other switch, therefore the interlock system's reliability is enhanced.



DANGER: If the hood or door or panel is open and if a safety interlock is defeated, or if the safety interlock system failed, then severe mechanical hazards and visible and/or 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!



WARNING: If there is any doubt regarding the proper function of the laser interlock system, or if you suspect that the platesetter protective cover or barrier is broken, cracked or otherwise damaged, turn off the platesetter. Do not turn the platesetter on until you have checked and fixed the problem.

Defeating the Motors' Interlock

The service engineer is allowed to defeat the motors' interlock using the intended red metal defeater, see page 16.



WARNING: If you must defeat the motors' interlock, use only the dedicated defeater (part number 290B2P411) that is supplied for Magnus 800 service. Use of any other interlock defeater is unsafe and forbidden.



WARNING: Upon motors' interlock defeat, all motors are able to move and create severe mechanical hazards. Keep hands and other body parts clear of movements' areas.



WARNING: Make sure that no one is standing in front of the drum when the motors' interlock is defeated.



WARNING: Never leave the room when a motors' interlock is defeated.

Laser Interlocks

The Magnus 800 platesetter contains a highly hazardous thermal imaging head that exposes the media. The imaging head uses two separate laser emitters:

- Invisible write laser
- Visible (red) auto focus laser

Both laser sources are turned off by the interlock system.

If a failure is detected in the operation of the laser interlock system, a warning message appears in *Magnus* Controller and the laser shuts off.
In any case, not every possible failure in the interlock system can be detected.

Write Laser

The write laser beam is invisible to the eye (class IV, approximately 830 nm).



DANGER: The laser output can cause severe and permanent eye and skin damage and is a fire hazard in the presence of flammable materials. Even brief exposure of the eyes to the write laser radiation or beam, or its reflections from shiny or matte objects, may cause permanent loss or permanent degradation of eyesight.



WARNING: The service engineer is forbidden under any circumstances to defeat any of the interlock switches.



WARNING: It takes up to three seconds for the laser interlock system to shut off the laser sources. Therefore, when opening a door or panel, do not hurry to access the inside of the platesetter.

Auto Focus Laser

The auto focus laser is visible (red) (class IIIB, approximately 670 nm).



WARNING: Do not look into the auto focus laser beam or at any reflections of the focus laser beam from any objects. Direct eye exposure to the laser beam, or its reflection can cause permanent eye damage.

Defeating the Auto Focus Laser - Basic Precautions

- The auto focus laser safety interlock may only be defeated by authorized service engineers/personnel.
- The auto focus laser safety interlock is intended to be defeated only when performing focus alignment.
- When the interlock defeaters are activated, ensure that everybody in the room also follows these safety instructions.
- Never leave the platesetter when the motors' interlock defeater is activated, or the rotary focus laser defeat key is inserted.
- Before defeating the focus laser interlock, make sure the focus laser protective barrier is installed next to the right side of the carriage (Figure 7 on page 5). This barrier blocks radiation reflected in parallel to the drum, in cases when the laser beams may hit any object except the flat plate.
- Position yourself so that the path of the beam (between the head and the drum) is concealed by the side protective barrier. Watch either the alignment LEDs, located in the head or the monitor.
- Make sure that a plate is correctly loaded, wrapped around the drum and secured by the TEC/LEC.

Defeating the Auto Focus Laser, Details and More Precautions

- Ensure that the focus laser beam originating from the laser head will not be reflected by any object, except the plate wrapped on the drum.

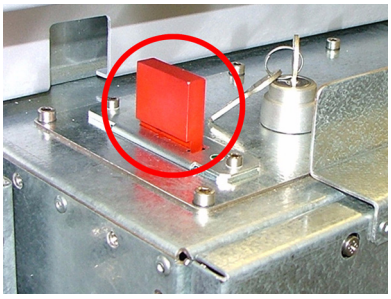
Note: The loaded plate should cover the drum very close to the drum edge, so the laser head can be conveniently close to you at the right side of the platesetter. This conveniently enables you to reach the screws involved in the alignment process.

- Ensure that the carriage and the drum are static and oriented so that the laser beam hits the plate about 5 cm from the plate edge, and far away from the TEC/LEC and from the plate edges. Keep the hood and loading plate closed. Access the laser head alignment screws by only opening the platesetter right door.



WARNING: Hazardous laser radiation, if any door, panels or hood, except the right and left side doors, are open during autofocus laser defeat.
Direct eye exposure to the laser beam, or its reflection can cause permanent eye damage.

- Insert the red defeater into the defeater switch:

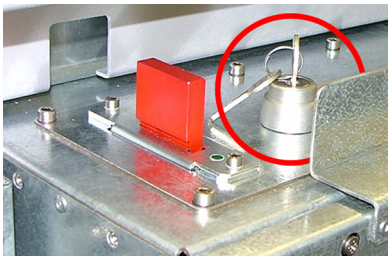


Note: The motor's interlock must be defeated before defeating the focus laser interlock.

WARNING: Beware of mechanical hazards when the motor's interlock is defeated.

WARNING: If you only need to defeat the motors' interlock, do not insert the key into the focus laser defeater rotate switch.

- Insert the key into the focus laser defeater rotate switch and rotate the key:



WARNING: Do not look into the auto focus laser beam or at any reflections of the focus laser beam from any objects. Direct eye exposure to the laser beam, or its reflection can cause permanent eye damage.

Laser Safety Precautions

General



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

The platesetter is equipped with a highly hazardous laser system. However, the platesetter is a Class 1 laser product according to International Safety Standard IEC60825-1 and USA regulation 21 CFR 1040. This implies that the operator and service engineer cannot access hazardous laser radiation provided that the safety guides are followed.



WARNING: The write laser beam and radiation are invisible and are hazardous to the eyes and skin. Even brief exposure of the eye to the laser radiation or beam, or its reflection from shiny or matte objects may cause permanent loss or degradation of eyesight.



WARNING: It takes up to three seconds for the laser interlock system to shut off the laser sources. Therefore, when opening a door or panel, do not hurry to access the inside of the platesetter.



WARNING: In the presence of flammable material, the write laser beam is also a fire hazard.



WARNING: The focus laser beam and radiation are hazardous to the eye. Even brief exposure of the eye to the focus laser radiation or beam, or its reflection from shiny objects may cause permanent loss or degradation of eyesight.



WARNING: If there is any doubt regarding the proper function of the laser interlock system, or if you suspect that the platesetter protective cover or barrier is broken, cracked or otherwise damaged, turn off the platesetter. Do not turn on the platesetter until you have checked and fixed the problem.



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 were violated, **disconnect** the power supply to the platesetter before entering the room.

Thermal Imaging Head



DANGER: Several tens of watts of invisible laser radiation at a wavelength of 810-860 nanometers and tens of milliwatts at a wavelength of 670 nanometers 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.



WARNING: Do not activate the laser head if it is removed from its position on the guide beam. Do not activate the laser head if 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.

Enclosures

Together with the laser interlock system, the platesetter enclosure is designed to protect anyone in the platesetter area from exposure to laser radiation. The enclosure includes the external doors and panels, and the internal protective barriers. Protective barriers, that may be dismantled by the service engineer have warning labels on them indicating that the barrier must be in place. The internal protective barriers prevent the laser radiation from escaping through the platesetter loading/unloading openings, the ventilation openings and the gaps between the external doors and panels. This protection depends upon the completeness and correct assembly of the outer enclosure and the internal protective barriers.



WARNING: After performing any service activity and before turning on the platesetter, check and ensure that all external enclosures and doors, and internal protective barriers, are intact (not broken or cracked) and correctly assembled on the platesetter.



DANGER: If the platesetter is on and the enclosure is damaged or incomplete, even with the external doors closed, then hazardous visible and/or invisible laser radiation may be present. This 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 loss of eyesight!

Remote Support

- If remote support is accessed, the Magnus 800 platesetter can be operated in parallel from both a local (on site) and a remote location (remote response center).
- Therefore, if an interlock is defeated, and the platesetter is operated from a remote location, the service engineer or a Kodak certified operator, maybe exposed to hazardous motor and/or focus laser radiation.
- The platesetter can be operated in theory, but not in practice, via a remote location under either of the following three conditions:
- Platesetter doors, panels, and hood are closed. This is the safest method of remotely operating the platesetter.
- Doors and panels that have no interlocks are open. This is an unsafe method of remotely operating the platesetter, and should therefore be avoided.



WARNING: It is strictly forbidden to remotely operate the platesetter if any doors and panels that have no interlocks are open.

- Doors and panels that have interlocks are only defeated by service engineers or Kodak certified operators. This is a potentially unsafe method of remotely operating the platesetter, and it should be only employed when strictly adhering to the warnings below:



WARNING: The remote response center must contact the local site by telephone before they begin to operate the platesetter from a remote location.

WARNING: Only service engineers and Kodak certified operators are allowed to defeat interlocks.

WARNING: When the platesetter is operated from a remote location, it is forbidden to defeat the focus laser interlock. The write laser interlock must never be defeated.

Remote Operation Safety Precautions

The response center must request permission from the local site before the platesetter can be remotely operated.

The following request message will appear on the local monitor (at the site): Machine Name\User Name is requesting to control your session remotely. Do you accept the request? The request message has a time-out of 30 seconds. If the request is not approved within 30 seconds, then the request is automatically cancelled. Either the service engineer or Kodak certified operator must click Yes (within 30 seconds) to accept the request and activate remote support.

WARNING: Before accepting a request message to operate the platesetter from a remote location, make sure of the following:

- Service engineer and/or Kodak certified operator must make sure that no person can be potentially exposed to either mechanical or focus laser hazards.
- Focus laser interlock must not be defeated by using the defeat rotate key, before accepting a remote support request, and must not be defeated during a remote support session. The write laser interlock must never be defeated.

Remote support can be terminated (disconnected) by either of the three following methods:

- Via the remote response center's computer
- Via the local computer.
  To disconnect the remote support from the local computer, double-click the remote support icon, located on the local desktop:

  A confirmation message appears. Click **Yes** to terminate the session, or click **No** to continue the session.
- By activating an emergency stop button.

Panels

The Magnus 800 platesetter panels are especially designed to minimize the amount of risk to the service engineer.

- Each removable upper panel is supported by a lower panel beneath it. Therefore, when the screws are removed from an upper panel, it still sustains support from the lower panel. Ergonomically this makes it easier to remove and reinstall panels.
- The underside of each panel is folded. This eliminates sharp panel edges.
- When installing or dismantling panels, it is ergonomically advisable to either grip the panels by their handles or by their folded edges.

Cable Covers

During the installation procedure, Kodak personnel install cable covers to shield cables. Make sure the cable covers are not damaged and remain intact. Do not permanently remove any cable covers that would otherwise expose any cables.



Debris Removal System

The Magnus 800 configuration includes a filtering device—the Universal Debris Removal Cabinet (UDRC)—a separate component connected to the platesetter. The UDRC extracts dust, fumes, contaminants, and solvent vapors that appear within the platesetter during normal operation and must be removed.



WARNING: Please refer to the debris removal system manufacturer's operating and safety instructions.



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

Precautions to take when replacing filters:

- Only a service engineer may replace the filter.
- Handle and dispose of filters according to manufacturer's instructions and the maintenance procedure in TechPlanet.

Plate Handling

The edges of the plates are sharp. Improper handling can result in cuts to the hands.



CAUTION: Wear gloves when handling plates.

Cooling System

The platesetter cooling system contains a water-based coolant to cool the thermal head. The cooling system is sealed to prevent coolant leakage. However, if coolant leakage inside the head occurs, it may cause electrical shock and fire hazards due to hazardous voltage inside the thermal head.

To prevent coolant leakage, the cooling system pump contains a safety valve that does not allow pressure to build to greater than 65 psi. Before shipment, the pump valves are tested for opening (release of pressure) point in the range of 60–65 psi. After passing this test, the pump is labeled accordingly.



DANGER: If the coolant leaks and the platesetter is not turned off, electrical shock and fire hazards are present.

Precautions

- During maintenance, or when you perform service on the cooling system, follow the "Cooling System Pressure Test" maintenance procedure on TechPlanet.
- If you replace the pump, verify that the new pump has the test label.

E-box



WARNING: Severe electrical hazards exist inside the E-box. It is always preferable to turn off the plate setter rotary main switch before opening the E-box.
If turned off, lock the main switch in its **Off** position, to prevent it from accidentally being turned on.
Note: Hazardous voltages are mostly conducted in cables (double-insulated, as opposed to wires that are singly insulated). It is safe to touch double-insulated cables.



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

The E-box includes both hazardous voltages and safe low voltages. Modules or boards that contain hazardous voltages include the following:

- Each of the three power supply units
- Power distribution and interlock board
- Resistive brake board
- Drum motor (*Kollmorgan*) driver module and its external load resistor
- Relay/contactor for drum motor driver

Electrical cables and wires are routed inside the E-box.
The separation between safe low voltage cables and wires, to hazardous voltage cables, wires, and boards, is essential to the electrical and fire safety of the platesetter. This separation is provided by well defined routing and by plastic straps (tie-wraps) used for securing each cable and wire in its intended place.
The service of the E-box, including replacement of modules and boards, should not require cutting the tie wraps.



WARNING: After you complete service inside the E-box, and before switching the main power rotary switch ON, you must ensure that all inside modules and boards are secured in place and all electrical wire and cables are correctly routed and secured.



WARNING: If the location of a malfunction requires the cabinet to be open while there is still power available, you must be extremely cautious not to touch either hazardous voltage boards and/or singly insulated wiring.



CAUTION: Always wear an anti-static wrist band when handling electronic boards. This prevents electrostatic discharges that harm sensitive electronic circuits.



CAUTION: Before replacing any electronic board, remember to turn off the platesetter.

Status Light Board

The status light board contains light emitting diodes that are hazardous to the eye if viewed without the status light cover.

- Always disconnect the cable leading to the status light board before dismantling the status light cover.
- Only connect the cable to the status light board when the status light cover is entirely covering the status light board.



CAUTION: Do not connect the cable to the status light board, unless the board is covered by the status light cover.



CAUTION: Class 2 LED light when open. Do not stare into the beam.

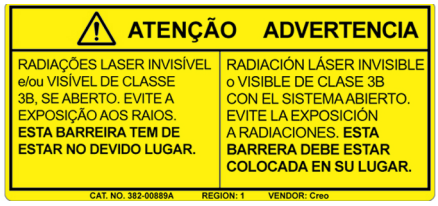
Warning Labels

The warning labels are provided for both operator and service personnel safety. Always comply with the labels' warnings.
Make sure the warning labels are in good condition. If required, replace damaged warning labels.

The following pages depict the warning labels and their locations.



Label 1: 382-00888A



Label 1: 382-00889A



Label 3: 382-01051A



Label 3: 382-01052A



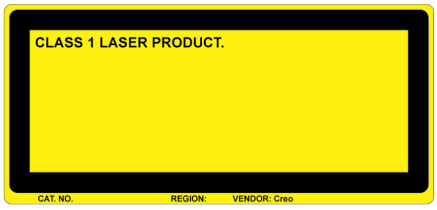
Label 4: 382-01068A



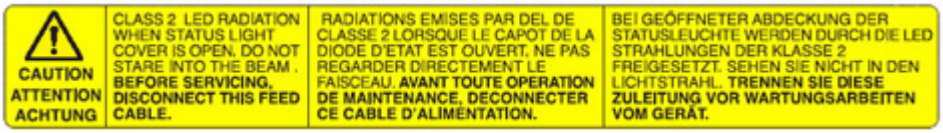
Label 4: 382-01069A



Label 12: 382-01004A



Label 21



382-01776A



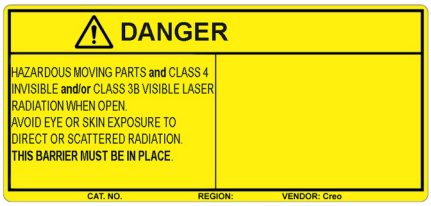
Label 2: 382-00956A



Label 16: 382-01016A



Label 19: 382-01028A



Label 20



Part number: 374A9C009



Part number: 374A7B951



Part number: 374A7B6787

Warning Label Locations



Figure 9: View of left side with side panel removed

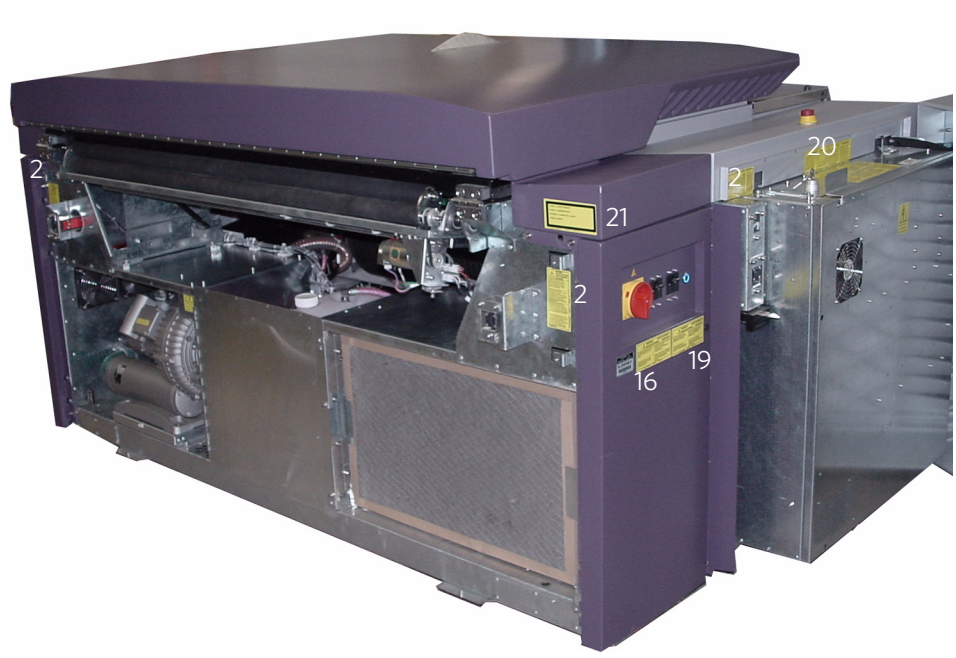
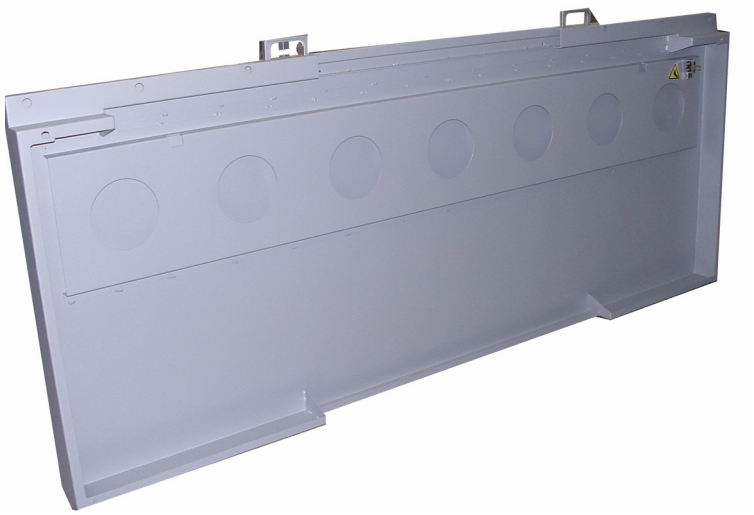
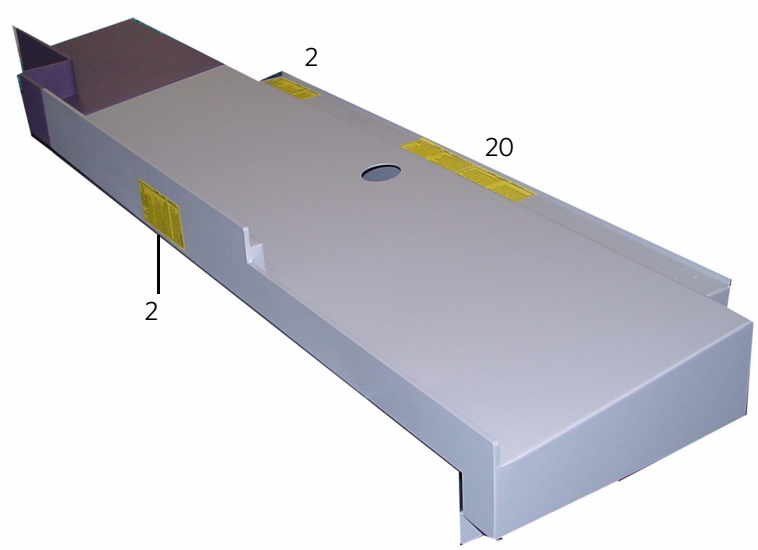


Figure 10: View of left side and rear side



PN 374A9C009

Figure 11: Reverse side of front panel



Note: The same labels appear in the same positions on both the right side panel and left side panel.

Figure 12: Right side panel



Note: The same label appears in the same position on both the right side panel and left side panel.

Figure 13: Inside of left side panel

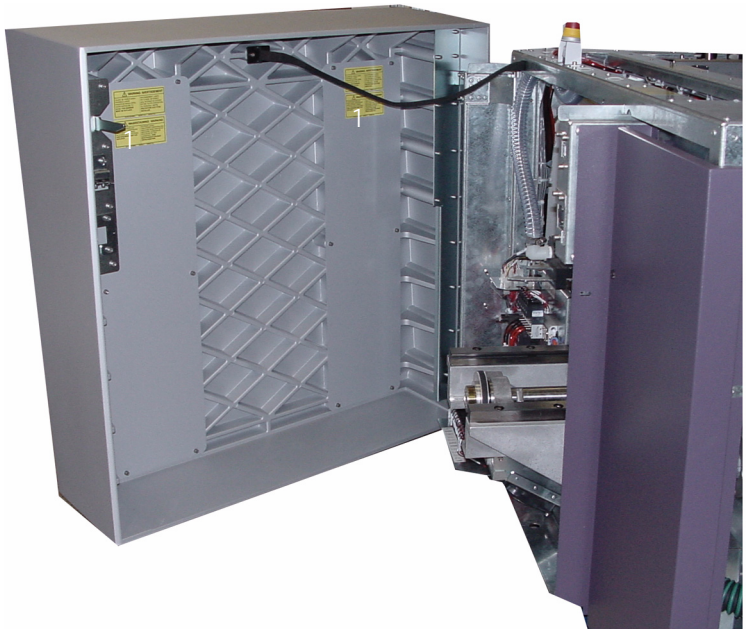


Figure 14: Interior of right side door

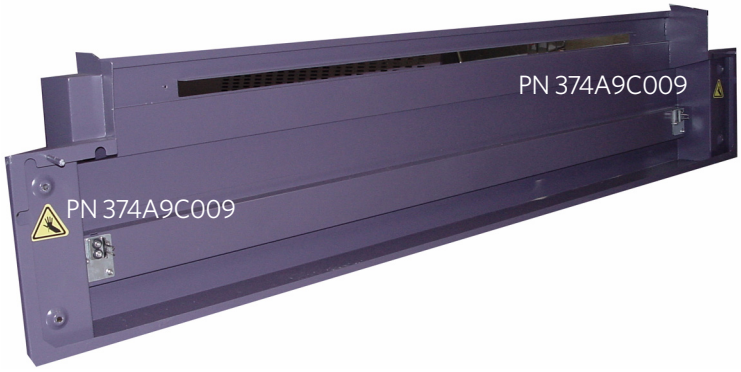


Figure 15: Reverse side of rear-upper panel



Figure 16: Label on internal protective barrier

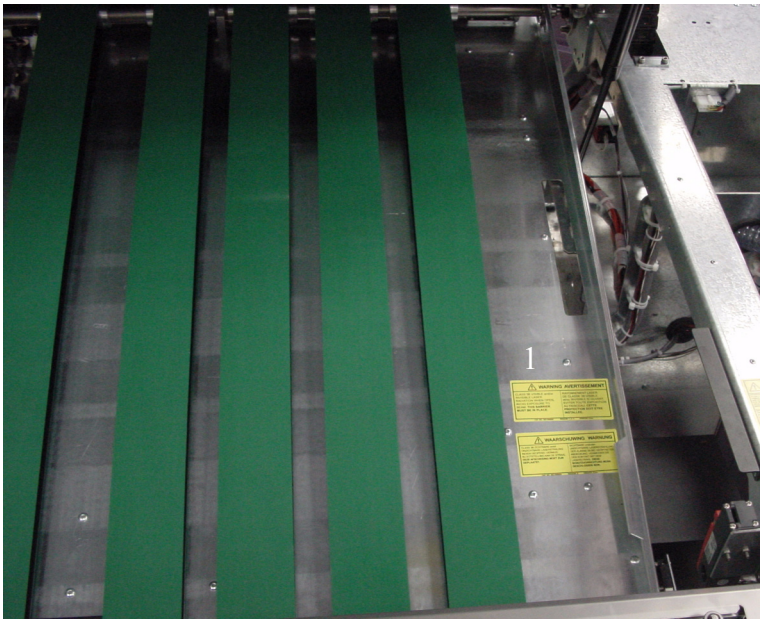


Figure 17: Right side of unloading platform

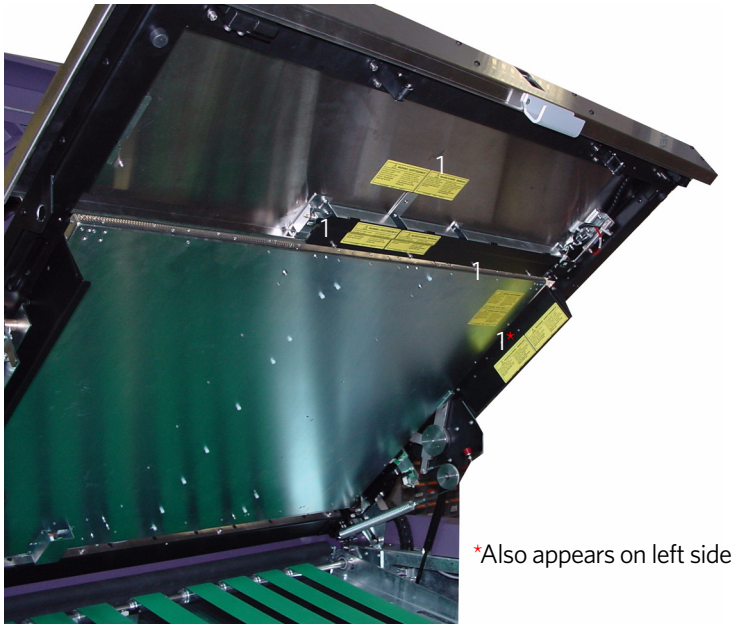


Figure 18: Hood and loading platform raised



Figure 19: Interior view of left side

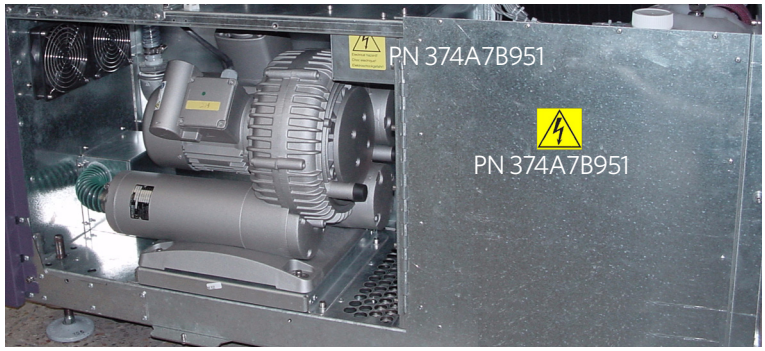


Figure 20: Rear-lower side

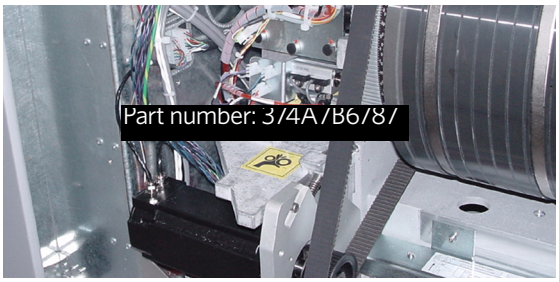


Figure 21: Front of platesetter (lower-left behind front panel)



Figure 22: Platesetter with raised hood

Safety Guide for Magnus 800 Z-Speed Platesetters

Magnus 800 Z-speed platesetters contain a thermal 3 head (TH3).
To ensure your safety and the safety of others, carefully read and follow these additional safety guides before installing, operating, servicing, or maintaining a Magnus 800 Z-speed platesetter.

Magnus 800 Z-Speed Platesetter Views

The rear side of a Magnus 800 Z-speed platesetter is different to that of the Magnus 800 s, f, v, and x-speed platesetters.

In addition, some versions of the Magnus 800 Z-speed platesetters have ventilation holes located on the rear side.

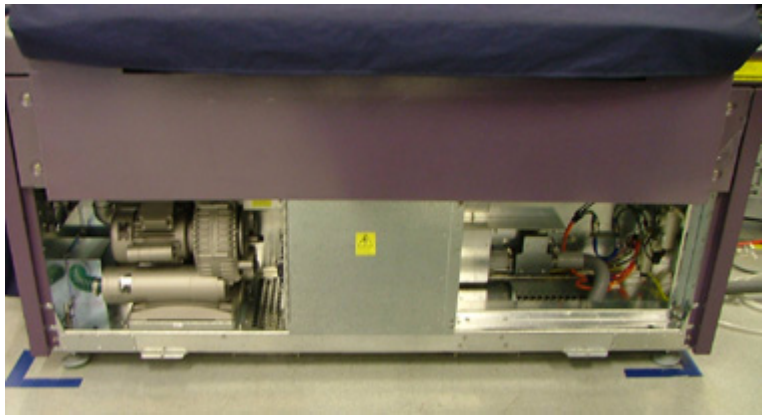


Figure 23: Rear view of Magnus 800 Z-speed platesetter without any ventilation holes and lower rear panel removed



Figure 24: Ventilation holes on rear side of Magnus 800 Z-speed platesetter

There may also be ventilation holes located on the right side of the Magnus 800 Z-speed platesetter.

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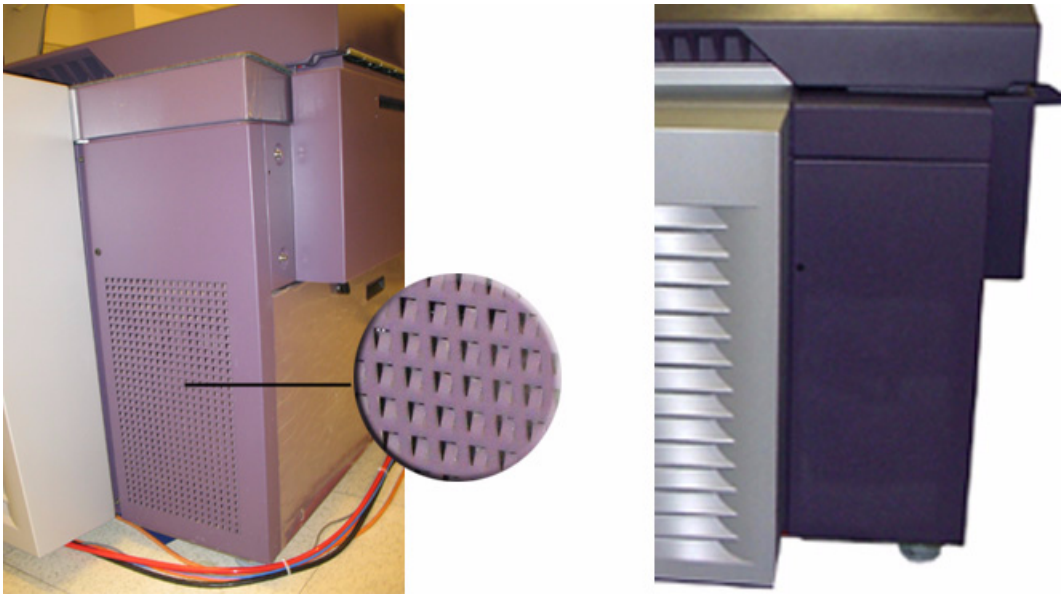


Figure 25: Right side view of Magnus 800 Z-speed platesetter, showing versions with and without ventilation holes.

CAUTION: Do not block, cover, or obstruct any ventilation holes.

The Magnus 800 Z-speed platesetter does not have a defeater rotate switch for autofocus laser defeat.

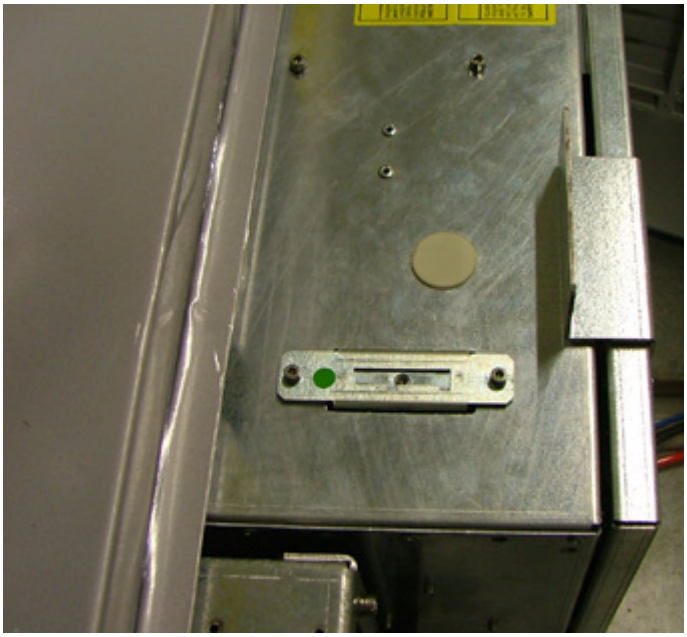


Figure 26: There is no autofocus defeat rotate switch on a Magnus 800 Z-speed platesetter

The carriage on a Magnus 800 Z-speed platesetter is different to the carriage on Magnus 800 s, f, v, and x-speed platesetters. In addition, the side focus laser protective barrier, (Figure 7 on page 5) with warning label 1 on it has been removed from Magnus 800 Z-speed platesetters.

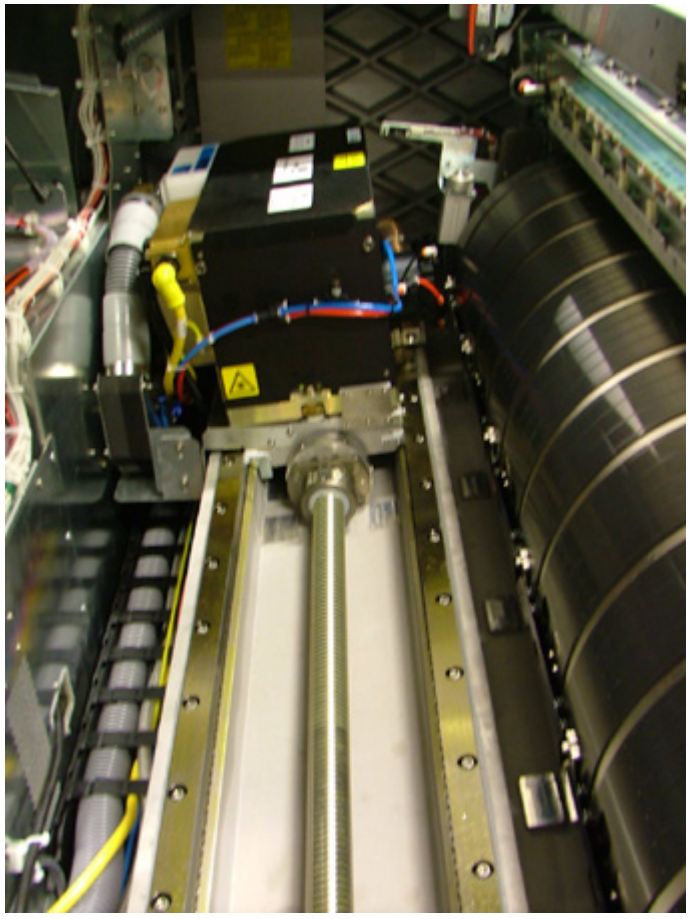


Figure 27: Magnus 800 Z-speed platesetter carriage

Adjusting the TH3 on a Magnus 800 Z-Speed Platesetter

The TH3 is adjusted when the carriage and drum are both stationary and the write laser is off. The TH3 is adjusted by removing the lower rear panel, and inserting an especially provided head adjustment screwdriver (90-1211) through a protective metal tube assembly.
The metal tube assembly comprises of three components: a protective metal tube, a plate, and a warning label.
When either the service engineer or the operator remove the lower rear panel, the metal tube assembly serves as a laser protective barrier—preventing hazardous laser radiation from being emitted in their direction.

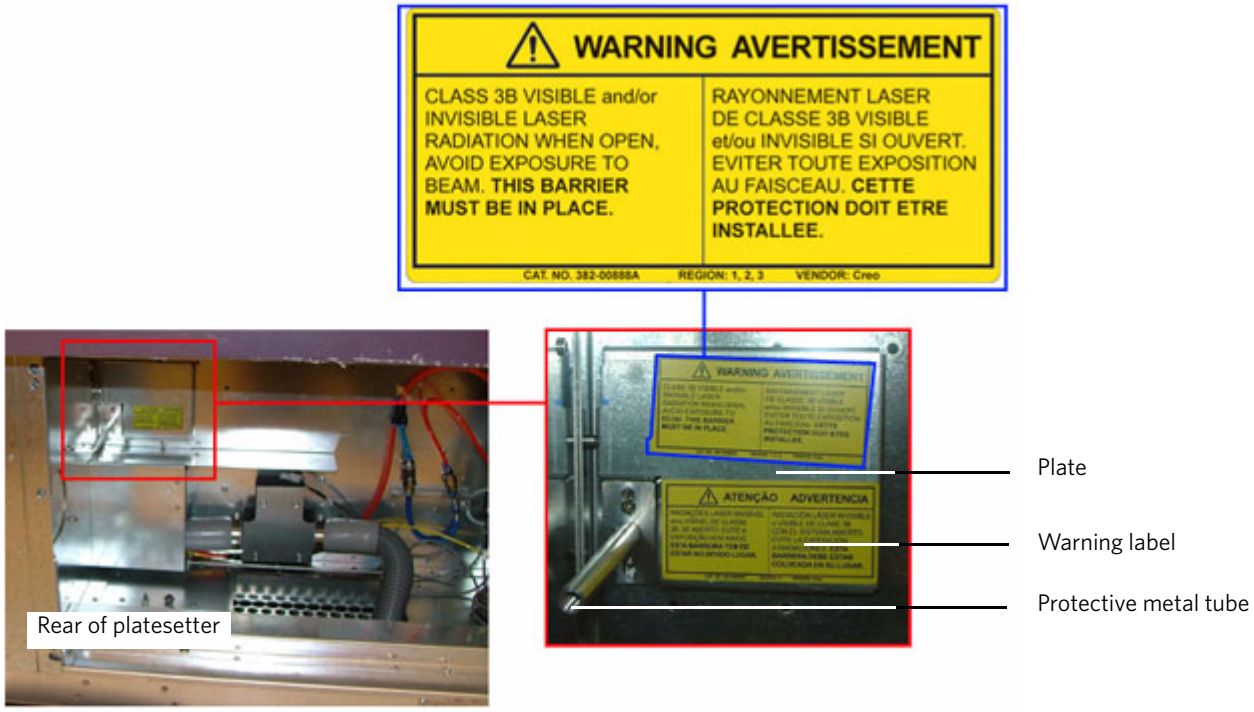


Figure 28: The metal tube assembly comprises of a protective metal tube, a plate, and a warning label

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WARNING: Before adjusting the TH3 on a Magnus 800 Z-speed platesetter, service engineers must have read and understood the entire Magnus 800 Platesetter Safety Guide for Service Engineers, including the following safety precautions.

WARNING: Do not adjust the TH3 unless you are a certified service engineer.

DANGER: Do not operate the platesetter or attempt to adjust the TH3, if the protective metal tube assembly is damaged or missing, because hazardous visible and/or invisible laser radiation may be emitted toward the service engineer or the operator. Even a brief exposure of the eyes to the laser radiation or its reflection can result permanent eye damage.

WARNING: Do not use any other type of screwdriver or tool to adjust the TH3; only use the screwdriver (90-1211) specifically provided for this procedure.



WARNING: Never attempt to dismantle the three protective metal tube assembly components (metal tube, plate, warning label) from one another.



WARNING: If, for whatever reason, the screwdriver snaps when it is inserted into the protective metal tube, it may cause damage to the metal tube assembly. This could potentially expose the service engineer and/or operator to hazardous laser radiation. Under such circumstances, perform the following actions:

- Shutdown, and secure the platesetter in an off position to prevent any laser radiation.
- Make sure that no damage has been sustained to the metal tube assembly.
  A thorough damage assessment may involve dismantling the metal tube assembly from the platesetter. If there are any signs of damage, order a replacement metal tube assembly and specialized screwdriver (90-1211).
  Do not operate the platesetter until the damage has been repaired and the platesetter's interior has been cleaned of any dispersed metal screwdriver filings.



WARNING: If the Magnus 800 Controller software fails, the carriage and/or drum may move while the screwdriver is inside the protective metal tube. This movement may cause the screwdriver to snap and injure your hand. See previous warning.



WARNING: If the screwdriver snaps during calibration, dispersed metal screwdriver filings may cause a mechanical hazard inside the platesetter.



WARNING: Do not adjust the TH3 until the carriage is stationary at position 878 mm and the drum is at a complete standstill.



WARNING: When opening the platesetter's right side door, wait a few seconds before you begin any work, as it takes the platesetter's safety system approximately three seconds to prevent the emission of any hazardous laser radiation.

Magnus 800 Z-Speed Platesetter Chiller

The Magnus 800 Z-speed platesetter is connected to a chiller that cools the TH3 laser head.



WARNING: Each chiller is shipped with an installation, operation, and basic maintenance booklet. The booklet is produced by the chillers' manufacturer. Before operating the chiller, you must read and adhere to all the chiller's safety instructions and warnings that appear in the booklet. In addition, follow any safety, warning, caution, and danger labels affixed to the actual chiller.

Defeating Laser Interlocks on a Magnus 800 Z-Speed Platesetter

With the exception of the lower rear panel, the Magnus 800 Z-speed platesetter TH3 cannot be adjusted if any doors or panels are either opened or removed. As a result, the focus laser defeater rotate switch and rotate key have been removed from Magnus 800 Z-speed platesetters.

Magnus 800 Z-speed Platesetter Warning Labels

The following additional warning label appears on the Magnus 800 Z-speed platesetters.



Label 1: 382-00888A

Magnus 800 Z-Speed Platesetter Warning Label Location

The following additional warning label appears on the Magnus 800 Z-speed platesetters.

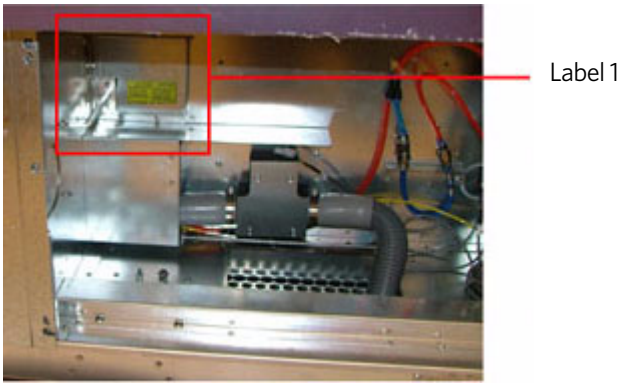


Figure 29: Rear view of Magnus 800 Z-speed platesetter without lower rear panel