

**User's Manual**  
for the  
**Digora Optime Standard version**  
and the  
**Digora Optime Multiconnect version**



This unit is marked according to the Medical Device Directive  
93/42/EEC (if the unit contains the CE mark)

User's Manual for the  
Optime

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Original approved English language version

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## 1. Introduction

### 1.1 The Optime

This manual describes how to operate the Cranex Optime intraoral imaging plate unit.

The unit is designed to read 0, 1, 2, and 3 size intraoral imaging plates supplied by Soredex.

The unit works in conjunction with a PC in which compatible dental imaging software, such as Digora for Windows 2.5 or above, has been installed.


The Optime can be configured to work with a single PC, the **Standard** version or in a shared environment where the unit is accessed from different PCs, the **Multi-Connect** version.

Only the manufacturer's authorized personnel are allowed to install and configure the Optime intraoral imaging plate unit.

## 1.2 Warnings and precautions

CAUTION - CLASS 3B LASER RADIATION WHEN OPEN  
AVOID EXPOSURE TO BEAM

CAUTION - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser radiation exposure

- When handling imaging plates, plate covers and protective bags always take the appropriate hygiene measures and precautions to prevent cross contamination.
- The imaging plates are harmful if swallowed.
- Do not move or knock the unit when it is reading an imaging plate.
- The use of control or adjustment or performance of procedures other than those specified herein may result in hazardous laser radiation exposure.
- This unit must only be used to read SOREDEX OPTIME image plates and must not be used for any other purpose. NEVER use imaging plates or protective covers from other manufacturers.
- This unit, or its accessories, must not be modified, altered or remanufactured in any way.
- Only the manufacturer's authorized service personnel are authorized to carry out maintenance and repair. There are no user serviceable parts inside the unit.
- Infection control procedures must be observed when using accessories, such as film holders, x-ray tube guides and imaging plates. When using accessories always follow the manufacturer's instructions on how to use the accessory and prevent cross contamination from one patient to another.
- This device can interfere with other devices due to its EMC characteristics.
- Other devices can interfere with this device due to their EMC characteristics.
- This device complies with IEC 60601-1 standard. Accessory equipment connected to this device must be in compliance with the related nationally harmonized IEC standards.
- Equipment not suitable for use in the presence of flammable anaesthetic mixture with air or with oxygen or nitrous oxide.
-  Only use the SKYNET SNP-PA59-M power supply unit that is supplied with the unit. Do not use any other power supply units with the unit.
- If this device will be used with 3rd party imaging application software not supplied by SOREDEX, the 3rd party imaging application software must comply with all local laws on patient information software. This includes, for example, the Medical Device Directive 93/42/EEC and/or FDA if applicable.

### 1.3 Handling Imaging Plates

After exposing an imaging plate and removing the imaging plate and cover from its protective bag, do NOT expose the imaging plate and cover to very bright light before reading the imaging plate.

Also read the imaging plate as quickly as possible after it has been exposed.

Do not leave read or unread imaging plates in their protective bags for long periods of time.

Always handle the imaging plates with care and avoid situations that could scratch them.

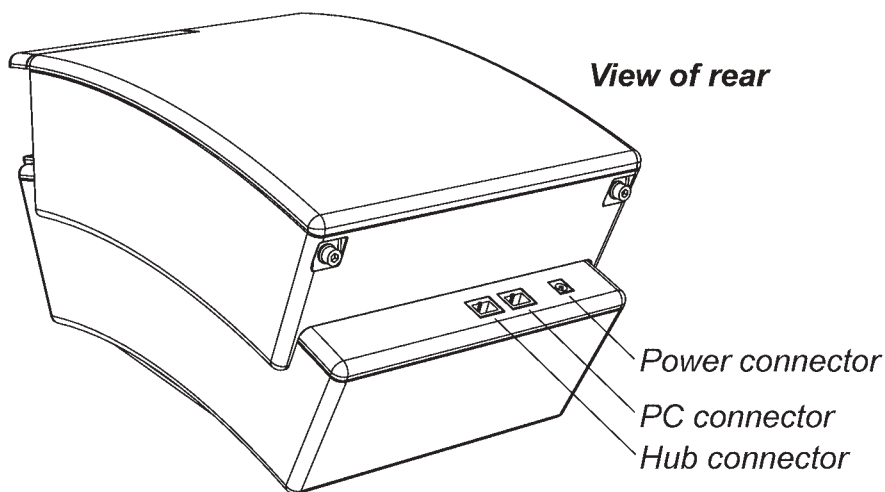
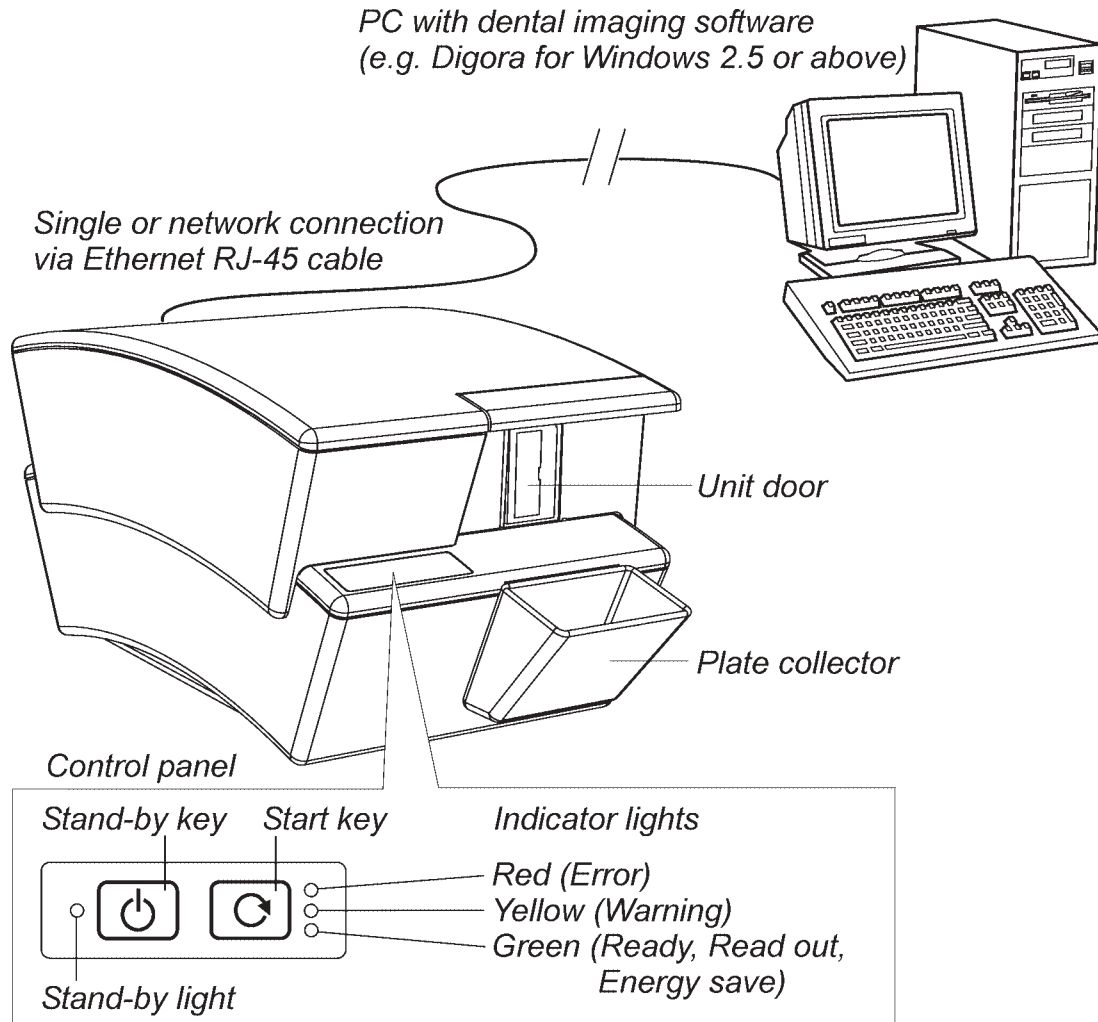
When imaging plates are not being used, store them in their protective box below 33°C.

### 1.4 Positioning the unit

Do NOT position the unit so that the door is in or near very bright light.

## 2. Optime - Standard version

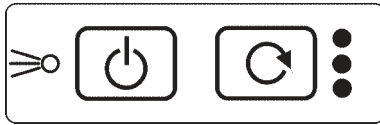
### 2.1 Main parts and controls





## 2.2 Indicator lights

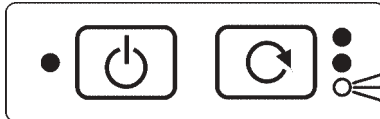
The different statuses of the indicator lights are described below.



### Stand-by light on

Unit is shut down (OFF).

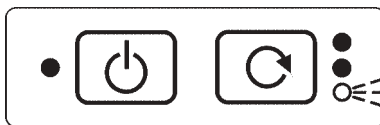
Press stand-by key to switch unit on.



### GREEN on

Unit ready to read an imaging plate.

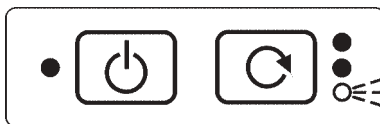
Insert imaging plate.



### GREEN slow flashing

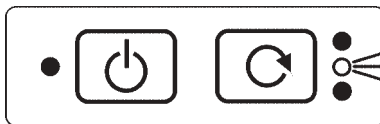
Unit in the energy save mode.

Press the Start key to enter ready mode.



### GREEN fast flashing

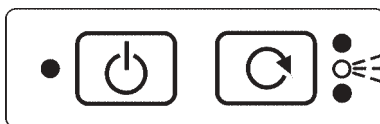
Unit is reading/erasing an imaging plate.



### YELLOW on

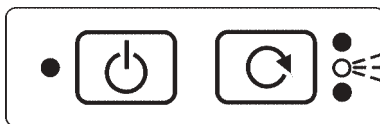
DfW not opened or untransferred image in unit.

Open DfW and the image will automatically appear.



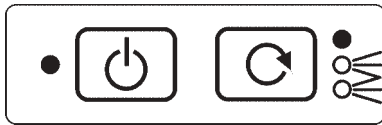
### YELLOW slow flashing

There is no Ethernet link.

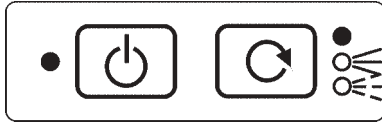


### YELLOW fast flashing

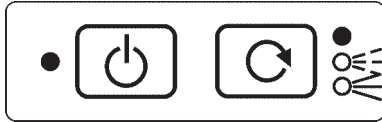
Unit carrying out its selftest.



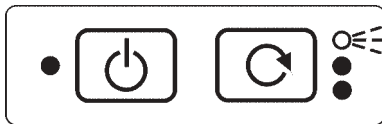
**GREEN on, YELLOW on**  
Unit is in the Erase mode.



**GREEN flashing, YELLOW on**  
Unit is in the Erase mode and is erasing an imaging plate



**GREEN on, YELLOW flashing**  
Unit is entering the energy save mode

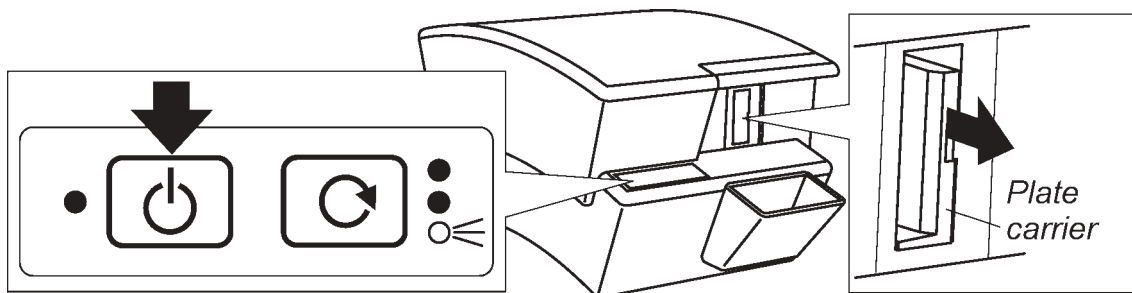


**RED flashing**  
ERROR. Switch the unit off and then on again. If the red light comes on again, contact your dealer for help.

## 2.3 Using the unit

### Preparing the image read-out system

1. Switch on the computer that is connected to the unit.
2. Open Digora for Windows or the dental imaging software you are using.
3. If you are using the unit for the first time you may wish to check and/or change the setup options. See section **4 Setup options** for more information.
4. Open the patient card where you wish to place the new image, or open a new patient card.
5. Press the Stand-by key to switch the unit on. The YELLOW stand-by light will turn off and unit will carry out a selftest during which the YELLOW warning light will flash. The selftest will last about 30 seconds.  
When the plate carrier slides out of the unit door and the GREEN light comes on the unit is ready to use.



#### NOTE

If the GREEN light does not come on it indicates that the unit is not connected to the PC.

If the RED light comes on contact your dealer for advice.

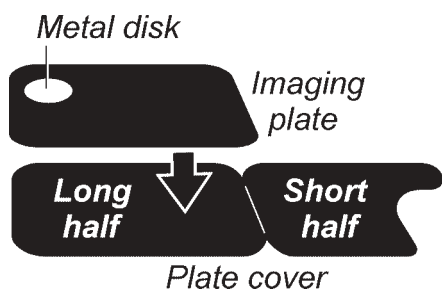
### Preparing the imaging plate

#### IMPORTANT NOTE

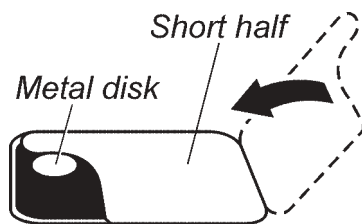
If the imaging plate is being used for the very first time or if it has not been used within the last five days, it **MUST** be erased. See section 3. Erasing an imaging plate, for information on how to do this.

#### CAUTION

When handling imaging plates, plate covers and protective bags always take the appropriate hygiene measures and precautions to prevent cross contamination.

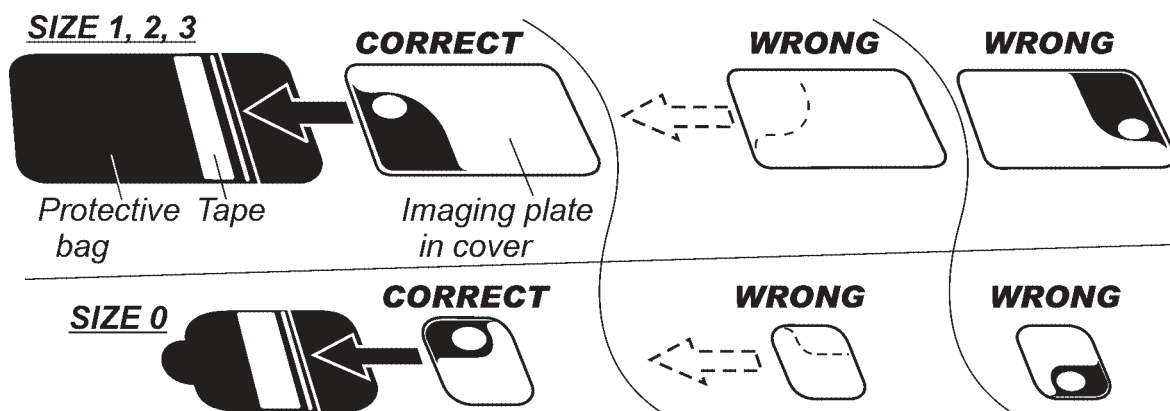


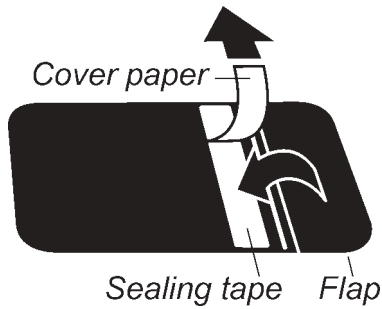
1. Place the imaging plate you plan to use onto the long half of the plate cover. The **blue (active)** side of the imaging plate must face the plate cover and the metal disk, on the back of the imaging plate, must be positioned near the outer edge of the plate cover.



2. Fold the short half of the plate cover over onto the imaging plate.

3. Slide the plate cover and imaging plate into the protective bag as far as it will go. Make sure that the black side of the imaging plate, the back, is against the tape (black) side of the protective bag.

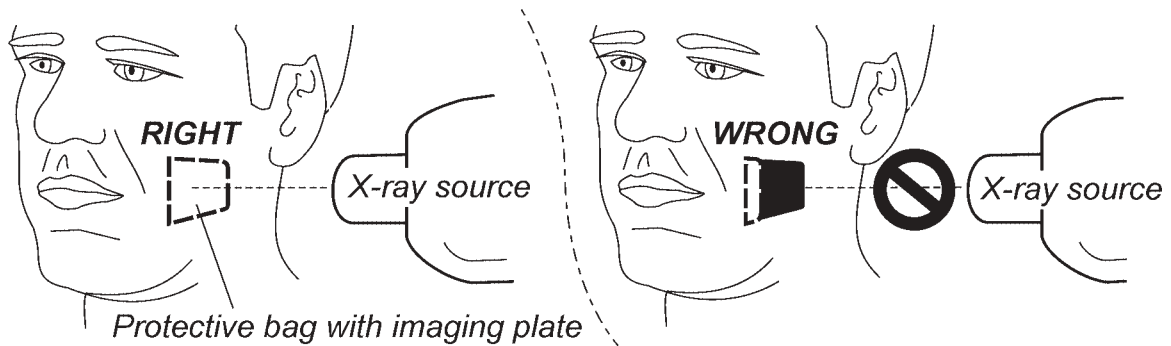




4. Remove the cover paper from the sealing tape. Fold the flap over onto the sealing tape. A score line on the front of the bag will help you to fold the flap. Smooth the flap from the centre out to ensure that the seal does not wrinkle.

### Taking an exposure using the imaging plate

1. Place the sealed protective bag in the patient's mouth in the required position for the image you wish to take. The back of the protective bag, the black side, must face away from the X-ray source.



2. Select an exposure value appropriate for the exposure you are taking. The unit can read images taken with exposure times from 0.05 to 0.63 seconds at 7 mA.
3. Protect yourself from radiation and take the exposure.

## Reading the imaging plate

1. Remove the sealed protective bag from the patient's mouth.

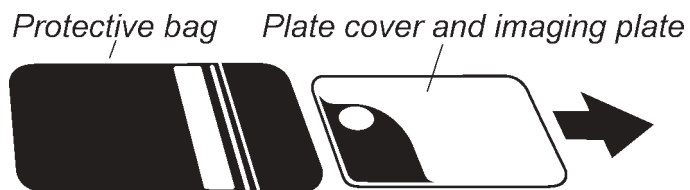
### NOTE

If a risk of cross contamination exists, wash, disinfect and dry the protective bag before opening it.

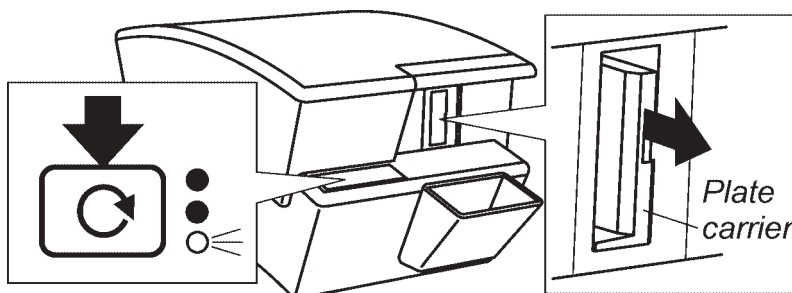


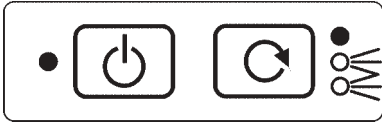
2. Open the sealed protective bag.

3. Slide the plate cover and imaging plate out of the protective bag. Keep the imaging plate in the plate cover so that you do not touch the imaging plate or allow it to be exposed to bright light.



4. If unit door is closed and the GREEN light is flashing, the unit is in the energy save mode, Press the Start key. The unit door will open, the plate carrier will slide out and the GREEN light will stop flashing and remain on.

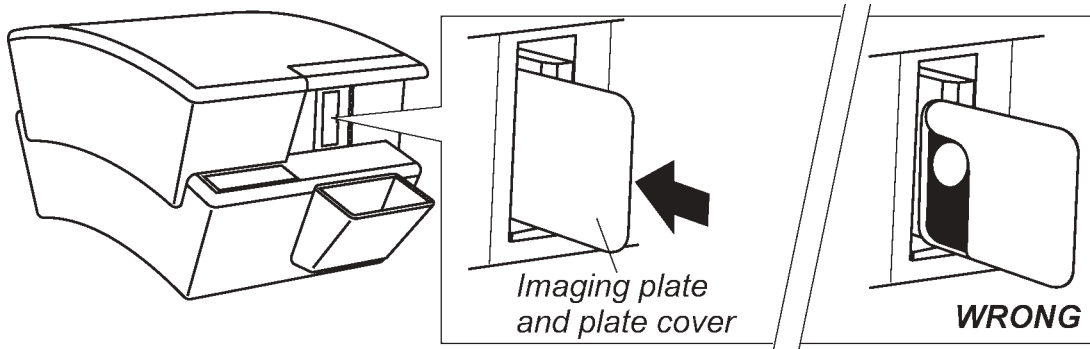




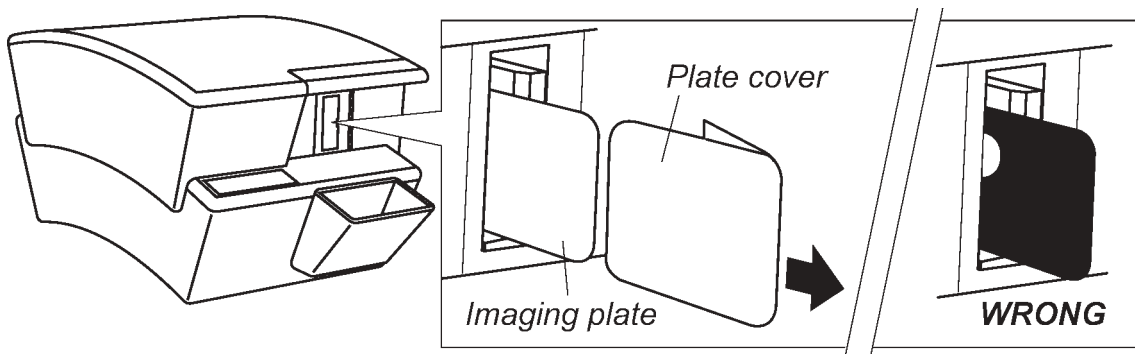
**CAUTION**

If the **GREEN** and **YELLOW** lights are both on, it indicates that the unit is in the Erase mode. **DO NOT** attempt to read an imaging plate when the unit is in the erase mode. To exit the Erase mode press and hold down the Start key until the **YELLOW** light goes out.

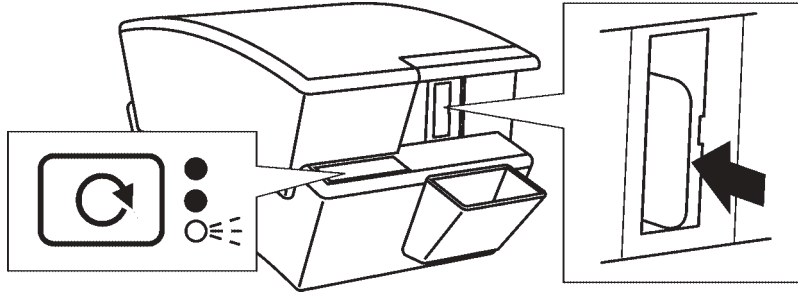
- Slide the imaging plate and plate cover into the plate carrier as far as they will go. The back of the imaging plate (the black side) must face the plate carrier.  
A magnet will hold the imaging plate in position.



Slide the plate cover off of the imaging plate, leaving the imaging plate in position.



After the plate cover has been removed the plate carrier with imaging plate will automatically slide into the unit and the unit door will close. The GREEN light will start to flash which indicates that the imaging plate is being read.



### CAUTION

**If the plate carrier does not slide into the unit after the plate cover has been removed, the imaging plate is misaligned or has been placed in the unit the wrong way round. Re-insert the imaging plate correctly.**

A read-out progress window will appear on the PC display. After a few seconds the new image will appear on the patient card.

### NOTE

There is a metal disk on the rear of every imaging plate. If this disk can be seen on the digital image, it indicates that the imaging plate was exposed from the wrong side. The image must be mirrored using dental imaging software.

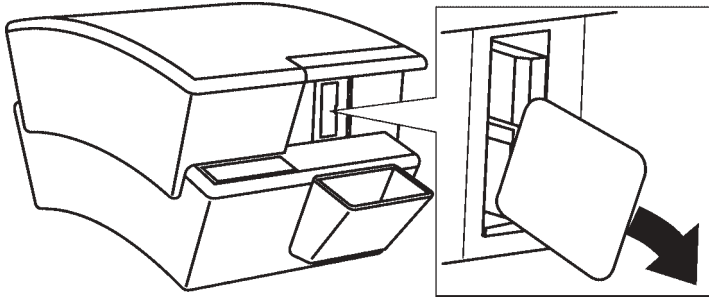
### IMPORTANT NOTE - RETRIEVING IMAGES

If an image is not transferred to the PC because of a network, PC or software failure, the image can be retrieved.

For information on how to do this see section **Retrieve last image**.

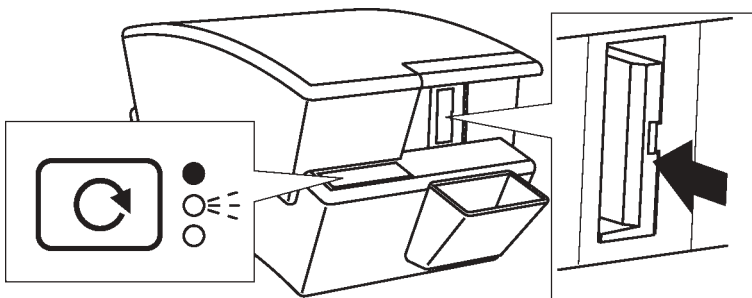


6. After the imaging plate has been read it will be erased and then automatically ejected from the unit into the plate collector.



After the imaging plate has been ejected the GREEN light will remain on and the unit door will stay open. The unit is now ready to read the next imaging plate

If no new imaging plate is inserted into the unit within a certain time period the unit door will close and the unit will enter the energy save mode. Five seconds before the unit enters the energy save mode the YELLOW warning light will start to flash and the unit will start to beep.



After five seconds the plate carrier will slide back inside the unit, the door will close, the YELLOW light will go out and the GREEN light will start to flash. The unit is now in the energy save mode.

If the Start button is pressed while the YELLOW warning light is flashing, the unit will not enter the energy save mode.

To exit the energy save mode press the Start button. The plate carrier will slide out and the GREEN light will stop flashing and stay on. The unit is now in the ready mode.

## Retrieve last image

If the last image read is not transferred to the PC because of a network, PC or software failure, the image can be retrieved.

### **IMPORTANT NOTE**

The LAST read image can only be retrieved if the unit has been left connected to the power supply. If the unit has been disconnected the image will be lost.

To retrieve the last image:

1. Correct the problem that caused the network failure, and then reopen the new or existing patient card.
2. The last scanned image should automatically be transferred.  
If it is not, from the dental imaging software you are using select **Digora Optime Setup > Scanner** page.
3. In the **Retrieve Last Image** field, click the check box to retrieve the last read image.
4. Click **OK** to close the **Digora Optime Setup** window will close.  
The last read image will appear on the patient card.

**Image quality warning message**

The following WARNING message may appear on the PC display during or after read-out:

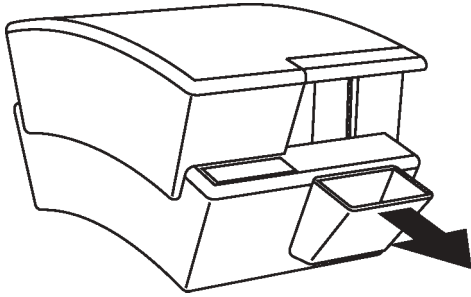
**- Degraded image quality****PROBLEM**

Some of the read out lines on the image are not within the factory set quality limits.

**SOLUTION**

If the image looks okay no action is necessary. If the message appears frequently, contact your dealer for assistance.

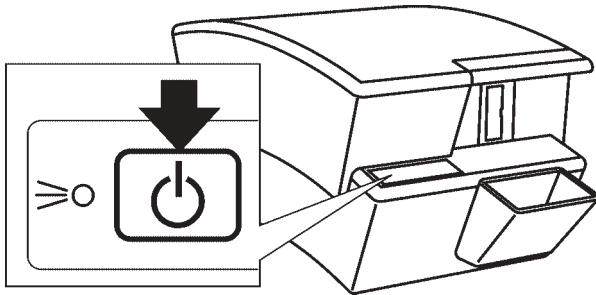
## Removing imaging plates from the plate collector



1. Slide the plate collector out of the unit and tip the imaging plates out onto a flat surface. If they are not to be used again, store them in the optional storage box.

## Shutting down the unit

1. Press and hold down the stand-by key until the stand-by light comes on.



### NOTE

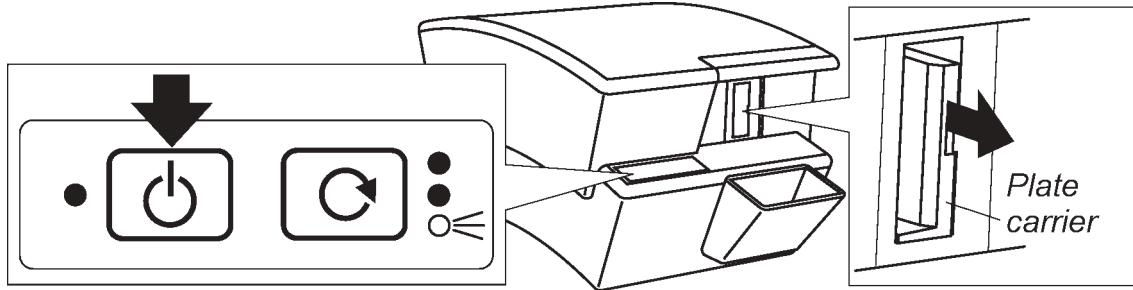
If the unit remains in the energy save mode for several hours (door closed and green light flashing), it will automatically shut down.

### NOTE

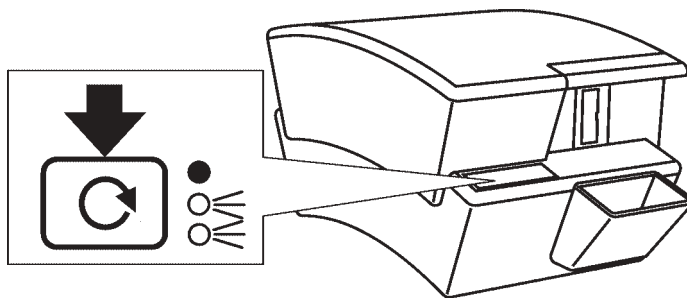
If there is an untransferred image in the unit, the unit will not automatically shut down.

## Erasing an Imaging Plate

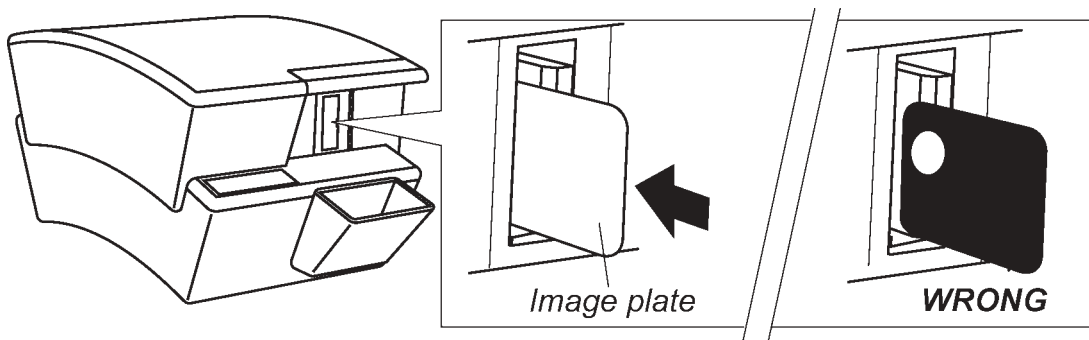
1. Press the Stand-by key to switch the unit on. After 60 seconds the plate carrier will slide out of the unit.



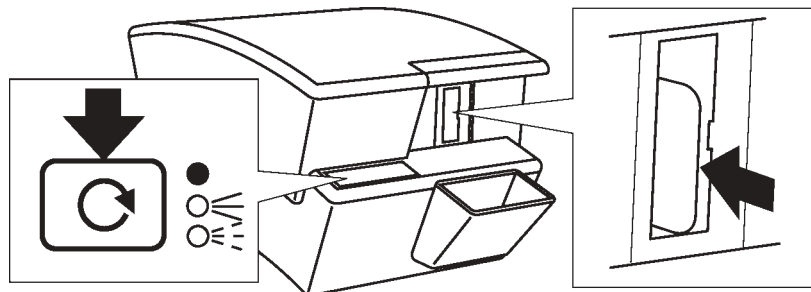
2. Press and hold down the Start key, the GREEN light will flash, until the YELLOW light comes on. When both lights are on the unit is in the Erase mode.



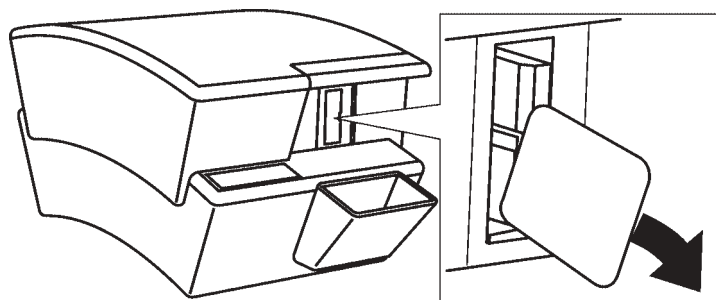
3. Slide the imaging plate into the plate carrier as far as it will go. The back of the imaging plate (the black side) must face the plate carrier. A magnet will hold the imaging plate in position.



Release the imaging plate and the plate carrier will slide into the unit and the unit door will close. The YELLOW light will stay on and the GREEN light will start to flash which indicates that the imaging plate is being erased.



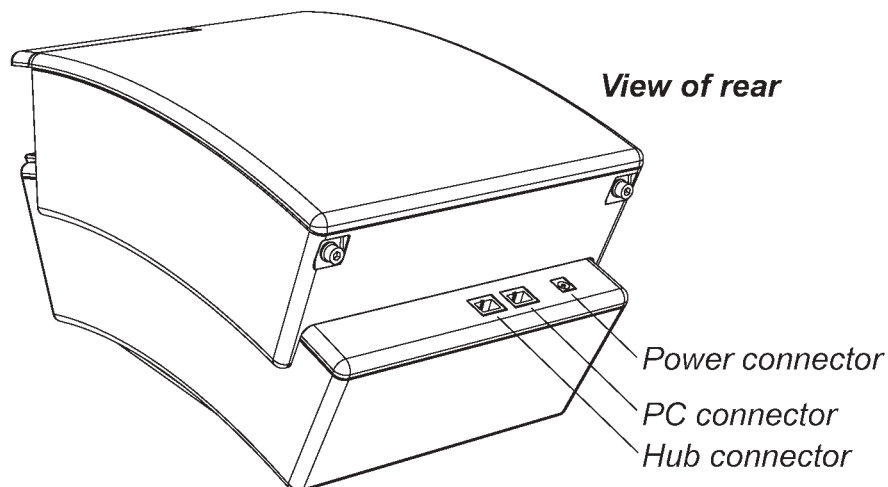
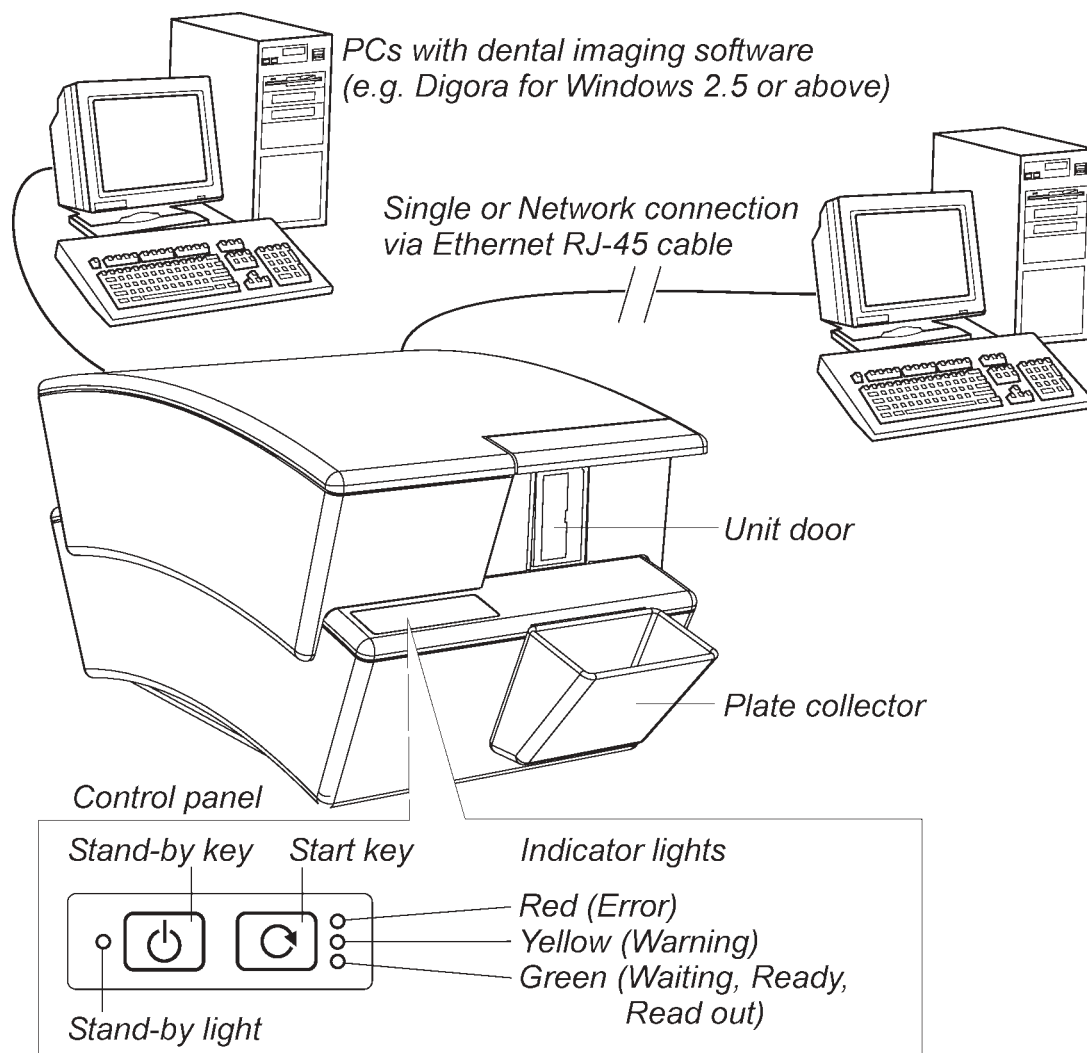
4. After the imaging plate has been erased it will be automatically ejected from the unit into the plate collector. The imaging plate can now be used to take an exposure



5. To exit the Erasing mode, either wait 15 seconds for the unit to automatically exit the mode, or press and hold down the Start key until the YELLOW light goes out.

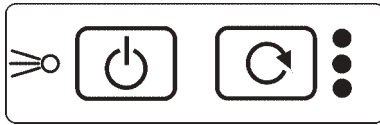
### 3. Optime - Multi-Connect version

#### 3.1 Main parts and controls



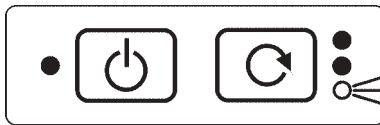
## 3.2 Indicator lights

The different statuses of the indicator lights are described below.



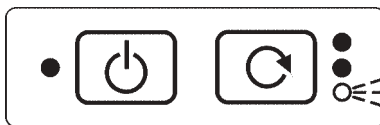
### Stand-by light on

Unit is shut down (OFF).  
Press stand-by key to switch unit on.



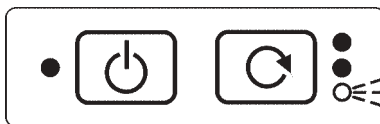
### GREEN on

Unit is reserved and ready to read an imaging plate.  
Insert imaging plate.



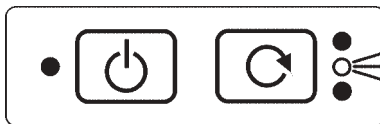
### GREEN slow flashing

Unit in the waiting mode.  
Click the Multi-connect icon to reserve the unit.



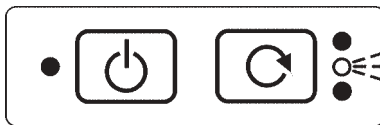
### GREEN fast flashing

Unit is reading/erasing an imaging plate.



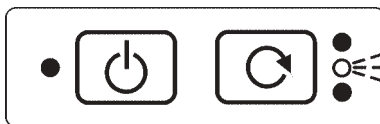
### YELLOW on

Imaging software not opened or untransferred image in unit.  
Open imaging software and retrieve the pending image if necessary.



### YELLOW slow flashing

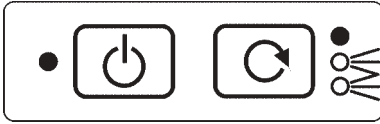
There is no Ethernet link.



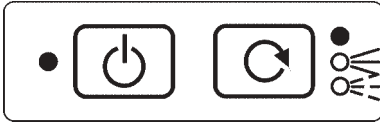
### YELLOW fast flashing

Unit carrying out its selftest.

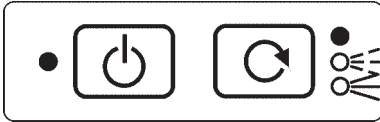




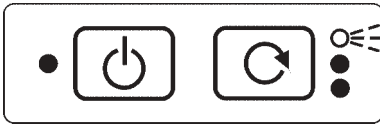
**GREEN on, YELLOW on**  
Unit is in the Erase mode.



**GREEN flashing, YELLOW on**  
Unit is in the Erase mode and is erasing an imaging plate



**GREEN on, YELLOW flashing**  
Unit is exiting the reserved mode. If required again click the Multi-connect icon to reserve the unit.

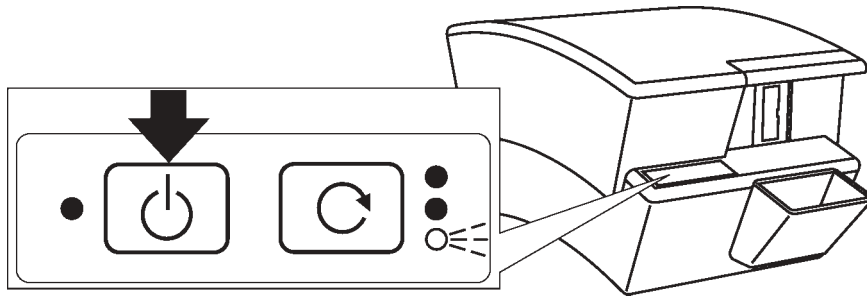


**RED flashing**  
ERROR. Switch the unit off and then on again. If the red light comes on again, contact your dealer for help.

## 3.3 Using the unit

### Preparing the image read-out system

1. Switch on the PC that is connected to the unit.
2. Open Digora for Windows or the dental imaging software you are using.
3. If you are using the unit for the first time you may wish to check and/or change the setup options. See section **4 Setup options** for more information.
4. Open the patient card where you wish to place the new image, or open a new patient card.
5. Press the Stand-by key to switch the unit on. The YELLOW stand-by light will turn off and unit will carry out a selftest during which the YELLOW warning light will flash and the unit door will open. The selftest will last about 30 seconds. When the unit door closes and the GREEN light starts to flash the unit is in the wait mode and is ready to be reserved.



#### NOTE

If the GREEN light does not come on it indicates that the unit is not connected to the PCs.

If the RED light comes on contact your dealer for advice.

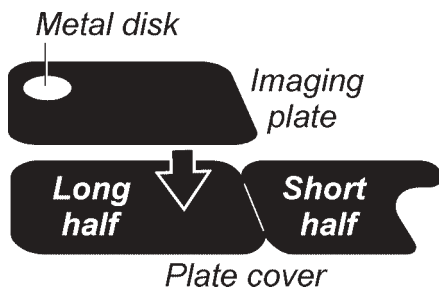
### Preparing the imaging plate

#### IMPORTANT NOTE

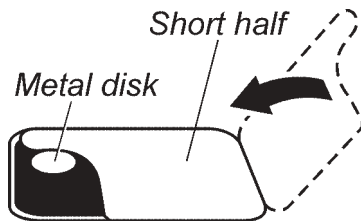
If the imaging plate is being used for the very first time or if it has not been used within the last five days, it **MUST** be erased. See section **3 Erasing an imaging plate**, for information on how to do this.

#### CAUTION

When handling imaging plates, plate covers and protective bags always take the appropriate hygiene measures and precautions to prevent cross contamination.

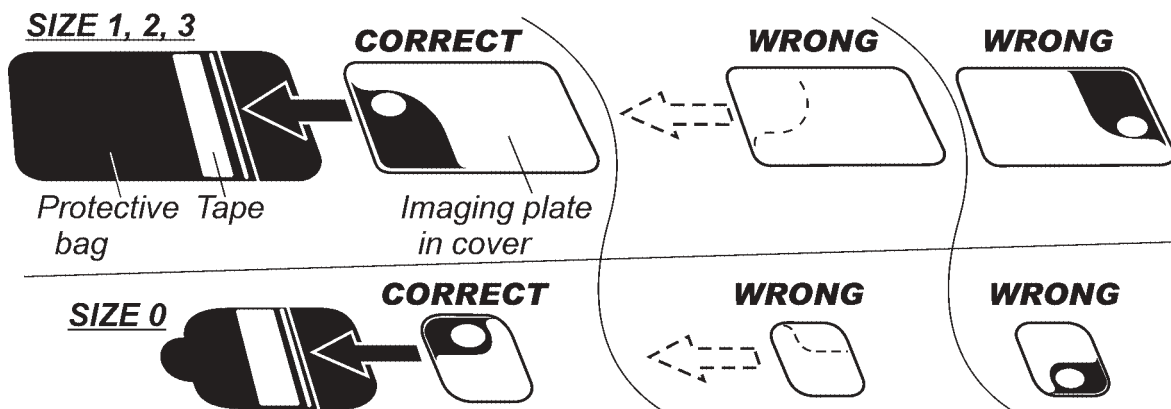


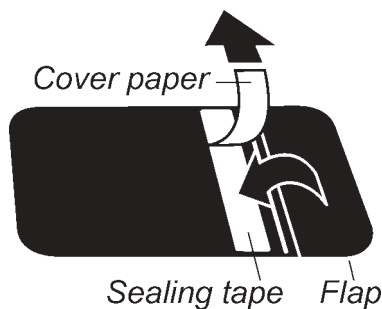
1. Place the imaging plate you plan to use onto the long half of the plate cover. The **blue (active)** side of the imaging plate must face the plate cover and the metal disk, on the back of the imaging plate, must be positioned near the outer edge of the plate cover.



2. Fold the short half of the plate cover over onto the imaging plate.

3. Slide the plate cover and imaging plate into the protective bag as far as it will go. Make sure that the black side of the imaging plate, the back, is against the tape (black) side of the protective bag.

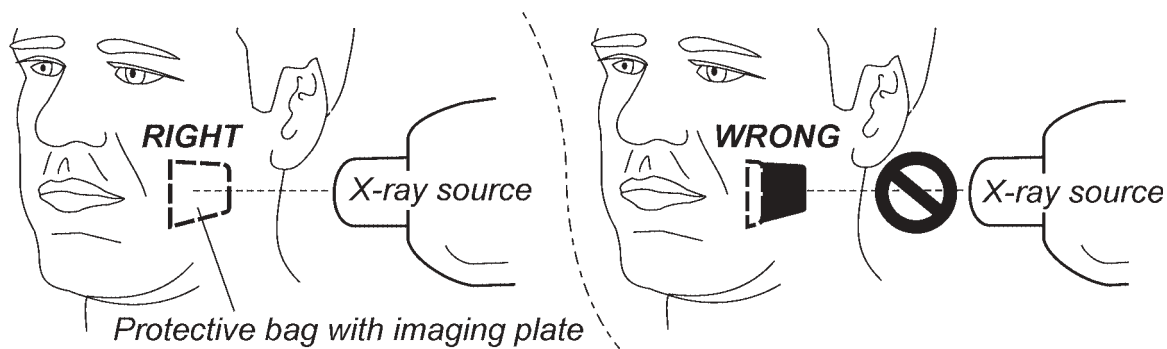




- Remove the cover paper from the sealing tape. Fold the flap over onto the sealing tape. A score line on the front of the bag will help you to fold the flap. Smooth the flap from the centre out to ensure that the seal does not wrinkle.

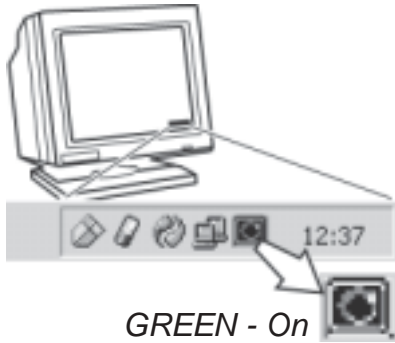
### Taking an exposure using the imaging plate

- Place the sealed protective bag in the patient's mouth in the required position for the image you wish to take. The back of the protective bag, the black side, must face away from the X-ray source.



- Select an exposure value appropriate for the exposure you are taking. The unit can read images taken with exposure times from 0.05 to 0.63 seconds at 7 mA.
- Protect yourself from radiation and take the exposure.

## Reading the imaging plate



1. Remove the sealed protective bag from the patient's mouth.

### NOTE

If a risk of cross contamination exists, wash, disinfect and dry the protective bag before opening it.

2. Click the GREEN multi-connect icon, which is in the System Tray in the bottom right-hand corner of the PC display, to reserve the unit. The **Optime Multi-Connect** window will appear.



3. Click the **Reserve the Scanner** button, in the **Optime Multi-Connect** window, to reserve scanner.

The window will disappear and the GREEN multi-connect icon will start to flash. This indicates that you have now reserved the scanner.

Note that when the scanner is in the reserved mode, the GREEN light on the unit will stop flashing and stay on, and the scanner door will open.



### NOTE

If the multi-connect icon is YELLOW, it indicates that the unit has been reserved by someone else. Wait until the unit is free.



### NOTE

If the multi-connect icon is GRAY, it indicates that the unit has not been switched on or is just starting up and is not ready for use.

Switch the unit on and/or wait until the unit is ready for use.

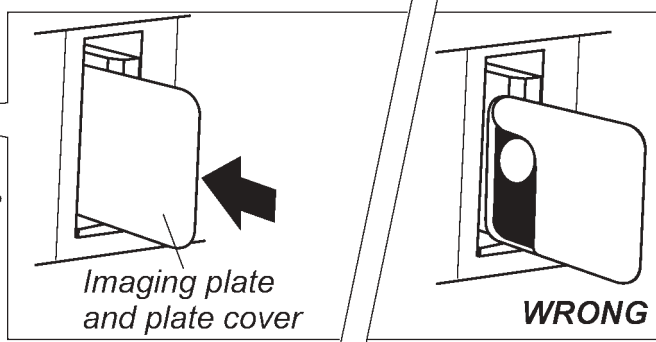
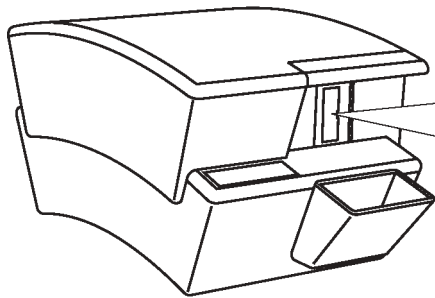


4. Open the sealed protective bag.

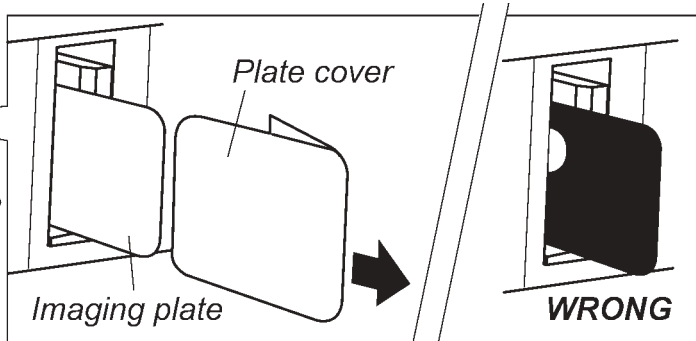
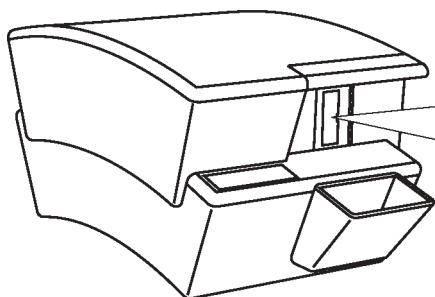
5. Slide the plate cover and imaging plate out of the protective bag. Keep the imaging plate in the plate cover so that you do not touch the imaging plate or allow it to be exposed to bright light.



6. Slide the imaging plate and plate cover into the plate carrier as far as they will go. The back of the imaging plate (the black side) must face the plate carrier. A magnet will hold the imaging plate in position.



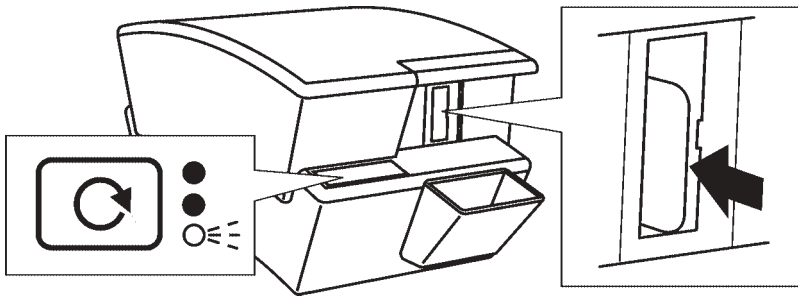
Slide the plate cover off of the imaging plate, leaving the imaging plate in position.



**IMPORTANT NOTE**

If the YELLOW light starts to flash and the unit starts to beep as you are inserting the imaging plate it indicates that the reserved time has elapsed and the unit is exiting the reserved mode. DO NOT continue to insert the imaging plate. Reserve the unit again and then re-insert the imaging plate.

After the cover has been removed the plate carrier with imaging plate will automatically slide into the unit and the unit door will close. The GREEN light will start to flash which indicates that the imaging plate is being read.

**CAUTION**

If the plate carrier does not slide into the unit after the plate cover has been removed, the imaging plate is misaligned or has been placed in the unit the wrong way round. Re-insert the imaging plate correctly.

A read-out progress window will appear on the PC display. After a few seconds the new image will appear on the patient card.

**NOTE**

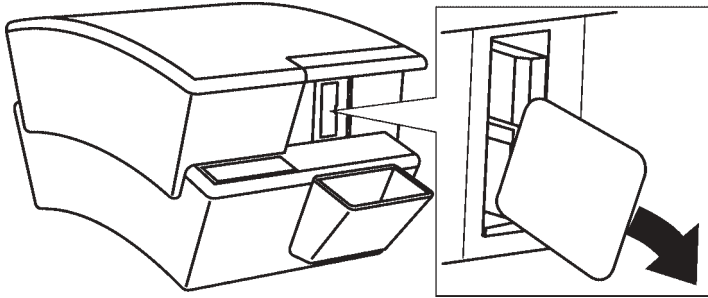
There is a metal disk on the rear of every imaging plate. If this disk can be seen on the digital image, it indicates that the imaging plate was exposed from the wrong side. The image must be mirrored using dental imaging software.

**IMPORTANT NOTE - RETRIEVING IMAGES**

If an image is not transferred to the PC because of a network, PC or software failure, the image can be retrieved.

For information on how to do this see section **Retrieve last image.**

7. After the imaging plate has been read it will be erased and then automatically ejected from the unit into the plate collector.



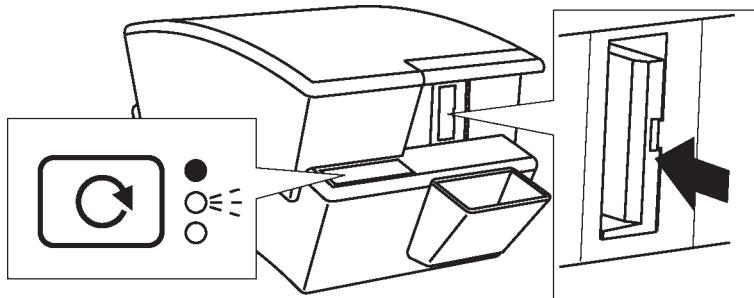
After the imaging plate has been ejected the GREEN light will remain on and the unit door will stay open. The unit is now ready to read the next imaging plate

If no new imaging plate is inserted into the unit within a certain time period (configured during installation) the unit door will close and the unit will exit the reserved mode and enter the waiting mode.

A few seconds before the unit enters the waiting mode the YELLOW warning light will start to flash and the unit will start to beep.



After a few seconds the plate carrier will slide back inside the unit, the door will close, the YELLOW light will go out and the GREEN light will start to flash. The unit is now in the wait mode.



### Retrieve last image

If the last image read is not transferred to the PC because of a network, PC or software failure, the image can be retrieved.

#### IMPORTANT NOTE

The LAST read image can only be retrieved if the unit has been left connected to the power supply. If the unit has been disconnected the image will be lost.

To retrieve the last image:

1. Correct the problem that caused the network failure, and then reopen the new or existing patient card.

YELLOW



2. The multi-connect icon will be YELLOW and the tool tip will say **Image pending** which means that there is an untransferred image in the unit. Click the Icon and the **Optime Multi-Connect** window will appear.
3. Click the **Read Pending Image** button to retrieve the last read image. The last read image will appear on the patient card.

**NOTE**

Check the name associated with the pending image. The unit will remain reserved for the operator who scanned, but was unable to transfer, the pending image.

**Image quality warning message**

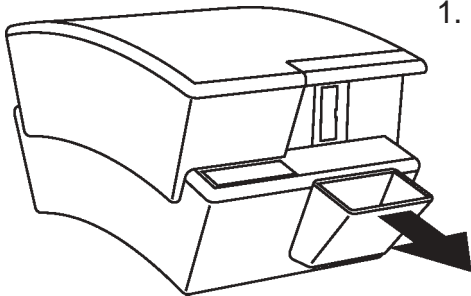
The following WARNING message may appear on the PC display during or after read-out:

**- Degraded image quality****PROBLEM**

Some of the read out lines on the image are not within the factory set quality limits.

**SOLUTION**

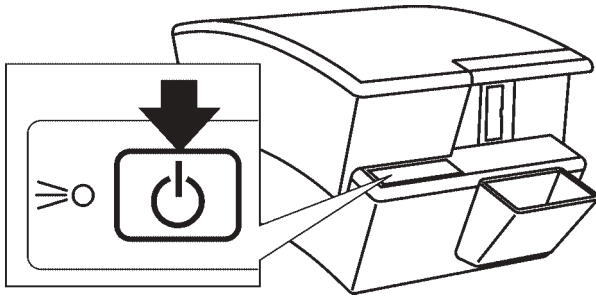
If the image looks okay no action is necessary. If the message appears frequently, contact your dealer for assistance.

**Removing imaging plates from the plate collector**

1. Slide the plate collector out of the unit and tip the imaging plates out onto a flat surface. If they are not to be used again, store them in the optional storage box.

### Shutting down the unit

1. Press and hold down the stand-by key until the stand-by light comes on.



#### NOTE

If there is an untransferred image in the unit, the unit will not automatically shut down.

### Erasing an Imaging Plate

1. From the PC click the GREEN multi-connect icon, in the bottom right-hand corner of the PC display, to reserve the unit. The Optime Multi-Connect window will appear.

*GREEN - Flashing*

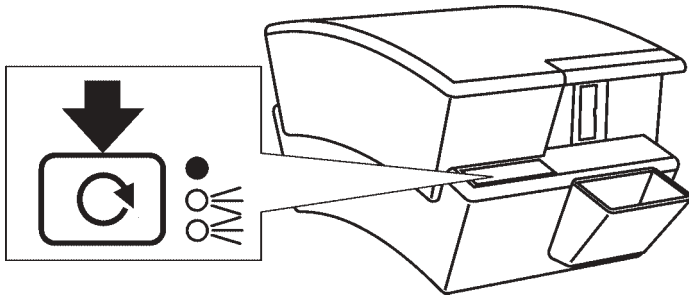


2. Click the Reserve Scanner button to reserve scanner.

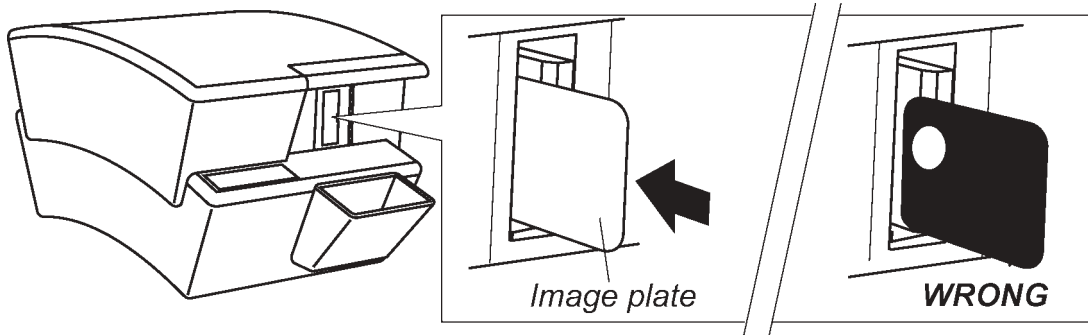
The window will disappear and the GREEN multi-connect icon will start to flash.

This indicates that you have now reserved the scanner.

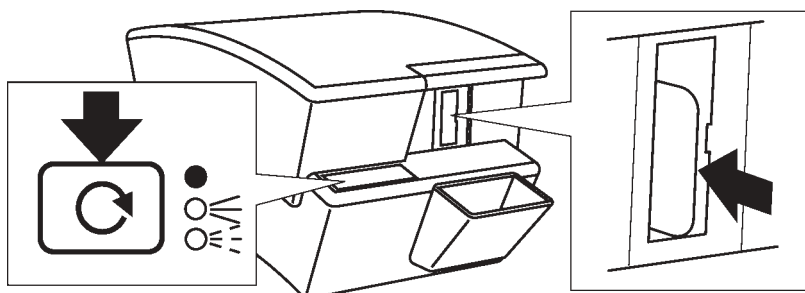
- Press and hold down the Start key, the GREEN light will flash, until the YELLOW light comes on. When both lights are on the unit is in the Erase mode.



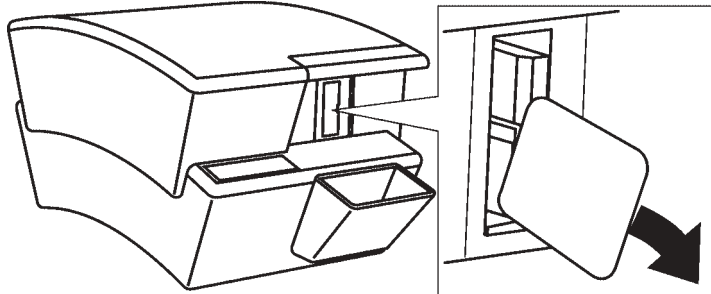
- Slide the imaging plate into the plate carrier as far as it will go. The back of the imaging plate (the black side) must face the plate carrier. A magnet will hold the imaging plate in position.



Release the imaging plate and the plate carrier will slide into the unit and the unit door will close. The YELLOW light will stay on and the GREEN light will start to flash which indicates that the imaging plate is being erased.



5. After the imaging plate has been erased it will be automatically ejected from the unit into the plate collector.  
The imaging plate can now be used to take an exposure



6. To exit the Erasing mode, either wait 15 seconds for the unit to automatically exit the mode, or press and hold down the Start key until the YELLOW light goes out.

## 4. Setup options

The unit has several setup options that allow you to set the image quality to your requirements.

To select the setup options:

1. From the dental imaging software you are using select **Digora Optime Setup > Scanner** page.

### 4.1 Tooth numbering

Numbers can be assigned to the teeth that appear on the image.

#### Selecting the tooth numbering feature

1. In the **Image Scanning** section, click the **Show Image Preview and Dental Chart** check box.
2. Click **OK** to close the window and activate tooth numbering.

#### Using the tooth numbering feature

After an image plate has been read a window will open that shows the image and a tooth location map.

1. Click the **tooth/teeth** on the map that correspond to the tooth/teeth in the image. Tooth numbers will be assigned to the selected teeth.

Tools at the top of the window allow the image to be manipulated.

2. Click **OK** to save the tooth numbers with the image.

## 4.2 Resolution

1. In the **Image Scanning** section, select either **Super** or **High**.  
Super gives a pixel size of 40 $\mu$   
High a pixel size of 64 $\mu$ .  
Super will give you better resolution images, but you will use more memory space as the image files are larger.
2. Click **OK** to close the window and select the resolution.

## 4.3 Image Processing

1. In the **Image processing** click the **Noise Filtering** check box.  
Noise filtering is normally always selected. It make images smoother when they are taken at lower doses.
2. Click **OK** to close the window and select the noise filtering.

## 5. Cleaning and disinfecting the unit

### **WARNING**

Switch off and disconnect the unit before cleaning or disinfecting it.

Do not allow any liquid to enter the unit.

### 5.1 Cleaning the unit

Use a non abrasive cloth moistened with either:

- cool or lukewarm water,
- or soapy water,
- or mild detergent,
- or butylalcohol,
- or ethanol (ethyl alcohol) 96%

to clean the unit. After cleaning wipe the unit with a non abrasive cloth moistened with plain water.

Never use solvents or abrasive cleaners to clean the unit. Never use unfamiliar or untested cleaning agents. If you are not sure what the cleaning agent contains, DO NOT use it.

If you use a spray cleaning agent DO NOT spray it directly at the open or closed unit door.

### 5.2 Disinfecting unit

#### **CAUTION**

Wear gloves and other protective clothing when disinfecting the unit.

Wipe the unit with a cloth dampened with a suitable disinfectant solution such as ethanol 96% Never use abrasive, corrosive or solvent disinfectants. All surfaces must be dried before the unit is used.

#### **WARNING**

Do not use any disinfecting sprays as the vapor could ignite causing injury.

Disinfecting techniques for both the unit and the room where the unit is used must comply with all local and national regulations and laws concerning such equipment and its location.



## **6. Maintenance, repair and disposal**

### **6.1 Maintenance**

The unit does not require any regular maintenance.

### **6.2 Repair**

If the unit is damaged or malfunctions in any way, repairs must only be carried out by a service representative authorized by the manufacturer.

### **6.3 Disposal**

At the end of the useful working life of the unit and/or its accessories make sure that you follow national and local regulations regarding the disposal of the unit, its accessories, parts and materials. The unit includes some or all of the following parts that are made of or include materials that are non-environmentally friendly or hazardous:

- electronic circuit boards
- electronic components

## 7. Symbols that appear on the unit



DANGEROUS VOLTAGE



LASER RADIATION



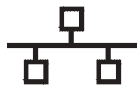
IMPORTANT INFORMATION (Refer to user's manual)



Direct current



Connector for single user interface cable (RJ45) straight cable, transmit/receive swapped at PTC connector.



Connector for multiuser interface cable (RJ45 straight cable)



CE (0537) Symbol MDD 93/42/EEC

This unit is marked according to the Medical Device Directive 93/42/EEC (if the unit contains the CE mark)



Standby



Start



UL Classification symbol

MEDICAL EQUIPMENT WITH RESPECT TO ELECTRIC SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH UL 60601-1, CAN/CSA C22.2 NO.601.1 5D42. (if the unit contains the UL symbol)



This symbol indicates that the waste of electrical and electronic equipment must not be disposed as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer for information concerning the decommissioning of your equipment.

## 8. Technical Specifications

### 8.1 OpTime Unit

<b>Digital Optime Unit</b>	
<b>DXR 50 Classification IEC60601-1</b>	- Class 1 equipment. No applied part - Continuous operation - IPX0 (enclosed equipment without protection against ingress of liquids)
<b>Laser Safety Classification</b>	CLASS 1 LASER PRODUCT EN 60825-1 + A1:2002 + A2:2001
<b>Dimensions (H x W x D)</b>	191mm x 221mm x 394mm (7.5in x 8.7in x 15.5in)
<b>Weight</b>	7 kg (15.5 lb)
<b>Operating voltage</b>	100 – 250 V, 50 60 Hz
<b>Operating current</b>	Less than 1.5 A
<b>Pixel size, selectable</b>	40 µm (Super), 64 µm (High)
<b>Bit depth</b>	14 bits grayscale
<b>Clinical resolution</b>	10 lp/mm
<b>Spatial resolution</b>	12.5 lp/mm
<b>Readout time</b>	4.3 – 7.6 s
<b>Image on-screen time</b>	6 - 9 s
<b>Total processing time</b>	9 - 22 s
<b>Interface cable</b>	UTP (RJ-45) Ethernet required, not supplied (max. 2.5m). Connection to the PC must meet IEC 60601-1 and/or corresponding IEC harmonized national standard.
<b>Operating environment</b>	+10°C - +40°C, 30 – 90 RH%, 700 – 1060 mbar
<b>Operating position</b>	Horizontal, on a stable, vibration-free surface
<b>Storage / transportation environment</b>	-10°C - +50°C, 0 – 90 RH%, 500 – 1080 mbar

## 8.2 Imaging Plates

<b>Soredex imaging plates</b>				
<b>Size</b>	Size 0	Size 1	Size 2	Size 3
<b>Dimensions (mm)</b>	22 x 31	24 x 40	31 x 41	27 x 54
<b>Image size (pixels), 40 <math>\mu\text{m}</math></b>	550 x 775	600 x 1000	775 x 1025	675 x 1350
<b>Image size (KB), 40 <math>\mu\text{m}</math></b>	833	1172	1552	1780
<b>Image size (pixels), 64 <math>\mu\text{m}</math></b>	484 x 344	625 x 375	641 x 484	844 x 422
<b>Image size (KB), 64 <math>\mu\text{m}</math></b>	325	458	606	695
<b>Storage environment</b>	Imaging plates must be stored in their protective box below 33°C. The box must be kept closed to remain dust free.			
<b>Cleaning</b>	Use lint-free cotton or a lens cleaner to wipe the imaging plates. Use a lint-free cloth dampened with ethanol anhydride to remove stains that do not come off easily. Do not use any other cleaning solvents.			
<b>Material</b>	Europium activated barium fluorohalide			
<b>Disposal</b>	Imaging plates are problem waste. Return them to the manufacturer for disposal. Never use damaged imaging plates.			

<b>Disposable protective covers</b>	
<b>Material</b>	Polyethylene
<b>Packaging</b>	Supplied in boxed rolls for all image plate sizes
<b>Disposal</b>	Observe relevant national requirements.

### 8.3 Computer specifications

	<b>Single User PC</b>	<b>Network PC</b>	<b>Network server PC</b>
<b>Operating system</b>	Windows 98SE, ME, NT 4.0 SP6a, 2000 SP2, XP SP1	Windows 98SE, ME, NT 4.0 SP6a, 2000 SP2, XP SP1	Windows NT 4.0 Server, 2000 Server
<b>PC</b>	Pentium III CPU or better, CD-ROM, CD-RW drive recommended	Pentium III CPU or better, CD-ROM, CD-RW drive recommended	Pentium III CPU or better, CD-ROM
<b>RAM</b>	256 MB or more	256 MB or more	256 MB or more
<b>Hard disk</b>	20 GB or more	20 GB or more	20 GB or more
<b>Monitor (minimum, recommended)</b>	17" XGA, 1024x768, True Color, 75 Hz, or 19" UXGA, 1280x1024, True Color, 85 Hz	17" XGA, 1024x768, True Color, 75 Hz, or 19" UXGA, 1280x1024, True Color, 85 Hz	No requirement
<b>Display adapter</b>	16MB video memory or more	16MB video memory or more	No requirement
<b>Network Adapter Card</b>	100 Ethernet (NOTE: 10 Mbit/s only is not compatible)	100 Ethernet (NOTE: 10 Mbit/s only is not compatible)	10/100 Ethernet
<b>Network protocols</b>	TCP/IP	TCP/IP, NetBEUI	Windows NT/2000 Server: - TCP/IP, NetBEUI Novell NetWare: - IPX/SPX
<b>Back- up</b>	Tape drive (SCSI) or other back-up device	See server requirements	Tape drive (SCSI) or other back-up device
<b>Other</b>		One workstation should have CD-RW drive for archive purposes	(UPS) Uninterruptible Power Supply

### 8.4 Main dimensions

