

User Guide of the sensor

Guide d'utilisation du capteur

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This document was originally written in French.

SM651
KODAK RVG 6000 Digital Radiography System User's Guide
Guide de l'utilisateur du système de radiologie numérique KODAK RVG 6000

Revision date: 02/2005

ENGLISH

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You have recently purchased a Kodak RVG 6000 digital radiography system.

We would like to thank you for your confidence and will do everything possible to guarantee that you are fully satisfied.

The Kodak RVG 6000 sensor is the only in the world capable of providing resolution performance similar to that obtained with silver film. The sensor comes with powerful software tools designed to give you optimum system performance through simple, efficient procedures.

This is the user manual for the Kodak RVG 6000 sensor. We recommend that you carefully read this guide in order to get the most out of your sensor.

You should also keep this manual near your equipment in case you need to refer to it in the future.

The information in this manual could be subject to change without warning, or without justification or notification to the people concerned.

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The RVG technology is covered by an international patent registered by the Eastman Kodak Company.

Foreword

This manual contains information on the use of the Kodak RVG 6000 sensor.

The Kodak RVG 6000 sensor is used with the Kodak dental imaging software version 6. The Kodak dental imaging software is specifically designed to make the most of the capabilities of the Kodak RVG 6000 sensor. For optimum image display and processing quality, the RVG 6000 sensor should be used with the Kodak dental imaging software.

The RVG 6000 sensor is a class I device in accordance with annex VII of directive 93/42/EEC concerning medical devices. The CE marking guarantees compliance with the main requirements of this directive.

A thorough lecture of this user guide is necessary to fully exploit the capabilities of the Kodak RVG 6000 digital radiography system.

Good comprehension and use of the system is explained in 6 chapters:

- The imaging chain (sensor, generator, computer)
- Selecting the proper X-ray dose
- Acquiring a good image
- How to make the most of the digital image
- Step-by-step instructions for the acquisition of an image
- Daily and long-term maintenance

Do not hesitate to contact your certified Kodak dealer for any additional information you may need.

RESPONSIBILITY AND WARRANTY

The Eastman Kodak Company guarantees for a period of two years starting from the date of the product invoice, that the aforementioned product does not contain any defects neither in the materials used nor in the manufacturing process. This guarantee is only applicable where the product is correctly used and maintained.

Only damage affecting the products themselves will be taken into account. The customer shall on no account have a claim for compensation of damage that does not affect the product as such. This exclusion of liability shall not apply insofar as mandatory law provides otherwise.

This warranty does not cover damages and faults caused by accident, incorrect or excessive repetitive use, negligence or general wear and tear due to normal everyday use.

The Eastman Kodak company cannot therefore be held responsible for any consequences resulting from the non-application of the instructions contained in the installation and user manuals, namely bodily harm, profit loss, loss of production, data loss, financial loss or any other direct or consequential damage.

If, however, the product is proven to be defective or faulty in materials or manufacture, the responsibility of Kodak will be limited to the repair of the aforementioned product at Kodak's premises or, at Kodak's discretion, its replacement. Regardless of the solution chosen by Kodak, the customer must return the faulty product at his own expense. Other than cost incurred for repair, cost of spare parts and labor, Kodak will only take on the cost of return to the delivery address initially communicated by the client.

Kodak shall be given the opportunity to examine any alleged defect.

Customers are not entitled to withhold payment of invoices or make deductions on account of products claimed to be defective.

Due to the continuous development of its products, Kodak reserves the right to amend at any time and without justification or obligation to notify those concerned the manual and products mentioned therein.

Given that our products are guaranteed in their original packaging at the point when they leave the place of manufacture, Kodak cannot be held liable for any damages caused during transportation.

Consumable spares, software and accessories are excluded under this warranty.

Inspection and verification of the imaging system in compliance with applicable standards

The electronics used in the Kodak RVG 6000 digital radiography system are designed to observe all European and international medical standards.

Once installed, to ensure that the system does not represent any risk to the operator or patient, all equipment associated with the RVG 6000 system must bear a CE marking.

Check that the electrical network complies with the current standards of the country of installation.

Directive 93/42/CEE concerning medical devices

The RVG 6000 system is a product belonging to class I of the Directive Concerning Medical Devices. The RVG 6000 system is an active device that temporarily penetrates the body through a body orifice for diagnostic purposes. The applicable European standards are the General requirements for Safety and Electromagnetic Compatibility (EN 60601-1-2 and collaterals).

Marking and labeling symbols



The Kodak RVG 6000 sensor is a Type BF device; the corresponding standardized label (opposite) (supplied with each kit) must be visibly affixed where the sensor is connected (on the hub or on the computer).

Non-medical devices



For all non-medical devices forming part of the system and which could represent a risk of electric shock, such as the computer or the peripherals, a warning represented by the corresponding standardized label (opposite) (supplied with each kit) must be affixed at a visible location.

This warning symbol means: "Warning: Consult the accompanying documents" and refers to this document. Using accessories that do not meet the Kodak RVG 6000 system equivalent security requirements could result in a lower level of security for the entire system. When choosing accessories, you must take into account their use around the patient and ensure that they comply with the harmonized standards EN 60 601-1 and EN 60 601-1-1. The installation and use of a computer or video peripheral equipment while closely following the steps in this manual will ensure that everything will be in compliance with these standards.

THE IMAGING CHAIN

The KODAK RVG 6000 Sensor



The Kodak RVG 6000 sensor consists of two inseparable parts, the sensor and the remote control.

The sensor is radiosensitive, the active surface is the flat surface marked with a dot. The marking #1 or #2 indicates the size of the sensor used, respectively size 1 and size 2. The back of the sensor, non-reactive to X-rays, is rounded and bears the logo KODAK.



Depending on the kit ordered, you will own a sensor known as "size 1" or "universal" that allows you to realize the majority of the regular peri-apical and retro-coronary procedures or a sensor known as "size 2" intended rather for bitewing, though usable for peri-apical. These sensors are used in the same manner, by consequence we will only refer to the size 1 sensor in the remainder of this manual (except in the positioning section).

The remote control contains all the electronics of the Kodak RVG 6000 sensor. The button on the remote control offers the possibility to activate, at a distance, the acquisition in the Kodak dental imaging software (see further in the software chapter).

The remote control is connected to the computer with its USB 2 connector. The connection can be made with the power on, when the computer is switched on. It is not necessary to start the Kodak dental imaging software prior to connecting the sensor. The acquisition of the image on the other hand can only be made in the imaging module. The disconnection can also be made with the power on, except when an image is being acquired (you could damage the sensor).

CAUTION: Also refer to the "Acquiring a good image" section for the precautions to take when connecting and disconnecting the sensor in certain operating modes.

The X-ray generator

The X-ray generator has a significant impact on image quality. Due to its high sensitivity and its capacity to store an enormous quantity of information, the Kodak RVG 6000 sensor requires high energy rays generated over very short time periods. This way, the images are formed by a maximum number of gray levels and can be processed digitally to assist the operator in extracting the clinical information.

CAUTION

The power of a generator decreases over time, for this reason, the generator must be inspected annually to determine any difference between its nominal and effective power.

As a general rule, the RVG 6000 system is compatible with all generators provided the generator meets the current standard of intra-oral radiology.

The generator can be a high frequency or conventional generator; it must operate with a voltage of 60 to 70KV.

IMPORTANT: The Kodak RVG 6000 sensor is not compatible with generators of lesser specifications.

The generator head must be equipped with a long cone (with a focal point / film distance of at least 20 cm) to concentrate the X-rays toward the sensor. The mechanism supporting the generator should provide excellent stability to avoid any motion blurring due to vibration of the X-ray source.

The Kodak generators perfectly meet the requirements of digital imaging.

The timer

The exposure times are controlled by the timer. Depending on the technologies used, the selected exposure time does not exactly represent the dose of X-rays output by the generator since the timing does not systematically take into account variations in the mains current. X-ray sources of inconsistent quality should be avoided.

The timer should therefore be digital and be able to compensate for current variations (conventional generators).

Special case: The Kodak generators can be directly connected to the electronics of the RVG 6000 system to synchronize image acquisition with the trigger action. This link provides most of all an ergonomic advantage that eliminates the need for the operator to click on the acquisition icon prior to each exposure (see "Software" section).

Note that the image quality for short exposures is linked to the use of the physical synchronization function of the RVG 6000 system and the timer (in particular with the very high frequency Kodak 2000 intraoral x-ray unit).

The computer and screen

The computer and its screen should ideally be situated in or close to the operating area, in the visual field of the practitioner when he is at the chair. Visual access for the patient can be arranged to encourage communication. Thus the RVG system will be available at all times and without reducing the working ergonomics at the chair.

The screen should possess the proper technical display characteristics for the visualization of radiological images. It will have been qualified and set up according to the procedure described in the installation guide of the RVG 6000 system.



CAUTION: A badly adjusted screen or a screen of poor quality can be the cause of diagnostic errors due to the incapacity of the equipment to display the image properly.

The screen should be positioned so as to avoid direct light or reflections that could hinder the reading of the clinical information.

ADJUSTING THE EXPOSURE TIME

The exposure time depends, as in conventional radiology, on the generator type, the patient's morphology and the tooth that is X-rayed. The exposure times given below are suggested times. With experience the settings specific to the configuration in your practice will become clearer over time. Please use the dose-indicator to help you correctly determine the exposure time for your generator.

The dose indicator



A dose indicator is displayed at the bottom of the control panel, for each image taken with a Kodak RVG 6000 sensor. This dose indicator visualizes the quality of the image exposure.

- If the dose indicator band is displayed in red and towards the left of the band, it indicates an under-exposure of the image. Increase the X-ray dose.
- If the dose indicator band is displayed in red and towards the right of the band, it indicates an over-exposure of the image. Decrease the X-ray dose. Certain areas of the image can be saturated, but depending on the areas of interest in the image, the image can nevertheless contain desired information, for instance in the areas that are denser.
- If the dose indicator band is displayed in green and anywhere in the middle of the band, it indicates a correct exposure of the image.

The table below provides you with guidelines for exposure times for an average generator at 70KV and 8mA - these are approximate values and need to be adjusted for your specific generator. If the images are too dark when they appear on-screen please reduce your dose, if the images appear too light please increase your dose, until a satisfactory result is obtained for your generator. The values of the corrections for your generator can be added in the second column of the table.

Acquisition mode	High resolution	
	Seconds	Correction
Upper incisor/canine	0.18	
Upper premolar	0.24	
Upper molar	0.40	
Lower incisor/ canine	0.12	
Lower premolar	0.18	
Lower molar	0.24	

IMPORTANT NOTE: All the operating tips and recommended exposure times are given for an average case representing an adult patient weighing approximately 80 Kg. The distance between the sensor and the generator's focal point is approximately 23 cm. The exposure times will therefore vary according to the patient and the angle used when taking the X-ray. Remember that the dose should increase proportionally to the square of the distance.

REMINDER: The time that should be programmed varies as the square of the distance. The dose should be increased if the distance sensor / focal point of the generator increases.

ACQUIRING A GOOD IMAGE

To obtain a good image, some simple rules should be followed. All the rules applicable in classic radiology also apply to digital radiology; the same anatomy notions permit the positioning of the sensor in the mouth. A period of adaptation will however be necessary to get used to the new dimensions of the sensor compared to film.

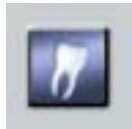
Preparation of the sensor

NOTE
Follow the additional instructions on hygiene given further in this manual

To ensure maximum hygiene, cover the sensor beforehand with a disposable protective sheath

Use a new protective sheath for each patient. For optimum performance, use protective sheaths specifically designed for the RVG 6000 sensor. You can obtain these from your usual supplier under the Kodak reference: IX007.

Preparation of the software



There are two possible situations. If a Kodak generator is linked to the computer (synchronization link) it is possible to acquire a new image at all times as long as the sensor is in the area covered by the X-rays. The acquisition icon is constantly green (opposite).

If the computer does not have a synchronization link with the timer, the Kodak dental imaging software needs to be told that an image is going to be acquired before dispatching the X-rays towards the sensor. The icon will constantly be red, click on it (or hit the F2 key) to activate it (turn green) for a 90-second delay (if this delay has elapsed before the X-rays are dispatched, you need to activate the icon once again).

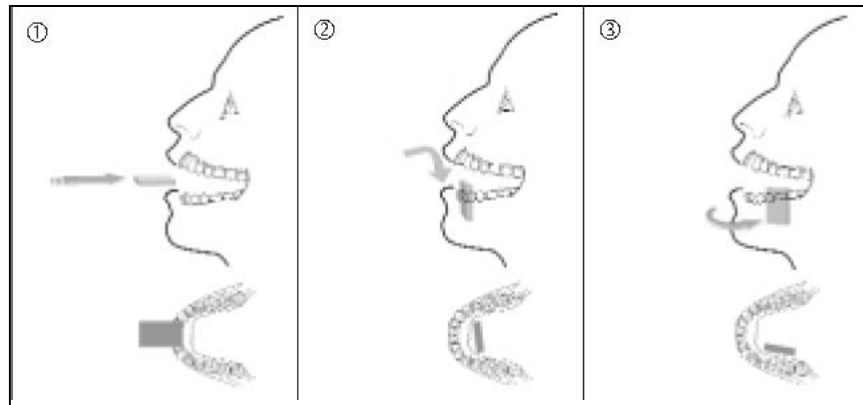
CAUTION: Never disconnect the sensor during the 90-second countdown as this could seriously damage the sensor. Likewise never disconnect the sensor during image acquisition itself.



For greater flexibility and ergonomics the RVG 6000 sensor lets you control the acquisition icon at a distance, from the operating area (patient) without manipulating the mouse or keyboard. Click on the button of the remote control to activate the sensor for a 90-second delay.

The images appear vertically by default as if from a tooth from the lower dental arch. It is possible to pre-orientate the image before acquisition by using the button on the remote control; each click corresponds to an orientation of the sensor in the mouth. Simply select the configuration that is most fitting. The image will then appear in the clinical sense.

Positioning



The sensor is placed in the mouth in the same way regardless of the type of positioner being used.

For a mandibular image:

- 1 Have the patient draw the tongue towards the back of the mouth. Insert the sensor holding it horizontally.
- 2 Then turn the sensor downward to place it in a vertical position.
- 3 Center the sensor on the tooth to be X-rayed by sliding it distally, and asking the patient to push the tongue to the opposite side. Do not hesitate to compress the mucous membranes to properly frame the apical area. The patient can then relax the tongue, which will naturally fit around the sensor. For premolars and incisors, it is preferable to move the sensor towards the center of the mouth by compressing the tongue when the mouth closes to relax the muscles. The rigidity of the sensor and the positioning system will aid in realizing such images.

For a maxillary image:

- 1 Insert the sensor, maintaining it horizontally.
- 2 Turn the sensor upward so that it is vertical or parallel to the axis of the tooth to be X-rayed.
- 3 Center the sensor on the tooth to be X-rayed by sliding it distally. Do not hesitate to use the roundness of the palatal arch and place the sensor at the center of the cavity.

NOTE

For more details on the type of positioners, see further in "Different positioning systems".

Different positioning systems

The rules for positioning the sensor in the mouth are the same as those used in classic radiology. A short adaptation period will nonetheless be required due to the rigidity of the sensor compared to silver film. Note that the rigidity guarantees the absence of distortion of the X-ray image.

Different systems are available for positioning the sensor in the mouth. None however can fulfill by itself all possible needs. Positioning is actually dictated by the morphology of the patient, the habits of the practitioner and what needs to be seen, rather than the positioner itself. The tools need to be used according to the restrictions dictated by the external parameters. One can switch from the paralleling technique to the bisecting technique, from holding the sensor with the finger to using Rinn holders...



The Rinn set (supplied with each RVG 6000 system) allows you to take images using the paralleling technique with a size 1 or size 2 sensor, horizontally or vertically. For more details on the contents of the kit and its use, refer to the user manual in the box.



Opposite, vertical and horizontal positioners for operating radiology (supplied with the RVG 6000 size 1 sensor kit) allowing you to use the paralleling technique for peri-apical images as well as free positioning images, this to dissociate radiologically superimposed structures. This system requires the participation of the patient who needs to maintain the positioner himself, after the practitioner has positioned it in the mouth. As the positioners are not bulky it allows the acquisition of images behind a rubber dam.

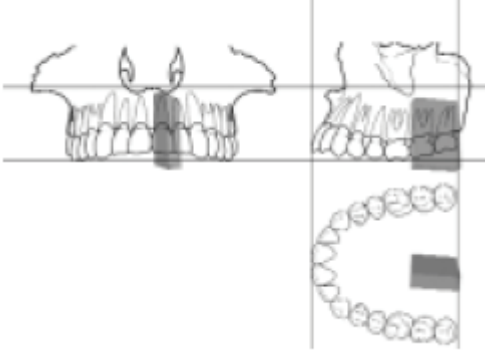
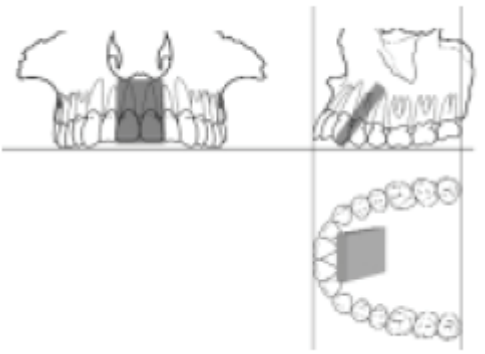
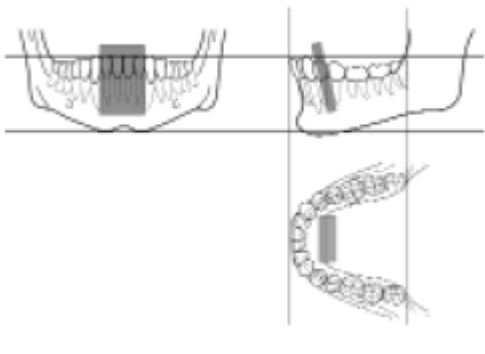


Opposite, the set of 3 toothbrush positioners for peri-apical and bitewing images (supplied with the RVG 6000 size 2 sensor kit). This system requires the participation of the patient who needs to maintain the positioner himself, after the practitioner has positioned it in the mouth. There is no indicator marking the zone to be X-rayed to help framing the image.



Opposite, the set of 2 toothbrush vertical and horizontal positioners for peri-apical images (optional for the RVG 6000 size 1 sensor). This system requires the participation of the patient who needs to maintain the positioner himself, after the practitioner has positioned it in the mouth. There is no indicator marking the zone to be X-rayed to help framing the image.

A few positioning examples

	<p>Upper posterior block, do not hesitate to use the roundness of the palate to place the sensor in order to frame the apical area. Use Rinn type positioners for paralleling technique or stirrup-shape positioners.</p>
	<p>Upper incisive block, bisecting technique; the patient holds the sensor against the tooth with a finger. For the paralleling technique, move the lower part of the sensor away from the incisive edge to place it parallel to the real axis of the teeth.</p>
	<p>Lower incisive block; for a narrow mouth, move the sensor back parallel to the real axis of the teeth while pushing back the tongue slightly. The blunt edges of the sensor can be used to depress the floor of the mouth to better frame the apical area.</p>

HOW TO MAKE THE MOST OF THE DIGITAL IMAGE

The digital images of the RVG 6000 sensor contain a vast quantity of information. To exploit it to its full potential, simple and efficient tools have been created in the Kodak dental imaging software.

NOTE: For more detailed information see also the user guide of the Trophy Mac imaging software located on the Trophy Mac CD-ROM

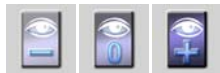
Notion of the interest zones of the image

The black and white of the film is replaced in digital by a vast quantity of gray levels. It is difficult to simultaneously distinguish the same level of detail in the dense tissues and the soft tissues (for example). Therefore the image is divided into zones of interest to be able to focus the reading of the image on a group of details:

- Crowns and inter-proximal zones
- Bone crest, soft tissues and the cervical part of the tooth
- Apical region

Using the contrast management tools a specific zone can thus be enhanced and all information extracted. Lecture of the specific zone will be made easier while the other zones can be saturated with black or white. The whole advantage of the digital image is the possibility to move from one zone to another while working on the same image, as it would have been acquired with different exposure settings.

Good contrast management



The contrasts can be managed, after image acquisition, in a simple and automatic way using the “Linear”, “Endo” and “Contrste” (Dentine-Enamel Junction) buttons to enhance the different zones of interest.

For more precision and freedom it is possible to deploy the control panel to gain access to the manual contrast and brightness controls. By applying strong contrasts it is possible to create zones of investigation yourself.

The filters



The sharpness filter has specifically been designed to strongly emphasize a radiological feature that could go unnoticed in the pure image. The notion of filtered image is thus always compared against that of the pure image. The filter is strong enough to emphasize lateral ducts or small fissures, and by consequence exaggerates details that are already clearly visible on the image, such as amalgams or any other high-density material. The filter therefore aids in quickly spotting the subtleties of the image. It is necessary to confirm the interpretation by removing this filter and using a contrast tool such as the Highlight.



The Highlight has been conceived to reinforce contrasts locally in an area of the image. When the Highlight is selected in the toolbar, the cursor changes shape to a circle. Simply click on the mouse button and keep it depressed to activate the Highlight on the area of the image you wish to investigate. A circle appears on screen as long as the mouse button is depressed. Details that are hard to discern with the naked eye will be enhanced in the area of the image that is covered by the Highlight circle. The larger the diameter of the circle, the less efficient it will be. The diameter can therefore be adjusted according to the area to investigate or the level of enhancement required by using the slider control displayed above the control panel. The Highlight is round so it can fit inside cuspids and to investigate the interproximal areas. Its purpose is the detection of caries and fissures in the enamel. The data from the Highlight is exempt of artifacts (unlike the filters) and there is no counter-indication to its use. It can be applied on a reduced image as well as on a real size image (100% or 1:1).

The relief filter interprets the gray shades in bulk, so that, when two grays are too similar to be distinguished, the filter can enhance one compared to the other by adding relief. This filter, for instance, is very useful to distinguish the extremity of an endodontic file placed in a canal and that is being confused with Gutta Percha or cement. The relief filter can be further tweaked with manual adjustments of brightness and contrast.

CAUTION: The information provided by the filters is only indicative. Diagnosis should always be confirmed on a non-filtered image.

Using the full resolution

TIP
Do not hesitate to step back from the screen to better investigate an image!

The images are by default displayed on screen at a reduced size to be able to visualize several at a time. It is then impossible to distinguish the finest details.

The larger the image on screen, the more details will be visible. The optimal size of the image is obtained by double-clicking on it. The image is then displayed at real size (with all the pixels composing it – mode 100% or 1:1). This way, details of some tenths of a millimeter can be exploited. This is similar to using silver film with a very strong magnifying glass.

Depending on the size and resolution of the screen, the image at 100% or 1:1 might still seem too small; using the “Spacebar” on the keyboard the image can be displayed.

Taking measurements



Measurements taken on X-ray images always contain a certain degree of uncertainty due to the properties of the radiological examination itself. The projection phenomenon renders a three-dimensional reality into a reduced two-dimensional image. The curves positioned in the axis of the X-ray beam are thus translated into straight lines on the image.

Ideally you should make sure the sensor positioning technique respects the rule of parallel planes and that the subject to be measured does not contain any curves in the axis of the X-ray beam.

It is possible to calibrate the measurement tool to compensate for the conic enlargement of the projection (depending on the distance object to sensor or focal point to object).

CAUTION: The measurement results can be flawed, among others, due to the incidence of the X-ray beam and the geometric projections. The measurements need to be taken on screen and with the tools provided in the Kodak dental imaging software, it is forbidden to take measurements on a printed image!

Saving images

The images can be saved. When leaving the imaging screen, the Kodak dental imaging software automatically checks the images that have not been saved and asks for each image whether it needs to be saved or not. The saved images are stored in the patient file. At the time of saving, it is possible to associate a tooth number to the image, as well as comments.

Printing images

The images can be printed on any printer connected to the computer and recognized by the operating system. A black and white printer is preferred, either inkjet, or thermal for optimal depiction (certain printers only possess a color cartridge and constitute the gray levels with base colors, the print is then not of optimal quality).

CAUTION: Regardless of the paper quality, it is impossible to faithfully reproduce the content of a digital image. Therefore the true clinical support remains the digital file.

SUMMARY: STEP-BY-STEP INSTRUCTIONS FOR TAKING A DIGITAL IMAGE

REMINDER

If the RVG system is connected to a Kodak generator, the image acquisition can be made at any time by triggering the generator.

1. Cover the sensor with a disposable sheath and place the sensor on the desired positioner.
2. Select the timer parameters for your generator. For patient comfort, position the generator near to the patient's head so that the patient does not wait too long with the sensor in the mouth.
3. Using the mouse, activate the acquisition icon for the RVG 6000 sensor, or use the button on the remote control (at this stage you can select the orientation of the final image). You now have 90 seconds to take the X-ray image.
4. Position the sensor and its positioner in the patient's mouth.
5. Slide the aiming ring along the support rod to bring it as close as possible to the patient's cheek (if a Rinn positioner is used).
6. Position the generator cone as close as possible to the patient.
7. Check that the acquisition icon is still green (otherwise click on the icon again, 90 seconds having elapsed; or use the button of the remote control) and press on the X-ray trigger.
8. The image appears on screen after a few seconds.

SHARING THE RVG 6000 SENSOR BETWEEN DIFFERENT WORKSTATIONS

By sharing between several workstations, a practice or clinic with several chairs only requires a single sensor, which can be used by all the practitioners in turn based on an agreed-upon arrangement.



CAUTION

Do not disconnect the sensor after you have clicked on the acquisition icon (displayed green on screen) as this can damage your sensor.

The RVG 6000 sensor can be shared between several computers by moving it from workstation to workstation. When connecting it to the USB 2 port on the computer (installed beforehand with the Kodak dental imaging software and corresponding drivers) the sensor is recognized automatically and is operational.

To share images between workstations, you can connect them to a network without having to change the configuration described above. The Kodak dental imaging software only needs to access a shared database on the same workstation or on a remote workstation (refer to the Kodak dental imaging software user guide to determine the database path).

You can print images either on a printer attached to each computer or to a printer shared on the network.

DAILY AND LONG-TERM MAINTENANCE

Hygiene and first-level disinfection

Carefully follow the procedure detailed earlier in this manual on how to prepare the sensor to ensure maximum hygienic safety for the patient.

NOTE: Our sensors are supplied non-sterile.



CAUTION

Never place the sensor and/or remote control in an autoclave as this could result in serious damage to the sensor.

After each patient, the RVG 6000 sensor must be thoroughly disinfected. Remove the hygienic protective sheath and thoroughly clean the sensor with a disinfecting wipe. If the protective sheath is torn during examination of the patient's mouth, see further for more detailed instructions on the complete disinfecting process and recommended products.

Use disinfecting cloths containing the following active ingredients:

- PROPANOLS
- BENZOÏC AND LACTIC ACIDS

NOTE: Between each patient, clean the sensor and the first centimeters of the cable using a disinfecting clot

Final disinfection of the sensor

CAUTION

Never immerse the connector located on the other end of the cable, nor the remote control.

NOTE

It is necessary to immerse part of the cable to guarantee a good disinfection, without however immersing the remote control.

If the hygienic sheath has been torn during the examination in the mouth or if the sensor has been soiled when removing the protective sheath, the sensor must be fully disinfected as detailed below:

- 1 Prepare a disinfecting solution by following the manufacturer's instructions for the product used.
- 2 Remove any residue and clean the sensor by gently rubbing it with a mixture of water and soap or detergent.
- 3 Immerse the sensor in the disinfectant solution for the period of time recommended by the manufacturer of the product used.

DISINFECTANTS:

According to the Directive concerning Medical Devices, disinfectants are considered "accessories to the devices" and therefore fall under the scope of the Directive. First-level disinfectants (this stipulation does not concern final disinfection) must not contain aldehydes.

All brands with the CE marking, compliant with the Directive and with the molecular characteristics described below can be used.

First-level disinfection:

LYSETOL SA or any other product containing the following active ingredients:

- N-coco, N-propyl
- Diguanidine diamine diacetate
- Phenoxypropanols
- Benzalkonium chloride

Final disinfection:

GIGASEPT or any other product containing the following active ingredients:

- Dialdehyde succinate
- 2.5 dimethoxytetrahydrofuran
- Formaldehyde

Cleaning the cable



The cable needs to be cleaned with precaution. We recommend the use of a disinfecting wipe. Hold the sensor in one hand, with the other run the wipe from the end of the sensor over the first 20 centimeters of the cable **WITHOUT PULLING** on the cable insulation. The wipe must slide without forcing it; the pinch of the cable between the fingers must be **MINIMAL**.

Cleaning the remote control



We recommend the use of a disinfecting wipe. The precautions for cleaning the cable on either end of the remote control are the same as for the cable at the sensor side (see above).

Storage after use



We strongly recommend that you store the sensor in its case at the end of the day in order to prevent it from falling or from coming into contact with abrasive cleaning products when your practice is being cleaned.

Precautions for use of the sensor



Never...

- place the sensor in a sterilizer or autoclave
- allow the sensor to fall
- pull on the cable, even when removing the disposable protective sheath
- roll or walk on the cable
- request the patient to bite on the sensor or the cable
- disconnect the sensor during the 90 second delay (in non-synchronized mode) or during acquisition
- force the cable at the sensor side (bend, pull)
- immerse the remote control

Electrostatic discharge



- When the RVG 6000 sensor is not connected, it is recommended to store it in its case.
- Never touch the display screen and the RVG 6000 sensor simultaneously as this can result in serious damage to the sensor.
- Never touch the contact points of the USB connector of the sensor.

Protection of the computer data

The database must be backed up daily on several high capacity magnetic media (streamer, ZIP, DAT...) used alternately (ask for advice from your computer dealer). The copies should be stored in a secure location.

Quick troubleshooting

Outlined below are a few troubleshooting methods for resolving most problems encountered without the need to have any specific technical knowledge. Assumed is that the system is correctly installed.

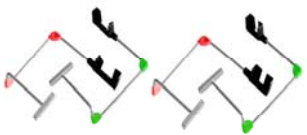




Try to solve the problem by following the instructions given below. If the problem persists, or if it is not outlined below, please contact your certified Kodak dealer.

Symptom	Cause and corrective action
After triggering the X-rays, no image appears on the screen	<ul style="list-style-type: none">1- Make sure a patient record is open in imaging mode2- If the RVG 6000 system is not connected to the timer:<ul style="list-style-type: none">- Check that the acquisition icon is active (not grayed out). If the icon is grayed out, check the connection of the sensor on the USB 2 port-The acquisition function was not activated, click on the icon, the icon should turn green (or use the button on the remote control), take the X-ray image within 90 seconds. Once this delay has elapsed, click on the icon again if necessary3- If the RVG 6000 system is connected to the timer:<ul style="list-style-type: none">- Check the connection with the timer- Check that the hub is powered properly- Contact your dealer
Image is pale and contains noise (grained image)	<ul style="list-style-type: none">1- The exposure time is too short, increase it2- The selected acquisition mode does not correspond to the X-ray dose used. See the "Generator" section in this manual3- The generator voltage is too low (<60 KV rms), have the generator checked4- The generator is too far from the patient with respect to the selected dose5- Check the monitor settings (contrast and brightness) and ensure there are no reflections on the screen
Image is too dark	<ul style="list-style-type: none">1- The exposure time is too high, lower it2- The selected acquisition mode does not correspond to the X-ray dose used. See the "Generator" section in this manual3- Check the monitor settings (contrast and brightness) and ensure there are no reflections on the screen

Symptom	Cause and corrective action
Image is blurred	<p>1- Patient moved during exposure</p> <p>2- Generator head was not stable</p> <p>3- Use an image filter, caution: refer to the comments on filters in the user guide of the Kodak dental imaging software</p>
Image is white	<p>1- Active face of sensor was not exposed to X-rays</p> <p>2- X-ray dose is insufficient</p> <p>3- Sensor is not (or incorrectly) connected</p> <p>4- Check that the generator is producing X-rays, have it checked by a certified technician</p>

Accessories and consumables for the RVG 6000 sensor

The following products can be ordered from your certified Kodak dealer:

	<p>For the size 1 sensor only Red for right maxillary and left mandible Green for left maxillary and right mandible Horizontal and vertical Can be autoclaved at 135°C Product code: CI753</p>
	<p>For the size 1 sensor only Red for right maxillary and left mandible Green for left maxillary and right mandible Horizontal and vertical Can be autoclaved at 135°C Product code: CI754</p>
	<p>For the size 2 sensor only Red for right maxillary and left mandible Green for left maxillary and right mandible Black for bitewing Can be autoclaved at 135°C Product code: CI755</p>
	<p>Kit for paralleling technique (sensor size 1 and 2) Can be autoclaved at 135°C Product code: KY027</p>
	<p>Disposable hygienic sheaths for sensor size 1 and 2 Product code: IX007</p>