scan·x®

Digital Imaging System
In-line Erase

Part Numbers: B7300

Instruction Manual

ALLPRO IMAGING

ISO 9001
ISO 13485
FDA-GMP COMPLIANT

FOREWORD

ALLPRO Imaging has prepared this document as a guide to the proper use of the ScanX® 12 Digital Imaging Systems with In-Line Erase.

Refer to the following companion documents as necessary:

Document	Part Number
Imaging Plate Intensifier Screen Warning Instructions	73020
Phosphor Storage Plate Instruction Sheet	73474

TABLE OF CONTENTS

Congratulations on your purchase of the ScanX® 12 Digital Imaging System with In-Line Erase the latest imaging product from ALLPRO Imaging, a leading manufacturer of dental, medical and veterinary equipment since 1962. The ScanX 12 processes Phosphor Storage Plates (PSPs) and has been designed and manufactured using state-of-the-art technology to give many years of dependable service. The ScanX 12 is hereafter referred to as ScanX in this manual.

This manual covers the installation, operation and maintenance of the ScanX. Review and follow the guidelines included in this manual to ensure that your ScanX gives the highest level of service.

The ScanX is warranted to be free from defects in material and workmanship from the date of installation for a period of one year. The ScanX is designed solely for use in an office environment and this warranty is not applicable to other applications.

If your ScanX cannot be repaired in the field and turns out to be defective due to faulty materials and/or workmanship within the warranty period, ALLPRO Imaging will arrange to replace the unit at its expense within two business days. ALLPRO Imaging will ship the Customer a replacement, factory refurbished ScanX. The Customer then returns (at ALLPRO Imaging's expense) the malfunctioning system back to ALLPRO Imaging in the same shipping container

Upon determination of eligibility by ALLPRO Imaging's Technical Support personnel, the Customer must return the malfunctioning ScanX within 15 business days or Customer will be invoiced for the replacement ScanX. Any returned units become the property of ALLPRO Imaging. In case of replacement of the product, the Warranty Period will remain in effect for 6 months or for the remaining period of the original warranty; whichever term is longer.

The ScanX Standard Swap Warranty Coverage applies provided the product is handled properly for its intended use, in accordance with its operating instructions. This warranty does not apply to damage due to shipping, misuse, careless handling or repairs by non-authorized personnel. Warranty is void if installed or serviced by other than authorized service personnel. If unit fails, and the problem is determined to be caused by the lack of recommended scheduled maintenance as outlined in this Instruction Manual (i.e. worn Belt Drives or Brushes) , this failure would not be covered. This warranty does not cover accessories.

The Phosphor Storage Plates (PSPs) are designed for use with the ScanX and will be replaced for a period of 30 days from the date of purchase if defective in manufacturing or packaging.

Quickly and easily register your new ScanX on-line. Just have your product model and serial numbers available. Then go to ALLPRO's web site, **www.allproimaging.com**, click the **Warranty Registration** link and complete the registration form. This on-line registration ensures a record for the warranty period and helps us keep you informed of product updates and other valuable information.

This equipment has been designed to minimize exposure of personnel to hazards. While the ScanX is designed for safe operation, certain precautions must be observed. Use of the ScanX **not** in conformance with the instructions specified in this manual may result in permanent failure of the unit.

General Safety Information.

❑ Check with your authorized dealer for packing material requirements if it is necessary to return the product to the manufacturer. Correct packing guarantees optimal safety of the device during transport. Should it become necessary to return the device to the manufacturer during the warranty period, Air Techniques will not accept claims for damage arising from using incorrect packing materials.

❑ Before every use, the operator must check the functional safety and the condition of the device.

❑ The operator must be knowledgeable in the operation of the device.

❑ This device is not to be used in any areas where the atmosphere could cause fire or explosion.

Markings.

The following terms or symbols are used on the equipment or in this manual to denote information of special importance:

The ScanX is a Class I Laser Product [Class 1 Laser Product (IEC)]
This warning label identifies the ScanX as such a product and describes the potential danger to humans in the event the product is opened during service. There is no laser radiation from this product when operated and maintained as instructed.

The Laser Product Accession Number is 0212282-00

Alerts users to important Operating and Maintenance instructions. Read carefully to avoid any problems.

Indicates the ScanX is a UL Listed product.

Warns users that uninsulated voltage within the unit may be of sufficient magnitude to cause electric shock.

Indicates date of manufacture.

Identifies the name of the manufacturer.

ATTENTION USERS:

Manufacturing date code on serial number label is in the format:
MONTH YYYY.

Authorized Dealer Service Only.

The interior of the ScanX is only accessible by removing hardware with tools. It should be opened and serviced only by an authorized dealer service technician.

Failure to heed this warning may result in equipment damage or personal injury, and **will void any and all warranties.** Contact your authorized dealer for service information.

Use of Accessory Equipment.

The use of ACCESSORY equipment not complying with the equivalent safety requirements of this equipment may lead to a reduced level of safety of the resulting system.

Use of ACCESSORIES or cables other than those specified or provided by the manufacturer may result in increased EMISSIONS or decreased IMMUNITY of the EQUIPMENT.

Electrical Safety Notes.

❑ The line cord is the main power disconnect device.

❑ Use only the line cord provided with the unit.

❑ Use only grounded electrical connections.

❑ To avoid risk of electric shock, fire, short-circuit or dangerous emissions, never insert any metallic object into the equipment.

❑ Only use connection cable(s) delivered with the device.

❑ Check the device cables for possible damage before switching on. Damaged cables, plugs and sockets must be replaced before use.

❑ Never touch open supply outlets and patients simultaneously.

❑ Do not locate unit where it could be sprayed with water, or in a damp environment.

Knowledge of Warnings and Cautions.

Users must exercise every precaution to ensure personnel safety, and be familiar with the warnings and cautions presented throughout this manual and summarized below.

In this manual, the following definitions apply for all WARNINGS and CAUTION Statements:

WARNINGS: Any operation, procedure or practice, which, if not strictly observed, may result in injury or long-term health hazards to personnel.

CAUTIONS: Any operation, procedure or practice, which, if not strictly observed, may result in destruction of equipment or loss of effectiveness or damage to equipment and Phosphor Storage Plates (PSPs).

DANGER: Opening the ScanX by removing any covers or components makes the equipment into a Class III b Laser Product. [Class 3B Laser Product (IEC)].

WARNINGS -

Only trained professionals should use this device.

Federal law prohibits the sale of this device to individuals other than licensed professionals. Use of this device, other than as described in this manual, may result in injury.

The ScanX contains a laser and is a Class 1 [Class 1 (IEC)] Laser Product.

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. The laser is on only during an active scan.

Only a trained technician from an authorized dealer should remove a cover from the ScanX.

Direct eye contact with the output beam from the laser may cause serious damage and possible blindness.

Do not open the ScanX to maintain it.

The ScanX contains no user serviceable parts. If there is a service problem, contact your authorized dealer.

Operate ScanX in dry environment.

To prevent fire or electrical shock, do not expose this appliance to rain or moisture.

Do not use damaged Phosphor Storage Plates (PSPs).

Damaged PSPs may not provide reliable diagnostic images.

Disposal of PSPs.

Consult with your federal, national, state and local government, for rules and regulations on disposal of PSPs.

CAUTIONS -

Completely clean and erase PSPs before taking an X-ray exposure.
See the *PLATE PREPARATION* section of this manual.

Minimize exposing an X-ray exposed PSP to light.
Transfer the PSP into the Inlet slot quickly to minimize exposure to light.

Use care in handling PSPs - Avoid fingerprints and scratching
Refer to the instructions provided with the PSP package for further information on handling.

Use of other manufacturer's imaging plates
Do not put PSPs designed for drum-type or other scanners in the ScanX. The hooks and/or frames on the ends or around these PSPs, or PSPs of different thickness (especially thicker ones) will damage the ScanX. PSPs from another manufacturer may be used as long as the specifications are the same as those for the ScanX PSPs.

IMPORTANT INFORMATION

General Notes.

❑ All instructions in this manual form an integral part of the unit. They must be kept close to the unit and in readiness whenever required. Precise observance of these instructions is a pre-condition for use of the unit for the intended purpose and for its correct operation. This manual should be passed on to any future purchaser or operator.

❑ Safety of the operator as well as trouble-free operation of the unit are only ensured if use is made of original equipment parts. Moreover, use may only be made of those accessories that are specified in the technical documentation or that have been expressly approved and released by the manufacturer for the intended purpose. The manufacturer cannot warranty for the safety or proper functioning of this unit in the case where parts or accessories are used that are not supplied by the manufacturer.

❑ There is no guarantee against damage arising where parts or accessories are used that are not supplied by the manufacturer.

❑ Observe the usage and storage conditions.

❑ Appliances which accumulate condensation or become wet through a change of temperature may only be operated after they are fully dry again.

❑ The manufacturer regard themselves as being responsible for the equipment with regard to safety, reliability and proper functioning only if assembly, resetting, changes or modifications and repairs have been carried out by an authorized dealer and if the equipment is used in conformity with the instructions contained in this manual.

❑ The device conforms to the relevant safety standards valid at this time.

❑ Any reprinting of the technical documentation, in whole or in part, is subject to prior written approval by the manufacturer.

IMPORTANT INFORMATION

Correct Usage

- ❑ Operation of the ScanX may only be carried out by suitably qualified personnel.

- ❑ The ScanX is only to be used in the processing of exposed PSPs.

- ❑ The ScanX should be used in a room equipped for it.

- ❑ Room temperature should be in the range 50 to 105°F (10 to 40°C) with relative humidity between 5 and 95%.

- ❑ If the device is brought into the room of operation from a cooler environment, condensation can build up. Do not connect the device until it has warmed up to room temperature and is absolutely dry.

- ❑ This room should be free of all possible interferences (e.g. strong magnetic fields), as these could affect the operation.

- ❑ The ScanX may only be operated together with authorized software.

- ❑ Correct usage includes observing all installation and operating instructions and adherence to the set-up, operation and maintenance instructions.

- ❑ Any use, above and beyond that described in this manual as correct usage, will invalidate the warranty.

Incorrect Usage

- ❑ Any use that is not described in this manual as correct usage is considered as incorrect usage. The manufacturer is not to be held liable for any damage caused as a result of incorrect usage. The operator bears all risks.

PURPOSE OF THIS MANUAL

This manual provides the information necessary for the setup, operation and routine care and maintenance of the ScanX 12 Digital Imaging Systems with In-Line Erase, P/N B7300.

This manual is not to be used as a replacement for training in radiography.

For information regarding the computer system and imaging software, refer to the appropriate documentation provided with your computer hardware and software.

SYSTEM DESCRIPTION

The ScanX is a digital radiography system that utilizes reusable Phosphor Storage Plates (PSP) in place of X-ray film to produce diagnostic quality digital radiographs. The ScanX produces a digital image by scanning PSPs, which have been exposed to X-rays. The ScanX allows computer storage, processing, retrieval and display of the computed radiographic images utilizing a user supplied software and computer. An additional feature of the ScanX consists of an in-line plate eraser function that removes the latent image from the plate immediately after scanning. This design provides an efficient one-operation scanning and erasing process leaving the user with a PSP ready for the next X-ray procedure.

Unpacking

The ScanX may be shipped in a very special shipping case covered by a double-wall corrugated over-packaging. A deposit fee has been paid for this case, which may be returned to ALLPRO Imaging for a full refund of the fee using a Return Authorization (RA) number, or retain, without refund of the fee, to protect the ScanX during transport or future shipping. Retain the over-packaging to return the shipping case.

Included System Components

The ScanX consists of the model and accessory kit as listed below:
(See TECHNICAL DATA for ratings and identification.)

Description	Part Number
Main ScanX 12 ILE Assembly	B7310
Accessory Kit containing:	
24 V Power Supply Adapter	B7095
Line Cord	73096
Computer Connector Cable, USB	B3554
Quick Start Instructions	B7208
PSP Protective Cushion Kit	74030B
ScanX Cleaning Sheet Sample Kit	B2030
Drivers, Utilities and Instruction Manual Disk	B7375

Inspection

Verify that all listed items were received. If any item is missing, notify your authorized dealer. Unpack each component of the ScanX and inspect for physical damage such as scratched panels, damaged connectors, etc. If any damage is noted, notify your authorized dealer immediately so corrective action can be taken.

IF YOU NEED ASSISTANCE

ALLPRO Imaging ScanX systems are designed and manufactured to high standards. They are easy to install and use and typically deliver high-quality performance. If any difficulties are encountered with this product, please contact ALLPRO Imaging Technical Support at **1-800-247-8324**.

For additional information, please contact your authorized dealer or visit our web site, **www.allproimaging.com**

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Melville, New York 11747 USA

COMPUTER SYSTEM REQUIREMENTS

IMPORTANT: To operate the ScanX, it must be connected to a compliant Computer System, and the computer must be loaded with an authorized Imaging Software. Neither the Computer System nor the Software is provided by the manufacturer. Contact your dealer for available Computer System and Software options.

Computer System Requirements

The minimum computer system, computer and monitor, requirements necessary to operate the ScanX are listed below.

Operating System:	Windows XP Professional with Service Pack 3 or later for an Intel 32-bit processor;
	Microsoft Windows XP Professional 64-bit Edition with Service Pack 2 or later for an Intel 64-bit extended (x64) processor;
	Microsoft Windows Vista Business, Enterprise, or Ultimate with Service Pack 1 or later for an Intel 32-bit or an Intel 64-bit extended (x64) processor; or
	Microsoft Windows 7 Professional, Enterprise, or Ultimate for an Intel 32-bit or an Intel 64-bit extended (x64) processor.
USB Port/Version:	USB 2.0 or later
Hard Drive:	200MB available disk space required to start scanning
Image Management Software:	Compatible authorized third-party software (not included with product).
Optical Drive:	CD-ROM Capable

Recommended Components

The items listed below are recommended (but not required) computer system components to aid in ScanX operation

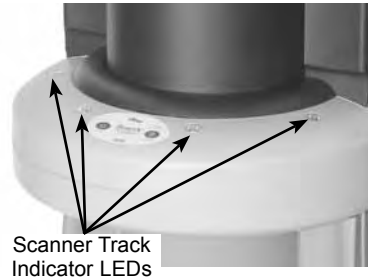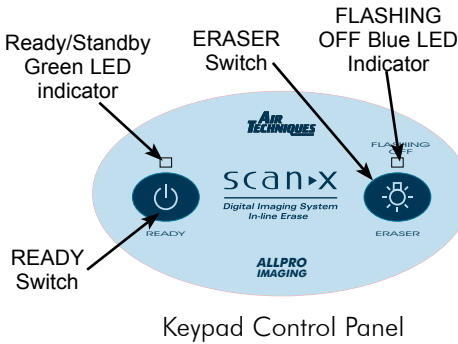|	
CPU/Speed:	3.0 GHz Intel CORE2
System RAM:	2 GB
Monitor:	20-inch SVGA, 1024 x 768 or higher resolution, contrast ratio 450:1, .22 dot pitch capability.
Video Display Adapter:	32 MB RAM
Peripherals:	Standard Keyboard & Mouse Backup Device External Surge Protector Power supply backup

System Properties.

If unsure of the operating system version installed, check that it meets the necessary requirements by checking the *System Properties* window.

This is done simply by right clicking the *My Computer icon*. Selecting *Properties* from the menu list displays the *System Properties* window as shown. The installed operating system version is listed under the *General* tab.

The *System Properties* window can also be opened from the Desktop *Start* button. Just press the *Start* button and select *Settings→Control Panel* and then click *System* icon.

Keypad Control Panel

Scanner Track Indicator LEDs

Keypad Control Panel

READY Switch	Toggles between the Standby and Ready mode as follows: 1. Press to switch from the Standby mode to the Ready mode. 2. Press and hold down for at least 2 seconds to switch to the Standby mode from the Ready mode.
Ready/Standby Green LED indicator	Illuminates green to indicate that the ScanX is Ready for operation. When extinguished, it indicates that the ScanX is in the Standby mode.
ERASER Switch	Toggles between turning the Erase function OFF and ON. This switch has **no** effect once the plate scanning or erasing starts.
FLASHING OFF Blue LED indicator	Illuminates steady blue to indicate that the Erase function is ON and PSPs will be erased after scanning. Flashes blue to indicate that the Erase function is OFF and PSPs will **not** be erased after scanning.

4 Scanner Track Indicator LEDs

Illuminate green when the Scanner has been activated, indicating that a PSP can be fed into the ScanX.

Illuminate yellow, indicating the PSP has been sensed and the Scanner is transporting the PSP.

Electrical Requirements:

Supply Voltage:	100 to 240VAC +/- 10%, 50/60 Hz
Supply Current:	1.2 A Maximum
Line Cord:	North American style 10 foot long
	Hospital Grade line cord, P/N 73096.
Power Supply:	24 Volt Power Supply, P/N B7095 provided

Physical Properties:

Dimensions
Depth:	15.4 in.
Width:	15.0 in.
Height:	27.8 in.
Weight:	50 lbs.

Environmental Conditions:

Unit in Operation
Temperature:	50°F to 105°F (10°C to 40°C)
Humidity:	5% to 95% RH
Heat emission:	<90W

Storage and Transport
Temperature:	-21°F to 130°F (-29°C to 54°C)
Humidity:	5% - 95% (Non-condensing)

Note: Resolution of the ScanX is dependent on operating mode and specific imaging plate type used.

Resolution Range (lp/mm):

Horizontal:	5.0
Vertical:	5.0

Compliance Data:

Laser Class:	Class I Laser Product (21 CFR 1040.10)
	Class 1 Laser Product (IEC 60825-1)
Laser Product Report	
Accession Number:	0212282-00

Installation Category: I

Pollution Degree: 2

User Replacement Items: Power Supply, Line Cord, PSPs
and Computer Connector Cable

Classification:
Class 1, Transportable, Continuous Operation,
Equipment not suitable for use in the presence of flammable anaesthetic mixture(s). Protection against ingress of liquids -Ordinary

Electromagnetic Interference:
Electromagnetic interference between the equipment and other devices can occur. Do not use the equipment in close conjunction with sensitive devices, or devices creating high electromagnetic disturbances.

Abbreviations used in this manual are summarized below.

A	ampere(s)	MB	megabytes ($2^{20} \approx 10^6$ bytes)
AC	alternating current		
CD-ROM	compact disk, read-only memory	mm	millimeter (10^{-3} m)
		MONTH YYYY	date (Month, 4 digit year)
CFR	Code of Federal Regulations	Phosphor	a luminescent material
CPU	central processing unit (your computer)	PN	part number
		PSP	phosphor storage plate (imaging plate)
cm	centimeter		
D	depth	RAM	random access memory
GB	gigabyte ($2^{30} \approx 10^9$ bytes)	RH	relative humidity
GHz	Gigahertz (10^9 of hertz)	SVGA	Super Video Graphics Array
H	height		
Hz	hertz (cycles per second)	USB	Universal Serial Bus
IEC	International Electro-technical Commission	UL	Underwriters Laboratories
IMS	Image Management Software [also referred to as Patient Management Software (PMS)]	V	volts
		W	Watts, width
		μm	micrometer (10^{-6}m)
		°C	degree Celsius
LED	Light emitting diode	°F	degree Fahrenheit
lbs.	pounds	", in	inch
lp/mm	line pairs per mm		
lux	a measure of light intensity		

Note: The ScanX is designed to be installed by your authorized dealer. The dealer or user must provide appropriate and compliant computer hardware and software.

The ScanX may be located almost anywhere in the office. Follow these guidelines for optimum performance:

❑ Lighting conditions: Set up the scanner in ordinary room light, however, direct sunlight and light fixture(s) above and near the ScanX producing more than 400 lux of light at the PSP inlet must be avoided.

❑ Provide a stable, flat countertop large enough to hold the scanner, plus provide a working area for resting and opening cassettes.

❑ Locate the computer within 6 feet.

❑ Access to a standard grounded electric Mains AC outlet using the line cord provided, must be within line cord length.

Note: Authorized Imaging Software supplied by the dealer or other company, must be installed on the computer in order to operate the ScanX.

ScanX Drivers and Utilities Installation

Before connecting the ScanX to your computer or attempting to use it for the first time, run the Setup program on the ScanX Drivers and Utilities Disk included with the ScanX. Normally, this program runs automatically when the CD is inserted into the drive for the first time. If not, run the Setup program located in the root directory of the CD (typically ***D:\Autorun.exe***).

The Setup program guides you through updating the library files on your computer, which must be completed before the ScanX will operate properly. More information can be found in the Installation Instructions and Notes file on the ScanX Drivers and Utilities Disk included with the ScanX.

ScanX Connection Procedure

Refer to Figure 1 and perform the following procedure to connect the ScanX for operation for the first time.

1. Select a location that meets the SITE SELECTION guidelines.

2. Set up the computer according to the manufacturer's recommendations. Make sure that the computer meets all requirements listed on page 10.

3. Verify that an authorized Imaging Software is installed properly on the computer.

4. Verify that the supplied ScanX Drivers and Utilities Disk which contains the USB drivers was properly installed per instructions above.

5. Connect the high speed USB cable between the USB Type B connector located on the ScanX rear panel and the USB Type A connector located on the computer.

Note: Connect the 24V Power Supply Adapter to the ScanX prior to plugging the line cord into the Mains outlet.

6. Connect the 24V Power Supply Adapter Output Connection Cable to the ScanX DC Power Input Jack.

7. Connect the line cord between the Mains outlet and the 24V Power Supply Adapter.

8. Switch the scanner from standby to ON by pressing the membrane READY switch (⏻) located on the Keypad Control Panel on the top of the scanner. Verify that both the green and blue LED indicators above the READY and ERASER switches illuminate.

9. With both the ScanX and computer turned on, Windows detects the ScanX as a new USB Device. Windows should automatically find the drivers installed from the ScanX Drivers and Utilities Disk.
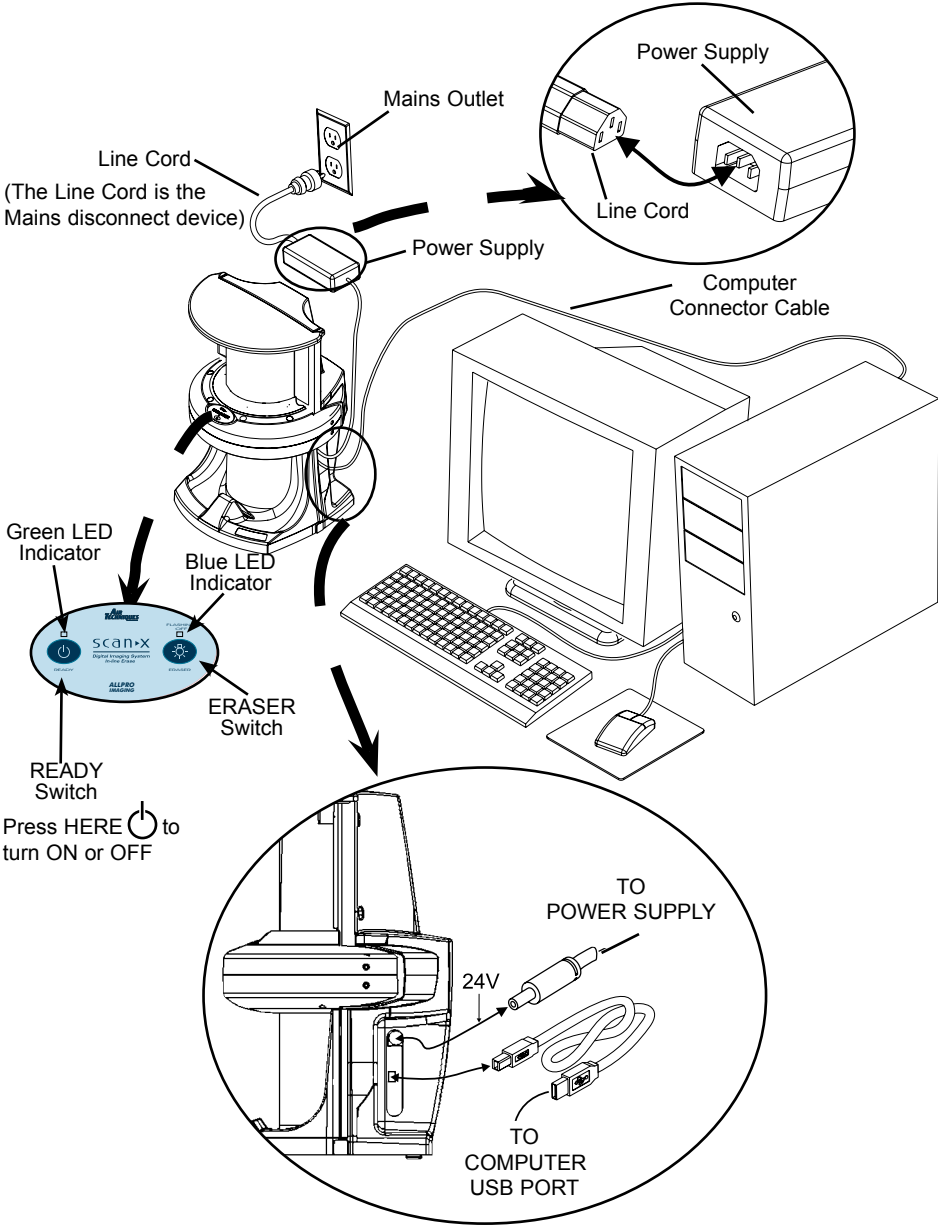
Power Supply

Mains Outlet

Line Cord
(The Line Cord is the
Mains disconnect device)

Line Cord

Power Supply

Computer
Connector Cable

Green LED
Indicator

Blue LED
Indicator

ERASER
Switch

READY
Switch

Press HERE ⏻ to
turn ON or OFF

TO
POWER SUPPLY

24V

TO
COMPUTER
USB PORT

Figure 1. Typical ScanX Installation

Prior to performing the imaging procedure provided on the following pages, the user must be familiar with the care, handling and preparation of the PSP in order to ensure successful image scanning. Figure 2 shows a typical plate.
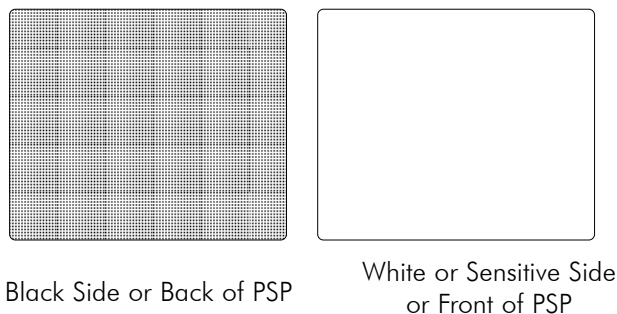

Black Side or Back of PSP

White or Sensitive Side
or Front of PSP

Figure 2. Typical Plate Configuration

Handle PSPs with Care.

- ❑ Avoid scratching or soiling PSPs.
- ❑ Do not bend PSPs or apply unnecessary pressure.
- ❑ Do not store PSPs in a hot or moist area.
- ❑ Protect the PSPs from direct sunlight and ultraviolet rays.
- ❑ Pick up the PSPs using two fingers around the edges to avoid unnecessary contact with the plates.

> **CAUTION:**   Use a Plate Protector for each plate.
>
> PSPs may be exposed in cassettes and scanned without Plate Protectors, however, greater care must be exercised to not expose the PSP to light before scanning and to prevent the PSP from being scratched or soiled.

Plate Protection

When storing or transferring PSPs use an X-ray Cassette for PSPs.

Plate Protector. A correct size Plate Protector should be used when handling PSPs so as not to scratch or soil the sensitive surface or nick the edges.

Note: Cassettes must <u>not</u> contain intensifying screens when using PSPs.

X-ray Cassette. Place the PSP with the Plate Protector into the appropriate X-ray Cassette with the sensitive (front) side of the PSP towards the Tube-side of the cassette and close cassette.

IMPORTANT: PSPs must always be erased prior to use.

Note: Use PSPs within 24 hours of last erasure. Repeat erasing process if PSPs have been stored longer than 24 hours.

Erase the PSP

Each PSP should be used (i.e. X-ray exposed and scanned) **within 24 hours** of erasure since natural radiation will add noise to the PSP. Erase PSPs by simply using the ScanX In-Line Erase Feature. This can be accomplished using one of two methods as follows:

Note: Both erasing methods will result in an erased PSP suitable for reuse. The user will not observe any difference in ScanX operation when using either method.

Method #1
Perform the Scanning and Erasing Plates procedures for PSPs on page 18. Except when performing step 4 of the Activate Scanner procedure, select the Erase option from the installed authorized imaging software to activate the ScanX. This method does **not** scan the plate and no image will be acquired.

Method #2.
Perform the Scanning and Erasing Plates procedures for PSPs on page 18. This method scans the plate and the imaging software may acquire a "junk image" (scanned latent plate image) that should be subsequently deleted from the imaging software.

IMPORTANT: Wipe the phosphor side of the plate **only** making sure not to scratch the plates.

Cleaning Phosphor Storage Plates

For the best images, PSPs should be handled carefully and kept clean. Use the following steps to clean plates:

1. Use lint-free, 100% cotton gauze (not cotton balls). Gently wipe the cotton gauze over the dry Plate surface. Wipe using an even side to side motion and then in a circular motion.
2. To clean any remaining stains wipe using an even side to side motion per one of the following options:
   Option 1 – Use Air Techniques PSP wipes (P/N B8910).
   Option 2 - 100% cotton gauze dampen with anhydrous ethanol or anhydrous isopropyl alcohol.
3. Completely dry the surface by wiping with another piece of lint-free cotton gauze. Make sure that the PSP is completely dry before use.

IMPORTANT: Do **not** soak overnight.

Disinfecting the Phosphor Storage Plates

There is no reason to routinely disinfect the PSPs unless contamination is suspected. If a PSP has touched a contaminated surface, it may be immersed briefly in a cold sterilant (such as a 2% Gluteraldehyde solution) according to sterilant manufacturers directions. Do not immerse the plate if there is any evidence of deep scratches in the surface of the plate or nicks in the edges of the plate. After disinfection, clean and dry the plate using the instructions above.

Disposal of Phosphor Storage Plates

Consult with your federal, national, state and local government, for rules and regulations on disposal of Phosphor Storage Plates.

Note: Cassettes must **not** contain intensifying screens when using PSPs.

Take an X-Ray Image

Put an image on the PSP by performing the following procedure.

1. Load cassette containing an erased PSP in a Plate Protector into the exposure device as previously done with film.
2. Take the exposure using either the same settings used for film if previously "green" film was used or with about half the exposure if "blue" film was used with intensifying screens.
3. Bring the closed cassette housing the X-ray exposed PSP containing the latent image to the ScanX. The PSP is now ready to be scanned.

Activate Scanner

Activate the ScanX by performing the following procedures.

1. Make sure the ScanX and computer components are correctly connected as shown in Figure 1.
2. Switch the scanner from standby to ON by pressing the membrane READY switch (⏻) located on the Keypad Control Panel on the top of the scanner.
3. Verify that both the green and blue LED indicators above the READY and ERASER switches illuminate. (Default has eraser mode enabled)

Note: Change in motor noise pitch levels is normal when switching to different resolution setting selections.

4. Use the user-supplied authorized Imaging Software to activate the Scanner and to select the desired image type and resolution.
5. Verify that the four Scanner Track indicators illuminate green when the Scanner has been activated, indicating that a PSP can be fed into the ScanX.

Note: Only one exposed PSP can be fed into the ScanX at a time. The next PSP may be fed only after all four track indicator light LEDs change from yellow to green.

Scanning and Erasing Plates

Scan and erase an PSP in one operation by performing the following procedures.

1. Orient the cassette so that the Tube side is facing down and the hinge is away from you.
2. Open the cassette and grasp the Plate Protector guide flaps to lift out the Plate Protector enclosed PSP. Pinch guide flaps between the thumb and index finger to prevent the PSP from sliding out of the Plate Protector. While minimizing exposure to ambient light, move it to the ScanX inlet with the sensitive (front) side of PSP towards the ScanX.
3. As shown by Figure 3, View A, position the Plate Protector containing the PSP against the curved inlet, surface and hold it flush against the scanner inlet. A Plate Protector containing an exposed PSP narrower than 12 inches may be centered on the scanner inlet, making sure that it is aligned.
4. Gently slide the PSP and Protector assembly into the scanning slot until the Protector is stopped by both guide flaps resting on the inlet ring as shown by Figure 3, View B, which further aids in alignment.
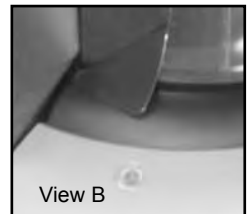

View A

View B

Figure 3.
Feeding a Plate

Scanning and Erasing Plates (continued)

5. At this point, all four Scanner Track indicators will turn yellow, indicating the PSP has been sensed and the Scanner is transporting the PSP.
6. Observe that a red glow eminates from the scanner exit slot.
7. Repeat steps 1 through 6 to process additional PSPs as necessary. Another PSP may be fed into the ScanX when all four track indicator lights illuminate green.
8. Observe that the scanned PSP exits through the scanner arch. Since the ScanX default operation mode is with the erase mode enabled (blue LED indicator above the ERASER switch is illuminated), the PSP is erased and ready for reuse for a new image.
9. Observe that all transport indicators illuminate green and the red glow from the exit slot extinguishes after the last PSP drops to the tray.
10. Retrieve the processed (scanned and erased) PSP for reuse or storage. Make sure not to scratch the sensitive surface or nick the edges when removing from the scanner outlet.
11. View and save the image using features of the user-supplied authorized Imaging Software.

> **IMPORTANT:** PSPs will **not** be erased after scanning when operating the ScanX with the eraser disabled. PSPs must always be erased prior to exposure to X-rays.

Scanning Plates without Erasing

The ScanX can be operated with the in-line erase feature turned off. When the eraser mode is disabled, the ScanX scans the same as when the eraser is enabled except that the PSPs are **not** erased after scanning. Scan an PSP without erasing the image by performing the following procedures.

1. Activate the scanner by performing the procedures on previous page.

> **Note:** Upon activation, the ScanX defaults with the eraser mode enabled. This must be disabled prior to scanning to prevent erasing of the scanned PSP.

2. Disable the erase mode of operation by pressing the membrane ERASER switch located on the Keypad Control Panel.
3. Verify that the blue LED indicator above the ERASER switch blinks blue to indicate that the Erase function is OFF. The PSP will **not** be erased after scanning.
4. Insert the exposed PSP to be scanned into the ScanX by performing the Scanning and Erasing Plates procedures provided on the previous page.
5. Retrieve the processed (***scanned only***) PSP and store in an X-ray cassatte. The scanned PSPs still contain latent images that require erasure. Make sure to erase each PSP prior to reuse for new images.

Erase Only Mode

The ScanX can be used to just erase PSPs. This is done simply by selecting the **Erase** option (instead of Scan) from the installed authorized imaging software when activating the ScanX. During the Erase Only mode just the in-line eraser is activated. The PSP is transported through the ScanX as a normal scan but is **not** scanned. No image is acquired and the PSP is erased and ready for reuse as necessary. See Erasing PSPs on page 17.

POWERING DOWN THE SYSTEM

> **IMPORTANT:**   Never power down the system during a scanning session.

The ScanX is designed to be left on continuously during the active day. At the end of the day, or whenever desired, power down the system simply by pressing and holding the membrane READY switch ⏻ on the Keypad Control Panel for approximately two seconds, until the green LED above the READY switch extinguishes.

MAINTENANCE

Maintenance Procedures

The ScanX is designed for many years of trouble-free operation. Maintenance as described herein is minimal.

> **IMPORTANT:**   Do **not** spray solvents or liquid directly on the scanner.

Cleaning the ScanX

Turn off the ScanX disconnect the line cord from the Mains wall outlet and disconnect the computer connection cable from the ScanX before cleaning. Wipe the outside surfaces with a soft paper towel dampened with a disinfectant solution or non-abrasive household cleaner. Be careful not to allow solvents TO RUN OR DRIP into the ScanX. This could cause damage to the ScanX. Allow to air dry before plugging in or turning back on.

Cleaning the Plate Transport

Over time, small debris and dust can accumulate in the plate transport mechanism causing a loss in image quality and possible damage to the PSPs.

To ensure optimal performance of the ScanX, the plate transport should be cleaned once per week using a new ScanX Cleaning Sheet each time. Sample sheets are included with the ScanX and additional sheets can be purchased from your dealer. Refer to ACCESSORIES page 24.

Disinfecting the ScanX

No disinfection is required for the ScanX.

Phosphor Storage Plates (PSPs).

PSP's are subject to "wear" on the black side during normal handling and use. They can appear scratched, while the "white" or sensitive side remains relatively "smooth". This scratched look on the black side has absolutely no effect on the quality of the image and should be expected under normal conditions. If the phosphor side is scratched make sure the plates are being handled properly and not being dragged from the ScanX tray area or other surfaces that could cause scratching of the plate. Make sure to review the Plate Care and Preparation information provided on page 16 of this manual.

Like all precision products, the ScanX requires a certain amount of care on a regularly scheduled basis. A well-organized maintenance program aids dependable equipment operation and reduces problems to a minimum. Routine checks help to detect general overall wear, and replacement of parts can often be made before a problem occurs. Adherence to the maintenance schedule will ensure that the ScanX Digital Imaging System will continue performing at its best with uninterrupted service.

Understanding this, we have established two basic maintenance kits that will help insure continuous operation of the ScanX Digital Imaging System. The kits and their associated parts number along with the recommended performance schedule are listed below.

IMPORTANT: All service requiring access to the interior of the ScanX must be performed only by an authorized dealer service technician with the proper training.

Service Requirement	Schedule	Kit Part No.
Replace transport drive belts and springs	2 years	B7920
Replace complete transport belt drive belt assembly	4 years	B7434

	Trouble	Possible Cause	Corrective Action
1.	No power/ No green light on membrane switch	• Not plugged in. • No power at Mains Outlet • Defective power supply	• Check the line cord connection is firmly plugged in. • Make sure outlet is grounded and has power. • Call your authorized ALLPRO dealer.
2.	Green, Blue or Yellow indicator does not work.	• Defective light or circuitry.	• Call your authorized ALLPRO dealer.
3.	Image Management Software does not recognize the ScanX when selected.	• Inadequate Computer System. • The ScanX has not been turned on. • The computer connection cable is loose or defective. • The computer does not recognize that the ScanX is connected. • ScanX hardware problem.	• Verify Computer System requirements (Page 10). • Make sure that the READY switch is set to ON and the green indicator light is illuminated. • Reconnect the cable. Check for tightness. Replace if necessary. • Verify that the Setup program was correctly installed (Page 14). • Call your authorized ALLPRO dealer.
4.	Plate does not scan properly.	• The PSP was not pushed far enough into the ScanX.	• Fully feed the PSP into the Inlet Ring.
5.	No image appears after scanning. **Note:** There should be an image on the plate only if the in-line eraser mode **was disabled** during scanning. **Important:** Do not allow the PSP to be exposed to light between taking an X-ray and scanning with the ScanX.	• The PSP fed backwards (printed side towards ScanX). • The PSP was erased prior to scanning. • Hardware failure. • X-ray source failed.	• If Eraser mode **was disabled** during scanning, quickly refeed the plate with the printed side out. If Eraser mode **was enabled** during scanning, retake image. • • Feed the PSPs into the scanner immediately and quickly after removal from the Plate Transfer Box or the cassette. • Call your authorized ALLPRO dealer. • Call your X-ray service dealer.

	Trouble	Possible Cause	Corrective Action
6.	Image is too dark.	• PSP has been overexposed	• Use software to adjust brightness. If this is not possible, retake image with proper (lower) exposure and a newly erased PSP.
7	Image appears skewed on monitor.	• PSP was fed skewed either behind or without a Plate Guide in place. • Plate Guide used was not the proper size.	• Verify that Plate Guide is in place and PSP is fed into slot or if a Size 4 PSP, it is fed in straight behind a Guide. • Check PSP size and ensure that the correct Plate Guide is in place.
8	Image contains ghost images or shadows.	• PSP was not completely erased prior to use. • Imaging Plate was exposed with the back of the IP facing the tubehead. • PSP has been stored too long in barrier envelope or cassette. • Partial erasure of the image due to exposure to light during handling of the PSP.	• Make sure ScanX is operating with eraser turned on (blue LED indicator above the ERASER switch is illuminated steadily). • Make sure the plates are inserted properly into the barrier envelope or cassette with the proper orientation to the X-ray source. • Do not store PSPs in barrier envelopes or cassettes for more than 24 hours. • Do not leave exposed PSPs in well lit areas. Even in barrier envelopes, some light may penetrate and partially erase the PSP. Transfer PSPs from their protective barriers to the ScanX within one hour of exposure.
9	Image shows artifacts.	• The PSP surface is not clean and has dirt, stains or scratches on it. • ScanX plate transport path may contain debris.	• Clean the PSP. If the PSP is scratched or stained, do not reuse. • Clean transport path using a ScanX Cleaning Sheet.

ACCESSORIES

The following lists the ordering number and description for accessory components available to maintain the ScanX to meet your professional needs. Contact your authorized dealer for information.

Description	Quantity	Part Number
ScanX Cleaning Sheets*	Box of 12	B2010
	Box of 25	B2020
ScanX PSP Wipes	Box of 25	B8910
ScanX Dust Cover Kit	1	74050
Line Cord	1	73096
24 V Power Supply Adapter	1	B7095
6-Foot Computer Connector Cable, USB	1	B3554
15-Foot Computer Connector Cable, USB	1	B5026
Medical Phosphor Storage Plates		
8 x 10 inches	1 per package	73578-8M
10 x 12 inches	1 per package	73578-10
Plate Protectors		
8 x 10 inches	1 per package	B2160-8M
10 x 12 inches	1 per package	B2160-10
Cassettes		
8 x 10 inches	1 per package	74190-8
10 x 12 inches	1 per package	74190-10

*   One re-usable Release Liner is included in each box of ScanX Cleaning Sheets.

WARRANTY EXTENSION

Extended ScanX Swap Warranties providing for an additional 1 and 2 Year period are available for purchase. Please contact ALLPRO Imaging for details.

NOTES

ALLPRO Imaging is a leading manufacturer of imaging systems for the medical, veterinary and security markets. Thousands of ALLPRO Imaging products have been sold globally, installed and serviced through our network of authorized dealers.

- ❏ 100 Plus
- ❏ 2010
- ❏ Polaris™
- ❏ ScanX® 12
- ❏ ScanX® 12 DVM
- ❏ ScanX® Discover
- ❏ ScanX® Duo
- ❏ ScanX® Fit
- ❏ ScanX® Quantum
- ❏ ScanX® Scout
- ❏ ScanX® Trek
- ❏ Visix™

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