VAMC PORTLAND, OR
PO# 648-B31006

**RADREX-I CEILING-SUSPENDED DIGITAL RADIOGRAPHY
SYSTEM 80 KW WITH ONE STATIONARY 17X17" DR PANEL
AND ONE WIRELESS 14X17" DR PANEL**

RADREX-i mixed-detector radiographic system is engineered to improve
productivity and workflow, and provide value beyond any other system in
its class.

The integrated components make program set-up and patient positioning
easier with features that automate patient data entry, detector tracking and
image processing. In addition, the superior processing power for optimized
images reduces post processing after an exposure and saves time during an
examination.

High-productivity features are standard in the system. Patient care is
improved with the tube-side access to examination controls and the in-room
image display allows point-of-care decision making. And bariatric exams are
made easy with a 600 lb. table weight limit, 600 kHU X-ray tube and 80kW
generator all standard.

In short, RADREX-i does everything more economically with an
unprecedented ease-of-use for both patients and technologists.

- Integrated control console
- 80 kW/150 kVp radiographic generator
- 600,000 HU X-ray tube
- Motor-driven elevating table
- Automatic exposure control
- Automatic/manual collimator
- 14"x17" wireless digital image receptor for table
- 17"x17" digital image receptor for wall stand
- Ionization chambers for wall stand and radiographic table
- Ceiling-suspended tube support
- Tilting vertical bucky wall stand
- High voltage cables
- PDU (Power Distribution Unit)

KEY FEATURES

RexSpeed Productivity Features
Automation comes standard with RADREX-i including the following RexSpeed features:
- Auto-Mapping — selects the Anatomic Program Control (APC) for each specific X-ray procedure, to ensure optimal image quality to help minimize repeats.
- Auto-Center Stop - provides visual guidance for quick and easy detector centering
- Auto-collimation — automatically selects the correct collimation size for the programmed field of view, saving crucial time for the patient and technologist.
- Auto-Tracking — eliminates the need to manually position the X-ray tube and detector by providing synchronization for table and wall stand tracking.
- Auto-Park — raises the X-ray tube after the exam with a single touch, giving the patient room to safely sit or stand following the procedure.
- Auto-field detection – automatically centers the image on the monitor, allowing for off-center exposures on the detector.

Control Console

Integrated workstation provides patient entry, generator controls, post-processing and documentation into a single point-of-contact. The easy-to-use intuitive user interface helps streamline workflow and accelerate throughput.

Overhead Tube Crane

Highly flexible OTC is capable of almost any angle, pivot and swivel combination for positioning freedom. The OTC provides tube-side access to examination controls, allowing point-of-care decision making to improve patient care.

- All free grip for maximum maneuverability
- Increased range of travel
- RexView - Color LCD touch panel
    - Patient information display
    - Access to generator programs
    - Image Preview
    - Send images to PACS
    - Rotating display mechanism
- In-room image display – increases productivity and promotes improved patient care

Digital Acquisition

RADREX-i provides filmless radiography with state-of-the art, flat-panel, digital detectors that provide excellent detailed radiographic images for optimized patient care. Combined with various image-processing functions and an expansive dynamic range, RADREX-i delivers high-image resolution for greater diagnostic confidence.

Image Enhancement

RADREX-i Digital Radiographic System nearly eliminates retakes due to a host of image-quality enhancements that can be programmed into individual APC programs to help increase productivity and ensure superior image quality.

- Display enhancement processing adjusts contrast density areas of an image
- Digital compensation filter provides enhanced contrast in under-penetrated or over-penetrated areas
- f-Processing provides soft tissue and bone visualization
- Auto field detection locates collimated edges of image for automatic electronic shutter placement
- Image sharpening brings out more visible detail
- Grayscale transformation ensures high-quality data
- Automatic adjustment of image size to the collimated area

SPECIFICATIONS

Integrated Control Console

- Windows XP Professional with single Pentium IV 2.6 GHz
- 80 GB x 2 IDE hard drive
- Storage capacity of 5,000 images
- 19" LCD color flat-panel screen monitor
- Image preview available in less than 3 seconds
- Multiple operator function capabilities
- DICOM 3.0 compatible (send, print, storage class)
- DICOM MWM and MPPS
- DICOM RDSR
- Includes: Battery Charger for REXPanel
- Includes: 3 Batteries for Charger
- Reject reporting software
- Manual Stitching Software
- Optional : Auto-Stitching Software
- 2 Ethernet interfaces (10/100 Base-T, 1000 Base-T)

80 kW / 150 kVp Radiographic Generator

- High-frequency power (Inverter)
- 80 kW output
- mA range: 10 to 1000
- kVp range: 40 to 150 kVp, 1 kVp steps
- mAs range: 0.5 - 600
- Timer range: 1 msec – 9 seconds
- Anatomical Programmed Radiography (APR), 10,000 views
- Automatic APR selection with RIS information
- Integrated control console used for APR and technique information; includes date/time feature
- Integrated diagnostic functions to improve system up-time
- High-speed starter

X-Ray tube

- Focal spot: 0.6/1.2mm
- Anode angle: 12 degrees
- Anode heat capacity: 420 kJ (600,000 HU)
- Heat dissipation: 1750 W (2465 HU/sec)
- Anode speed: 9700 RPM
- Anode diameter: 100mm

Elevator Bucky Table

- Designed to accommodate the 14"x17" wireless detector in the portrait or landscape mode
- Patient weight limit 600 lbs.
- 4-way floating table top
- Motorized elevating range: 20" – 37.4"
- Tabletop dimensions: 32.2"x93.7"
- Table longitudinal movement: 31.4"
- Table transverse movement: 9.4"
- Detector travel: 21"
- 110 cm focusing distance
- 78 lines/cm grid density with 10:1 grid ratio
- Tabletop filtration: <0.6 mm AL

REXPanel 14"x17" Wireless Detector
- 14"x17" imaging sensor panel
- Amorphous silicon (a-Si) sensor technology
- Cesium Iodide (CsI) scintillator
- 35x42 cm active area
- High-precision, 7.75 million-pixel resolution
- Pixel pitch: 139 μm
- Grayscale: 65,536 grayscale (16 bits)
- Weighs 3.5 kg (7.7 lbs) with battery
- Detachable Tether cable included

Ceiling-Suspended Tube Support
- Vertical tracking to maintain SID when table is raised or lowered
- Vertical tracking to maintain horizontal alignment when wallstand is raised or lowered
- Auto-Park key drives the overhead tube into its highest vertical positioning to facilitate easy patient transfer on/off the table
- Longitudinal movement: 445 cm (175")
- Lateral movement: 230 cm (90.5")
- Vertical movement: 150 cm (59")
- Minimum focal spot-to-floor distance: 42 cm (16.5")
- Tube rotation
- Vertical axis: ±180 degrees; detents 0, ±90 degrees
- Horizontal axis: ±180 degrees; detents 0, ±90 degrees

Automatic Collimator
- Collimator with light
- Automatic shutter control with manual override
- Rectangular blades
- Additional independent collimator blade for offset collimation
- Beam-hardening filter to help reduce soft radiation
- Pre-formatted sizing
- Field-of-view is automatically set from APC selection
- Detector centering indicated by shadow crosshair
- Bucky tray centering indicated by laser light
- Swivel mount enabling ±45 degrees

Vertical Tilting Wallstand
- Patient name and ID display
- Center column mount
- Motorized vertical detector tracking
- Three rectangular ion chambers
- Tilting range from -20 to 90 degrees
- Tilt angle indicator
- Vertical travel: 50"
- Foot Switch for motorized height adjustment
- Hand Switch for manual height adjustment
- 150 cm focusing distance
- 78 lines/ cm grid density with 10:1 grid ratio
- Patient Hand Grips and Lateral Support Bar
- Includes Wall Stand Operating Control Box
    - Enhances patient safety
    - Can be mounted on the left or right side
    - Provides pre-set collimation settings
        - 8"x10"to 17"x17"
        - Portrait or Landscape
    - Allows manual collimation
    - Independent collimator for fine beam tuning
    - Off-set collimation (high, med, and low)
    - Collimator light control

17"x17" Digital Image Receptor for Wall Stand
- 17"x17" imaging sensor panel
- Amorphous silicon (a-Si) sensor technology
- Cesium Iodide (CsI) Scintillator
- 43x43 cm active area
- High-precision, 9-million-pixel resolution
- Pixel pitch: 139 μm
- Grayscale: 16,387 grayscale (14 bits)
- Includes mounting hardware
- No active cooling required

X-ray Tube Warranty
All X-ray tubes carry a 12-month, non-prorated warranty.
- Initial 12 months – free replacement
- If a tube fails within the first 12 months, it will be replaced at no cost to the customer
- The replacement tube will carry the free replacement warranty for the remainder of the 12 months from the time of the first installation.

APPLICATIONS SUPPORT
Two-phase, on-site training session is included with purchase of the system:

Pre-requisite: Toshiba eLearning
- Digital Imaging Principles CBT located on the Toshiba Learning Center Website.

Phase One: Initial On-Site Training
- 32 hours of training for up to four technologists following installation.
- Includes generator setup, complete overview of system operation and technique review.
- Imaging of patients to evaluate image quality.
- This training is scheduled in advance.

Phase Two: Second On-Site Training
- 16 hours of follow-up training for up to four technologists.
- This training is scheduled in advance, four-to-eight weeks after the initial training.
- Follow-up visit must take place within 6 months of the initial turnover.

Additional On-Site Training:
Additional On-site training available for purchase.

Applications support is available by phone on the toll-free ASSIST line.

RADREX-I CEILING-SUSPENDED 80 KW MIXED DETECTOR DIGITAL RADIOGRAPHY SYSTEM -- WITH STANDARD OTC RAILS

REJECT ANALYSIS SOFTWARE

A quality assurance tool that allows images to be captured and categorized by technologist for follow-up quality review. The reject report can be exported to the network shared folder of this device as a MHT file.
- Captures reasons for rejection
- Reports percentage of accepted and rejected images
- Fields and date ranges are set by administrator
- Rejected image is associated with reject list

19" LCD MONITOR WITH TOUCH PANEL

VBS HAND GRIP FOR LATERAL RADIOGRAPHY

Hand grip bar mounted on the vertical bucky stand, used for stabilizing patients for lateral chest radiography.

UPS KIT FOR RADREX-I CONSOLE

UPS FOR RADREX-I CONSOLE

CABLE,UPS

RADREX INSTALLATION KIT

Provides nuts, bolts, drill bits and other miscellaneous materials to help ensure a smooth installation.

SIMPLE STYLE COMPRESSION BAND

- Attaches to the table rails
- Adjustable Velcro straps for securing patient

POWER DISTRIBUTION UNIT FOR RADREX-I

This PDU-RADREX provides most of the electrical site preparation requirements of Toshiba RADREX-i system, including:

<u>Voltage Conversion</u>
Facility wiring costs are significantly reduced since the PDU-RADREX accepts a single, 480V DELTA or WYE 3 phase input 3 and distributes both the required 208V single phase for the Digital Image Processor and 480V 3 phase required for the RADREX-i generator and the remainder of the RADREX-i components.

<u>Distribution</u>
The PDU-RADREX comes prepackaged with input and output distribution breakers needed for each system feed. Having all system breakers in one location also makes it easier for service personnel or the customer to remove appropriate AC power when needed.

<u>Planning</u>
Planning is simplified by having all these components and functions delivered in a single box.

<u>Installation</u>
Installation is much faster, more predictable, and less expensive with a factory-assembled and tested system.

<u>Approvals</u>
UL listing will reduce time and uncertainties obtaining local electrical inspection approvals.

<u>Reduced Site Preparation Costs</u>
The PDU-RADREX comes equipped with an input shunt-trip circuit breaker, eliminating, in most cases, the need for a room breaker.

AUTO-STITCHING AND PATIENT SUPPORT STAND

Stitching package includes auto-acquisition and software that allows stitching of 2 to 3 images for long leg and spine imaging. The patient stand that keeps patient isolated from moving detector is included with this package.

The stitching software provides two methods of stitching:
- Fixed Tube – utilizes offset collimation with 2-step moving detector
- Stepping Tube – synchronized movements of tube and detector

PATIENT SUPPORT STAND

AUTO-STITCHING

PIANO SWITCH FOR ELEVATING BUCKY TABLE

Second integrated footswitch that allows 4-way table panning and vertical table height adjustments.

Note: Only one additional table switch option per table.

LATERAL CASSETTE HOLDER FOR REXPANEL

Table mount Lateral Cassette Holder for REXPanel.

TETHER CABLE

RADREX-I DOSE METER KIT (DIAMENTOR K1S)

- Displays exposure dose (mGy) for each radiographic exposure
- Displays the total exposure dose for the examination

DOSE METER CONTROLLER

- Displays exposure dose (mGy) for each radiographic exposure
- Displays the total exposure dose for the examination

DIAMENTOR CHAMBER

CABLE FOR DIAMENTOR CHAMBER

POWER SUPPLY, 110-240 VAC/24 VDC, 1.5 A

CABLE,RS232

LONG AXIS 8:1 GRID CAP KIT FOR REXPANEL

Long Axis 8:1 Grid Cap for REXPanel
- Protect-a-Grid encasement with handle
- 14x17 8:1/215/40-72 Grid

REXPANEL PROTECT-A-GRID DRP ENCASEMENT WITH HANDLE - LONG AXIS

14X17 8:1/215/40-72 GRID

SHORT AXIS 8:1 GRID CAP KIT FOR REXPANEL

Short Axis 8:1 Grid Cap for REXPanel
- Protect-a-Grid encasement with handle
- 14x17 8:1/215/40-72 Short Dimension

REXPANEL PROTECT-A-GRID DRP ENCASEMENT WITH HANDLE - LONG AXIS

14X17 8:1/215/40-72 SHORT DIMENSION

GRID CAP FOR WIRELESS DETECTOR

Snap-on Grid for REXPanel
- 10:1 Grid ratio
- 78 Lp/cm
- 150 cm focus

TABLETOP PROTECTIVE MAT

RATCHET STYLE COMPRESSION BAND

- Attaches to the table rails
- Adjustable ratchet for securing patient

DICOM STORAGE COMMITMENT

Confirms completion of transfer / achieve.

REXPANEL HOLDER WITH HANDLE

The REXPanel holder allows the radiographer to easily carry the wireless detector during examinations reducing the risk of accidentally dropping the panel. An economical insurance policy for your investment.
- Light and easy to use
- Sturdy construction
- Handle on long axis
- Easy to use spring loaded slot
- Smooth non-porous surface

PROTECTOR FOR DRX-1 PANEL

Provides additional protection for weight bearing X-rays of the feet
- Supports patients up to 500 lbs
- Faceplate is radiolucent for excellent image contrast
- For use with the DRX-1 wireless portable detector
- Easy to clean non-porous polyethylene, polycarbonate and stainless steel construction

**BIOMED TRAINING - TUITION, TRAVEL AND LODGING
- RADREX (5 CLASS DAYS) (Qty 5)**

This course is designed for Biomeds who have some experience with X-Ray, for example a CT class or on-the-job experience, and have completed the X-Ray Basics prerequisite.

The RADRex course covers a DRAD-3000A system. The course includes system operation familiarity, review of system installation procedures, actual (hands-on) configuration, and calibration of the TFD-3000A digital processor, SYS-3000A interface, DST-3000A overhead tube support, BLR-3000A auto-collimator, and KXO-80S generator.

Prerequisite
- X-Ray Basics (RF103)

As part of the final testing at the end of the course, all students will participate in a practical hands-on final exam that will test their ability to service, adjust, test and/or repair the system.

Students must bring notebook computers equipped with Pentium-class CPUs, 1GB or more of available hard disk space, Windows 98, 2000 or XP, Office 97 or later, CD-ROM drive, serial port RS232, and network connectivity. Laptops are not available to borrow or rent during class. Virus Scanning: Laptops used at the Center must have the latest virus scanning software and update definitions before being permitted to connect into the TAMS Training network. All laptops will be checked on the first day of class.