Quantum
MEDICAL IMAGING, LLC
Division of Carestream

Models QT-710 & QT-720 Series

Mobile/Fixed Non-Float-Top Open-Base Radiographic Table

Installation and Operation Manual

Manual Part No. DC30-004 Revision F

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Revision History

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GENERAL SAFETY INFORMATION

Quantum products are designed to meet stringent safety standards. All medical electrical equipment requires proper installation, operation, and maintenance (particularly with regard to safety).

It is vital that the user read, understand, note, and where applicable, strictly observe all Warnings, Cautions, Notes and Safety markings within this document and on the equipment, and that the user strictly follow all safety directions in this manual to help ensure the safety of users and patients.

Every reasonable precaution has been taken during manufacture to safeguard the health and safety of persons who will operate this equipment. The following precautions must be observed at all times.

WARNINGS, CAUTIONS, NOTES

The following samples show how warnings, cautions, and notes appear in this document. The text explains their intended use.

WARNING Indicates injury or death is possible if the instructions are not obeyed. Instructs users to refer to documentation if displayed without warning text.

CAUTION Indicates that damage to equipment is possible if the instructions are not obeyed.

NOTE Notes provide advice and highlight unusual points. A note is not intended as an instruction.

The purpose of safety icons, such as those shown below, is to indicate at a glance the type of caution, warning or danger.

WARNING Ionizing radiation: indicates the possibility of increased levels of radiation.

WARNING Dangerous voltage: indicates the presence of high voltage.

WARNING Warning, hot surface.

Safety Notices

WARNING

Quantum Medical Imaging, LLC disclaims all responsibility from any injury resulting from improper application of this equipment.

This equipment is sold to be used exclusively under the prescribed direction of a person who is licensed by law to operate equipment of this nature. This equipment must be used in accordance with all safety procedures described in this manual and must not be used for purposes other than those described herein. In the United States, Federal law restricts this device to sale, distribution, and use by or on order of a licensed physician.

Quantum Medical Imaging, LLC cannot assume responsibility for any malfunctioning of this equipment resulting from improper operation, maintenance, or repair, or from damage or modification of its components.

Failure to observe these warnings may cause serious injuries.

WARNING

X-rays are hazardous to both patient and operator unless established safe exposure factors and operating instructions are observed.

Only qualified and authorized personnel shall operate this system. In this context, qualified means those legally permitted to operate this equipment in the jurisdiction in which the equipment is being used, and authorized means those authorized by the authority controlling the use of the equipment. Full use must be made of all radiation protection features, devices, systems, procedures and accessories.

It is important that everyone having anything to do with x-radiation be properly trained and fully acquainted with the recommendations of the National Council on Radiation Protection and Measurements as published in NCRP Reports available from NCRP Publications, 7910 Woodmont Avenue, Suite 800, Bethesda, Maryland 20814-3095 (www.ncrp.com), and of the International Commission on Radiological Protection (www.icrp.org), and take adequate steps to protect against injury.

WARNING

X-ray equipment may cause injury if used improperly. The instructions contained in this manual must be read and followed when operating this unit. Personal radiation monitoring and protective devices are available. You are urged to use them to protect against unnecessary X-ray exposure.

REGULATORY COMPLIANCE

This certified Quantum Medical Imaging, LLC medical device has been designed, manufactured, and calibrated to comply with governing Federal Regulations 21 CFR Subchapter J and the performance standards attendant thereto. Upon installation, all certified products require the filing of Form FD-2579 "Report of Assembly of a Diagnostic X-ray System" by the assembler (i.e., the installer) with the appropriate agencies; the "Installation Quality Assurance Checklist" must also be completed and properly distributed upon installation. A copy of each form (pink copy) is provided to the user. The installation report is completed by the installer and returned to Quantum Medical Imaging, LLC.

Those responsible for the planning of X-ray equipment installations must be thoroughly familiar and comply completely with NCRP Report No. 49, "Structural Shielding Design and Evaluation for Medical Use of X-rays and Gamma Rays of Energies up to 10 MeV", as revised or replaced in the future. Those authorized to operate, test, participate in or supervise the operation of the equipment must be thoroughly familiar and comply completely with the currently established safe exposure factors and procedures described in publications such as Subchapter J of Title 21 of the Code of Federal Regulations, "Diagnostic X-ray Systems and Their Major Components," and NCRP Report No. 102, “Medical X-ray, Electron Beam and Gamma Ray Protection for Energies Up to 50 MeV—Equipment Design and Use” as revised or replaced in the future.

This equipment must only be used in rooms that comply with all applicable laws or regulations that have the force of law, concerning electrical safety for this type of equipment.

Scheduled maintenance is essential to the assurance of continued integrity of this equipment with respect to regulatory compliance. The continuance of certified performance to the regulatory standard is incumbent upon the user's diligent conformance to recommended maintenance instructions. Do not use this equipment until you are sure that the planned maintenance program is up to date.

CLASSIFICATION

This product has been classified as Class I by Underwriters Laboratories, Inc. Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or with nitrous oxide. Protection against Harmful Ingress of Water (Ordinary), enclosed equipment without protection against ingress of liquids.

MEDICAL ELECTRICAL EQUIPMENT
WITH RESPECT TO ELECTRIC SHOCK, FIRE,
MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH UL 60601-1 AND
CAN/CSA C22.2 NO. 601.1
98UA

The following symbols may be used for marking on this equipment or equipment documentation:

Non-ionizing radiation

Attention, consult accompanying documents

COMPATIBILITY

The equipment described in this manual must only be used in combination with other equipment or components if these are expressly recognized by Quantum Medical Imaging, LLC as compatible.

INTENDED OPERATOR

This equipment is intended to be installed, used and operated only in accordance with the safety procedures given within this manual for the purpose for which it was designed. Before attempting to work with this equipment, read, understand, note and strictly observe all warnings, cautions and safety markings on the equipment.

Users include those persons who actually handle the equipment and those who have authority over the equipment.

TRAINING

Users of this equipment shall have received adequate training on its safe and effective use before attempting to work with the equipment. Training requirements may vary from country to country. The User shall make sure that training is received in accordance with local laws or regulations that have the force of law.

DOCUMENTATION

The user documentation for this device is contained in this manual, and it shall be kept with the system for easy reference.

APPLICABLE STANDARDS

This equipment complies with the following regulatory standards:

- FDA Center for Devices and Radiological Health (CDRH) - Title 21 CFR Subchapter J
- EN 60601-1: 1990 + A1:1993 + A2:1995 + A13:1996
- IEC 60601-2-32: 1994(E)
- CAN/CSA-C22.2 No. 601.1-M90, 2005 (Medical Electrical Equipment, part 1: General Requirements for Safety)
- UL 60601-1, 1st Edition, 2006-04-26 (Medical Electrical Equipment, part 1: General Requirements for Safety)
- IEC 60601-1 Medical electrical equipment, Part 1: General requirements for safety
- IEC 60601-1-2: 2007
- EC Directive 93/42/EEC for Medical Devices

EU Authorized Representative:

EC REP

Carestream Health France
1, rue Galilée
93192 NOISY-LE-GRAND CEDEX
France

ENVIRONMENTAL PROTECTION

This equipment contains certain materials and chemical compounds incidental to the manufacture of electrical and electronic equipment, and improper "end-of-life" disposal of such equipment can result in environmental contamination. Therefore, this equipment should not be disposed of as ordinary household waste, but should instead be delivered to a designated electrical and electronic waste disposal or recycling center. For further information on disposing of electrical and electronic waste, contact the cognizant authority within the jurisdiction.

ELECTROMAGNETIC COMPATIBILITY (EN 60601-1-2:2007/IEC 60601-1-2:2007)

The Model QT-710 & QT-720 Series, Mobile/Fixed, Non-Float-Top, Open-Base Radiographic Table (hereinafter know as the Radiographic Table) is intended for use in the electromagnetic environment specified below. As such, the Radiographic Table must be installed and put into service according to the information provided in the accompanying Service Manual.

Portable and mobile RF communications equipment can affect medical electrical equipment. It is therefore recommended that the operation of equipment of this type, such as mobile telephones, cordless microphones and other similar mobile radio equipment, be restricted from the vicinity of this device.

Use of accessories, transducers and cables, other than those specified in the accompanying documents, may result in increased emissions or decreased immunity of the equipment.

Guidance and manufacturer's declaration - electromagnetic emissions		
The Radiographic Table is intended for use in the electromagnetic environment specified below. The customer or the user of the Radiographic Table should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The Radiographic Table uses RF energy only for their internal functions. Therefore, the RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The Radiographic Table is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration - electromagnetic immunity			
The Radiographic Table is intended for use in the electromagnetic environment specified below. The customer or the user of the Radiographic Table should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruption, and voltage variations on power supply input lines IEC 60601-4-11	< 5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) < 5% U_T (> 95% dip in U_T) for 5 s	< 5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) < 5% U_T (> 95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Radiographic Table requires continued operation during power mains interruptions, it is recommended that the Radiographic Table be powered from an uninterruptible power supply or battery.
Power frequency (50/60 Hz) IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment
NOTE: U_T is the A.C. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration - electromagnetic immunity			
The Radiographic Table is intended for use in the electromagnetic environment specified below. The customer or the user of the Radiographic Table should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 Vrms 150 kHz to 80MHz 3 V/m 80 MHz to 2,5 GHz	3 Vrms 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the Radiographic Table, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = 1{,}2\sqrt{P}$ $d = 1{,}2\sqrt{P}$, 80 MHz to 800 MHz $d = 2{,}3\sqrt{P}$, 800 MHz to 2,5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[a], should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

Guidance and manufacturer's declaration - electromagnetic immunity
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Radiographic Table is used exceeds the applicable RF compliance level above, the HF Series of X-ray generators (including TechVision option) should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Radiographic Table. [b] Over the frequency range 150 kHz to 80 kHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the Radiographic Table			
The Radiographic Table is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Radiographic Table can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Radiographic Table as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter m**		
	150 kHz to 80 MHz $d = 1{,}2\sqrt{P}$	80 MHz to 800 MHz $d = 1{,}2\sqrt{P}$	800 MHz to 2,5 GHz $d = 2{,}3\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer. NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

ABBREVIATION DEFINITION

The following abbreviations and acronyms may be found in this document. Their definition is explained below.

°C	Degrees Celsius
°F	Degrees Fahrenheit
AEC	Automatic Exposure Control
Al	Aluminum
CDRH	Center for Device for Radiological Health
CE	conformité européenne
CISPR	International special committee on Radio Interference
CSA	Canadian Standards Association
EN	European Norme
hPa	Hectopascal
IEC	International Electronic Commission
kg	kilogram
kHz	Kilohertz
NCRP	National Council on Radiation Protection
mm	Millimeter
QMI	Quantum Medical Imaging, LLC
RF	Radio Frequency
SID	Source Image Receptor Distance
UL	Underwriters Laboratory
U_T	A.C. mains voltage prior to application of test level
V/m	Volts per meter
Vrms	Average DC voltage
W	Watts

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WARRANTY STATEMENT

Quantum Medical Imaging, LLC (herein after known as "QMI") warrants to the buyer that any new product manufactured by QMI will be free from defects in material and workmanship, and will substantially conform to the applicable specifications in effect on the date of shipment when subjected to normal, proper and its intended use by properly trained personnel. QMI shall be the sole judge in determining whether said equipment or component is defective by reason of manufacture.

All QMI products shall be so warranted for a period of 12 months from the date of original installation, such date to be evidenced by means of a completed Warranty Card returned to QMI within 30 days of installation. In no case shall the warranty extend beyond 15 months from the date of shipment. If the attached warranty card is not so returned to QMI, then the warranty period will be deemed to have commenced on the date of shipment (the invoice date) and extend for a period of twelve months. The buyer should submit only one such card per system or major component purchased.

WARRANTY CARD

Cut along dashed line

Name of Owner _____

Name of Facility _____

Address 1 _____

Address 2 _____

City _____ **State** _____

Country _____ **Zip** _____

Phone _____

e-mail _____

Name of Distributor _____

Installation Date _____

Check Type of Equipment and Provide ID No.'s:

	Model No.:	Serial No.:
☐ Hi-Freq. Generator		
☐ Table		
☐ Collimator		
☐ Hi-Tension Cable		
☐ Tube		
☐ Tube Stand		
☐ Wall Stand		
☐ Other		

Return To: **QUANTUM MEDICAL IMAGING, LLC.**
2002-B ORVILLE DRIVE NORTH
RONKONKOMA, NY 11779 USA
FAX: 631 567-5074 VOICE: 631 567-5800

Warranty Information

Clip or Copy Warranty Card on reverse side and submit to QMI

See Reverse Side for Warranty Card

WARRANTY STATEMENT (Continued)

Promptly complete the warranty card and mail or fax it to:

Quantum Medical Imaging, LLC
2002-B Orville Drive North
Ronkonkoma, N.Y. 11779 USA
631 567-5074 fax 631 567-5800 voice

Replacement components furnished by QMI to the Buyer/Dealer during the warranty period shall be warranted for the remainder of the original product warranty or 90 days, whichever is longer. This warranty extends only to the original purchaser and is not transferable unless expressly authorized in writing by Quantum Medical Imaging, LLC.

Products manufactured by parties other than QMI, whereby QMI acts solely as distributor or reseller, are warranted exclusively by their manufacturers according to each of their independent warranty terms and conditions.

Warranty consideration can only be given for defective QMI products properly returned to the factory in accordance with the QMI Returned Materials Procedure (refer to Dealer Price Book or contact QMI customer service).

WARRANTY EXCLUSIONS

The foregoing warranties are exclusive and in lieu of all other warranties, whether written, oral, express, implied or statutory. NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. Quantum Medical Imaging, LLC Warranty is exclusive of:

1) Failure of the Buyer/Dealer to prepare the site and operating environment in accordance with applicable instructions and recommendations of QMI.

2) Failure of Buyer/Dealer to provide the proper incoming power required to support the equipment in accordance with the requirements of QMI.

3) Modification of QMI products performed by a party other than QMI.

4) Combining products deemed by QMI to be incompatible.

5) Improper or extraordinary use of a product, improper maintenance of the product, or failure to comply with any applicable instructions and recommendations of Quantum Medical Imaging, LLC.

6) Misuse, abuse, tampering, or negligent storage or handling of a product by the Buyer, its employees, agents, or contractors.

7) Fuses, glassware, high voltage cables and other items deemed by QMI to be expendable.

Acts of God, fires, floods, power failure or electrical power surges. Strikes, sabotage, labor disturbances, war, riots, acts of civil or military authority, or other causes beyond the reasonable control of QMI.

Installation, routine troubleshooting and repair are also excluded from warranty. Technical service and maintenance is the responsibility of the Dealership selling the equipment.

The Manufacturer is hereby relieved of all responsibility for damage during shipment of the product following the freight carrier's pick-up for transportation to the delivery point.

BUYER'S REMEDIES

If QMI determines that a product fails to meet any specification during the applicable warranty period, QMI shall correct any such failure as follows:

A) By repairing, adjusting, or replacing any defective or non-conforming component or product.

B) By making available any necessary repair or replacement parts or assemblies for exchange.

Quantum Medical Imaging, LLC shall have the option to furnish either new or rebuilt replacement parts or assemblies for exchange. All returned parts shall become the property of Quantum Medical Imaging, LLC upon exchange.

The preceding Paragraphs set forth the Buyer's sole remedies and QMI's sole liability for claims based upon failure of the product to meet any warranty, whether the claim is on contract, warranty, tort (including negligence and strict liability) or otherwise, and however instituted.

Upon the expiration of the applicable warranty period, all such liability shall terminate. In no event shall QMI be liable for special or consequential damages arising out of the use of or inability to use its equipment, whatsoever.

The warranties and remedies available to the buyer are conditioned upon claims under this warranty being made in accordance with the aforementioned warranty statement.

WARRANTY RETURN PROCEDURE

A fully completed Field Returned Material Evaluation Form must be returned with any defective product or any returned item. All returns must include the Serial Number of the Equipment and the Specific Part Number written on the Field Returned Material Evaluation Form. All freight charges resulting from Warranty Returns are the responsibility of the Buyer/Dealer.

EQUIPMENT IN TRANSIT

QMI assumes no responsibility for equipment damaged in transit to or from QMI. To protect the Buyer/Dealer, the receiver of any equipment should examine all cartons and crates carefully at the time of delivery. If damage is apparent, make a notation on the delivery receipt, request an inspection by the freight carrier, and if applicable, file an appropriate carrier claim. Should concealed damage be detected, immediately notify the carrier and request an inspection. The purchaser (Buyer/Dealer/Customer) is fully responsible for the filing of freight damage claims to the freight carrier.

QMI assumes no responsibility for any loss or damage to products once they have been shipped from our factory. As such, the Buyer/Dealer and Customer remain fully responsible for payment to QMI for all invoices, according to our standard payment terms, regardless of freight damage or processing of an insurance claim, by the dealer or customer.

VOIDING WARRANTY

Tampering with, or any attempt at installation, maintenance, repair, service, relocation, or alteration of or to a QMI product, when performed by any person or entity other than Quantum Medical Imaging, LLC or its Certified Dealer without the written approval of an Authorized Person at Quantum Medical Imaging, LLC, shall immediately Void and Cancel all warranties with respect to the affected product.

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Chapter 1

INTRODUCTION

OVERVIEW

This manual provides information for installing, operating, and maintaining the Quantum Medical Imaging Mobile and Fixed, Non-Float-Top, Radiographic Tables Models: QT-710 and QT-720 respectively (hereinafter referred to as the Radiographic Table). It is imperative that all safety procedures described in this manual be strictly adhered to in order to ensure the safety of both patient and user.

NOTE: The user should read the manual in its entirety prior to using the equipment described herein. The Manual should be kept in a location near the equipment and readily accessible to those that operate it.

The key features of the Radiographic Table are as follows:

- Large tabletop area: 188.0 cm (74 in.) long by 71.1 cm (28 in.) wide
- provides an ample examination platform
- Close Patient-to-Film Plane distance of typically 5.8 cm (2.3 in.) to 7.4 cm (2.9 in.)
- provides superior radiography with minimum magnification
- Compact, low-maintenance design
- Model QT-710 features 12.7 cm (5 in.) wheels designed to optimize table mobility;
- foot-operated total locks on all four wheels, lock pivot and roll
- Configurable with either Fixed Grid or Bucky Receptor cabinets
- Models QT-710 and QT-720 accept a fixed grid cabinet; Model QT-720 also accepts a reciprocating bucky, with or without ACL (Auto Cassette Loading)
- Model QT-710 provides a 294.9 kg (650.0 lb) maximum patient load rating
  Model QT-720 provides a 158.8 kg (350.0 lb) maximum patient load rating

INTENDED USE

The Radiographic Tables are intended for use as a patient support device during the performance of radiographic examinations.

NOTE: Most tables are shipped with a Receptor Cabinet (i.e., fixed grid cabinet or bucky) factory installed. However, the table may be ordered without a Receptor Cabinet.

MAIN COMPONENTS

See Figure 1-1: Model QT-710, and Figure 1-2: Model QT-720 illustrating:

1. Tabletop
2. Receptor Cabinet (optional)
3. Receptor Cabinet Lock Lever
4. Compliance Label
5. Locking Wheels (Model QT-710 only)

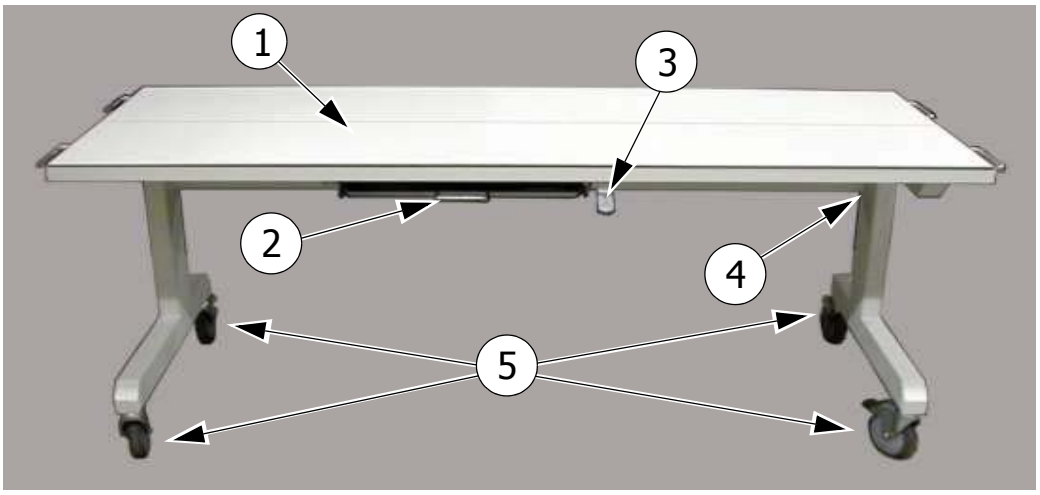

Figure 1-1. Model QT-710 Mobile Non-Float-Top Radiographic Table

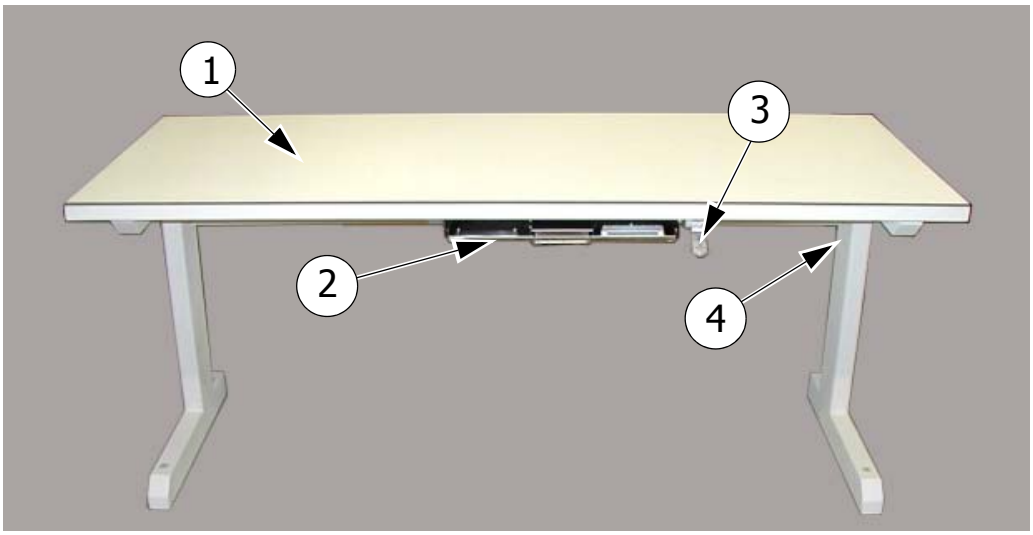

Figure 1-2. Model QT-720 Fixed Non-Float-Top Radiographic Table

Chapter 2

SPECIFICATIONS

PHYSICAL SPECIFICATIONS

The following are physical specifications for the Radiographic Tables (see Figures 2-1 and 2-2):

Tabletop Specifications

Length*:	1880 mm (74.0 in.)*
Width:	711 mm (28.0 in.)
Height:	807 mm (31.75 in.)
Material Type:	Fiber Resin (phenolic)
Density:	< 1.0 mm (0.039 in.) Al
Tabletop-to-Film plane distance:	From 58 to 74 mm (2.3 to 2.9 in.)

**Reduced length tabletops are available down to 60 inches (1524 mm); reduced length also reduces longitudinal travel.*

Table Base Specifications

Width (Leg-to-Leg):	1753 mm (69.0 in.)
Depth Model QT-710:	699 mm (27.5 in.)
Depth Model QT-720:	584 mm(23.0 in.)

Table Weight Specifications

Max. patient load (QT-710):	295 kg (650 lb)
Max. patient load: (QT-720):	159 kg (350 lb)
Table Weight:	68 kg (150 lb)
Bucky Weight w/grid and cassette tray:	15.9 - 18.2 kg (35 - 40 lb) typical

Other Specifications

Receptor Types: Model QT-710:	355.6 x 431.8 mm (14 x 17 in.) fixed grid
Model QT-720:	355.6 x 431.8 mm (14 x 17 in.) fixed grid 355.6 x 431.8 mm (14 x 17 in.) bucky (with or without ACL)
Collimator compatibility:	Manual Automatic (Model QT-720 only)

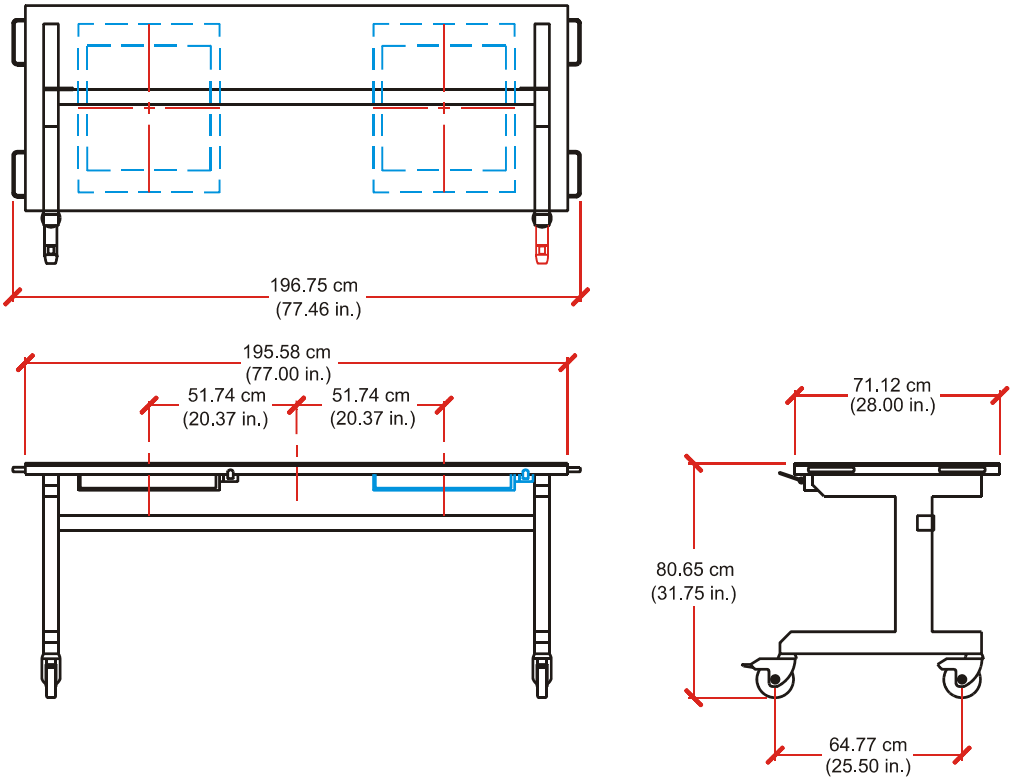

Figure 2-1. Model QT-710 Dimensions

PERFORMANCE SPECIFICATIONS

The following are performance specifications for the Radiographic Table:

Image Receptor Longitudinal Travel Specifications

Grid Cabinet:	1035 mm (40.75 in.)
Bucky Cabinet:	978 mm(38.50 in.)

System Operating Environment

Ambient Temperature:	10 to 40 °C (50 to 104 ° F)
Relative Humidity:	20 to 80 %, non-condensing
Atmospheric Pressure:	700 hPa to + 1060 hPa

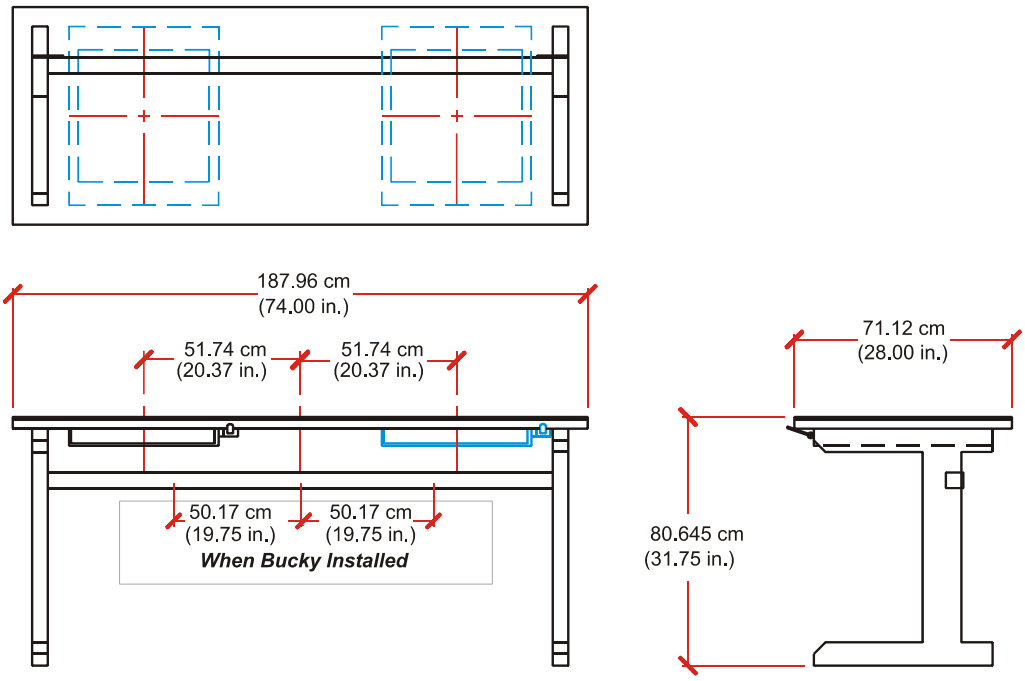

Figure 2-2. Model QT-720 Dimensions

Non-Operating Environment

Ambient Temperature:	-18 to +70 °C (0 to 158 ° F)
Relative Humidity:	20 to 95 %, non-condensing
Atmospheric Pressure:	500 hPa to + 1060 hPa

COMPATIBILITY STATEMENT

Quantum Medical Imaging, LLC Radiographic Tables are compatible with all Quantum Medical Imaging, LLC manufactured tube stands, wall stands, and high-voltage X-ray generators, and with other manufacturer's equipment with equivalent means for indication of SID and perpendicularity.

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Chapter 3

ASSEMBLY & INSTALLATION

Chapter 3 Assembly & Installation

OVERVIEW

This chapter describes the steps required to assemble the Radiographic Table and how to install the completed assembly in your facility, including making all required electrical connections.

NOTE: Examine all cartons and crates carefully at time of delivery. If damage is apparent, have delivery driver write a "Damaged Shipment Note" on copies of freight bill, sign it, and file appropriate carrier claim. Should you discover concealed damage, immediately notify the transporting agent and ask for an "Inspection of Damage". Carrier will not accept concealed damage after 15 days from date of receipt of merchandise.

REQUIRED TOOLS AND MATERIALS

The following tools and materials are required to complete the assembly and installation procedures:

- Socket Wrench Set
- Assorted Phillips and slot blade screwdrivers
- For Model QT-720 only:
  Drill and masonry bit (if concrete construction)
  Double bubble level (min. 18 inches in length)
  4 Concrete Anchors

UNPACKING

The Radiographic Table is shipped in separate shipping containers as follows:

- Table Base (with wheels mounted for Model QT-710)
- Table Top Assembly
- Table Leg Brace
- Optional Receptor Cabinet (fixed grid cabinet or bucky cabinet)
- Assorted hardware bag

1. Open the crate or carton marked "Packing List Enclosed" first.
2. Locate the Packing List and use it as a guide to unpacking the cartons.
3. Do not dispose of any packing materials until the parts received are matched against the Packing List.
4. If damaged components are found, notify the shipper or freight company immediately. Quantum Medical is expressly relieved of any responsibility for damage during shipment once the shipment has been transferred to the carrier at the factory.

5. Should there be any parts shortage, contact the Quantum Medical Imaging Service Department immediately.

INSTALLATION INSTRUCTIONS

NOTE: Prior to installing the Radiographic Table (QT-720), the area of the floor on which the Table Base is to be mounted must be smooth and level in all directions.

Assembly of Models QT-710 and QT-720 are identical. The illustrations below show the assembly of a Model QT-720 Radiographic Table as an example; however, the procedure is identical for both models. The only difference between them is the Model QT-710 base includes factory-installed casters.

Model QT-720 requires fastening to the floor. To complete its installation, the **Table Alignment Procedure** is also required; which is discussed at the end of this chapter.

Model QT-710 and Model QT-720 Table Assembly:

1. Attach the Table Leg Brace to rear side of each Table Legs using the four 1/4-20 x 3/4" hex bolts supplied (see Figure 3-1).
2. Place the Table Top Frame onto the Table Legs and secure using the four 5/16-18 UNC x 1" socket head cap screws, 5/16" flat washers, and 5/16" lock washers supplied.

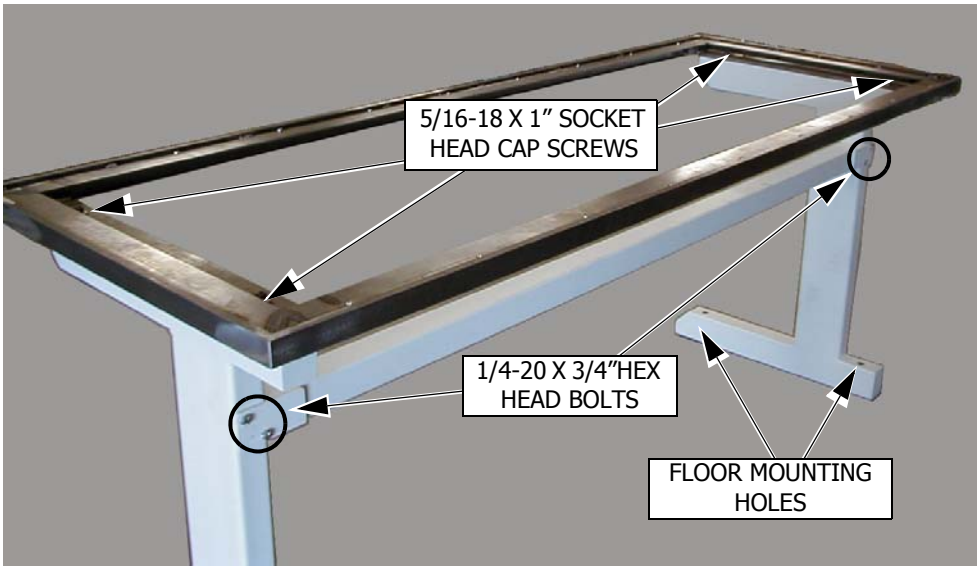

Figure 3-1. QT-720 Table Assembly (Viewed from Rear)

3. Install the Receptor Cabinet as follows:

   a. Loosely attach the two Front Receptor Bearing Brackets to the Receptor Cabinet as shown in Figure 3-2 below, using the three 1/4-20 x 3/4" pan head screws supplied.

NOTE: the bracket with the handle mounts to right side of cabinet.

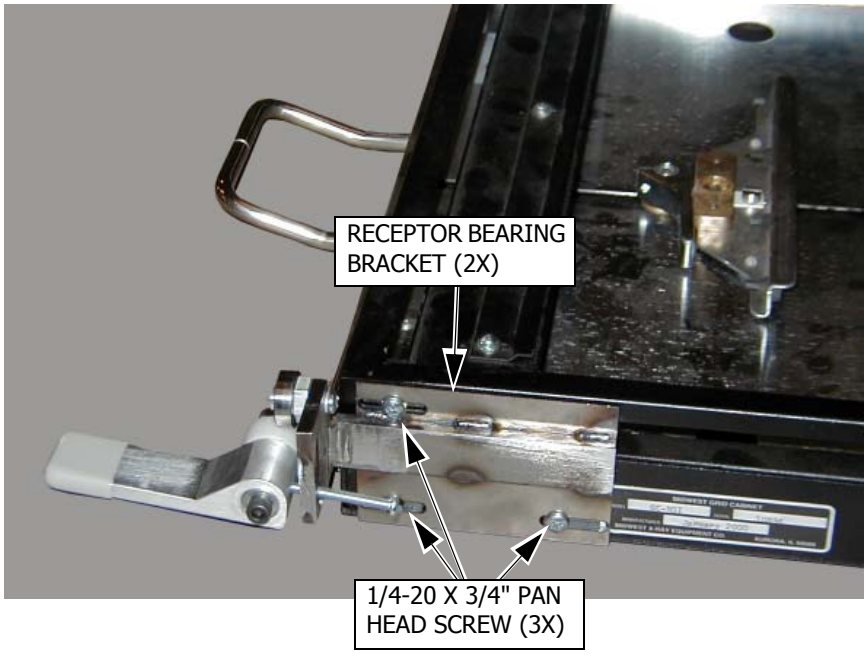

Figure 3-2. Front Receptor Bearings Resting on Rail

   b. Through the opening in the top of the table, carefully lower the back end of the Receptor Cabinet so it rests upon the Table Leg Brace (see Figure 3-3).

   Pulling forward, insert the Front Receptor Bearings into the front bearing track so the bearings rest on the front bearing rail. (see Figures 3-4 and 3-5).

Figure 3-3. Receptor Cabinet Resting on Table Leg Brace

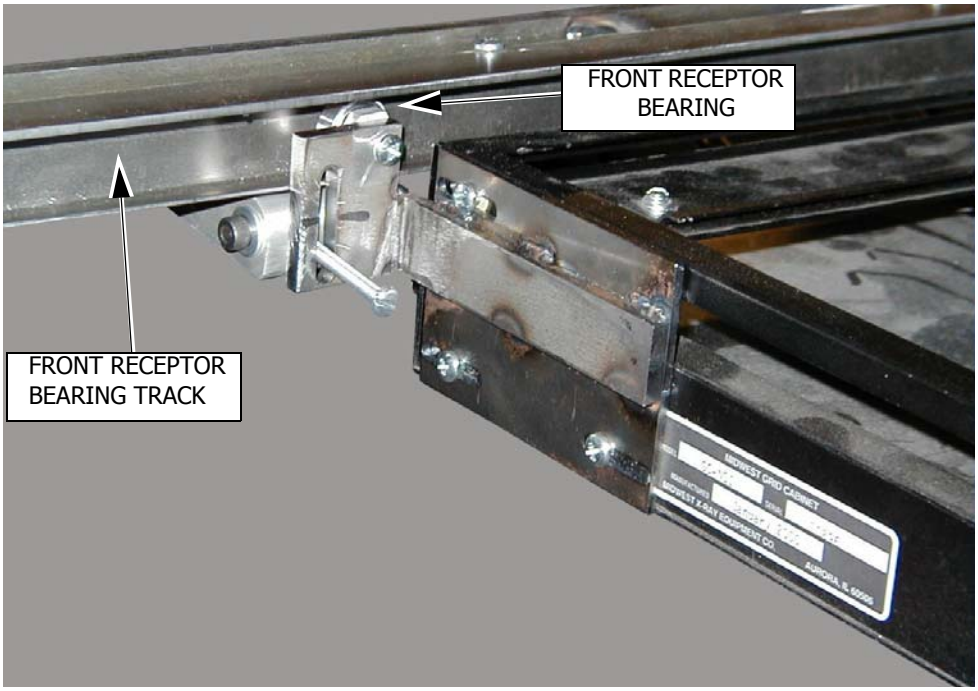

Figure 3-4. Front Receptor Bearings Resting on Rail

c. Insert the Left Rear Receptor Bearing Bracket through the slot at the far right end of the Rear Bearing Track, then repeat for the Right Rear Receptor Bearing Bracket and position as shown in Figure 3-6, below.

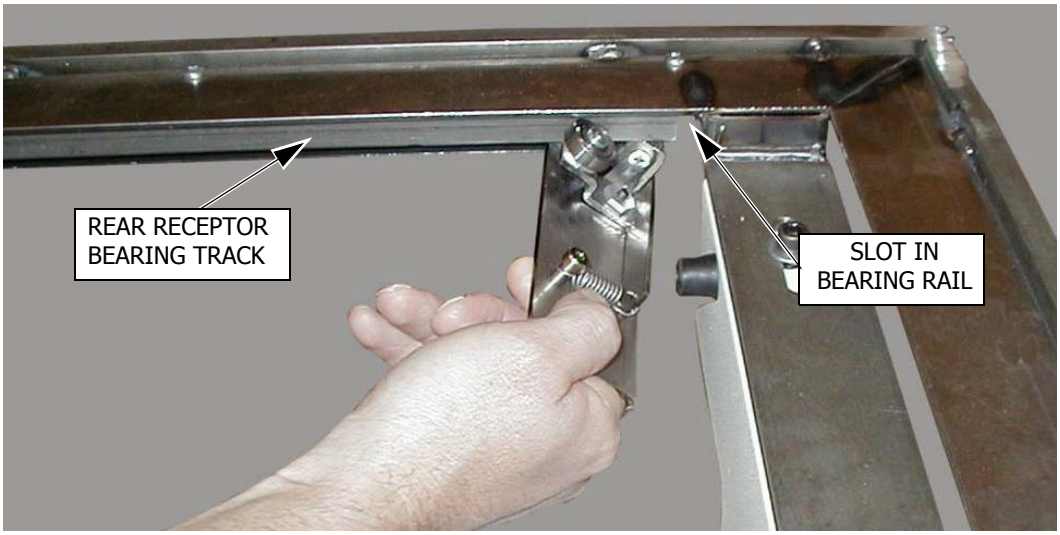

Figure 3-5. Inserting Left and Right Receptor Bearings onto Track

d. Loosely attach the Left and Right Rear Receptor Bearing Brackets to the rear of the Receptor Cabinet using two 1/4-20 x 3/4" pan head screws through each.

e. Slowly roll the Receptor Cabinet along the bearing rails while checking for smoothness. The mounting holes on the Receptor Bearing Brackets are slotted to permit adjustment. Adjust the four brackets as required until receptor travel is smooth and even throughout the full range of travel; then tighten all bracket screws.

Figure 3-6. Receptor Cabinet Fully Installed

f. Check operation of Receptor Cabinet Lock Release Lever. In the locked (down) position the cabinet should remain firmly in place. When in the unlocked (raised) position the cabinet should move freely. Perform the Receptor Cabinet Lock Release Lever Adjustment Procedure described in Chapter 5 - Maintenance, if necessary.

g. On Model QT-720 systems equipped with a bucky cabinet, route the bucky cable through the rear of the table. Provide a service loop in the cable such that there is no cable interference at any point throughout the full travel of Receptor Cabinet. Connect the system ground wire to the ground stud located on the rear of the left table leg.

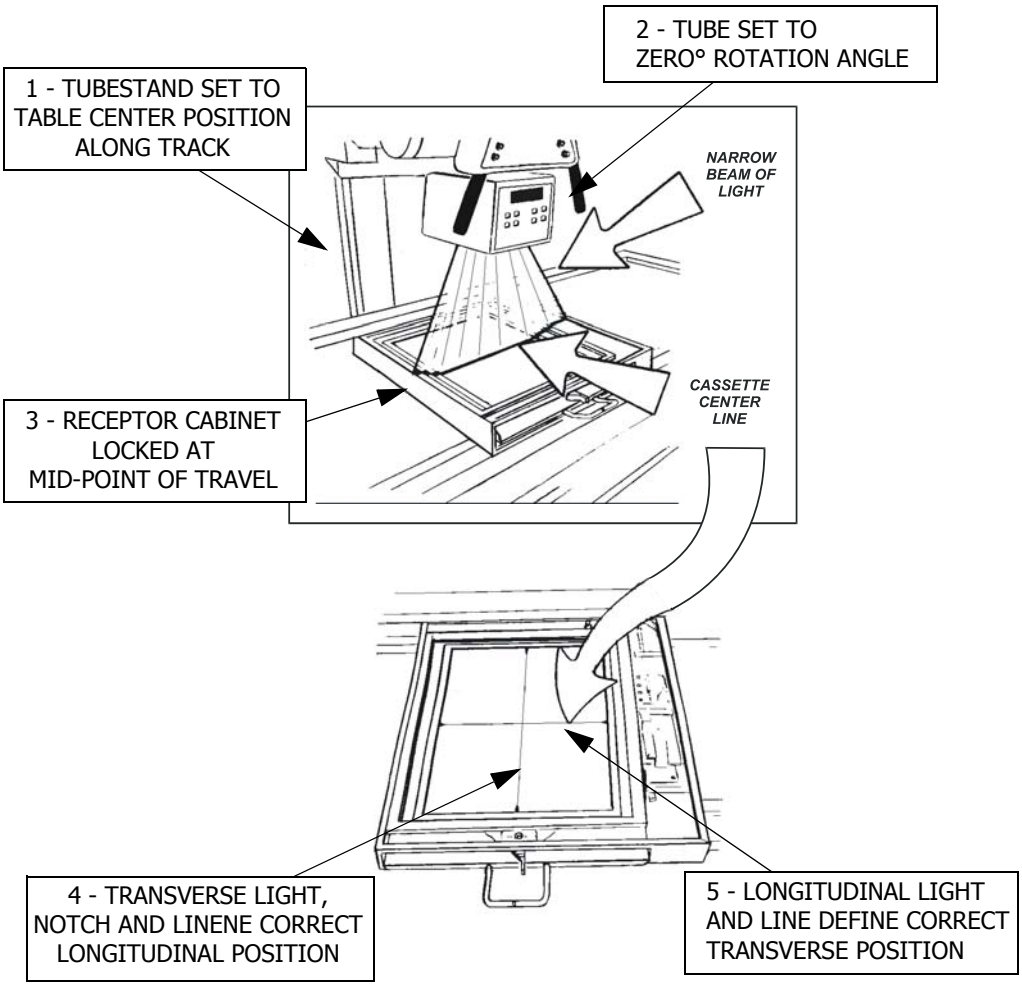

Figure 3-7. Image Receptor/Collimator Define Proper Table Alignment

Table Alignment (Model QT-720 Only)

In order to attain accurate X-ray exposure, the Radiographic Table's Image

Receptor must be aligned with the projected light field of the Collimator.

This may require slight repositioning of the table base, which may also affect the leveling shims; thus requiring an additional leveling prior to final mounting.

Collimator calibration, the tube stand/collimator alignments, and the collimator light field to X-ray field adjustments as described in the respective service manuals, must be completed prior to performing this procedure.

1. Position the tube stand along its track at the position for table center.
2. If the tube stand provides transverse X-ray tube travel, set the tube to the transverse center detent position.
3. Locate the table under the collimator in the approximate location where it will be mounted, and with the rear table legs measured equidistant from the tube stand track.
4. Set the collimator parallel to the table top (0° tube rotation), and position the collimator at 40" SID (source-to-image distance) to the table.
5. Position the bucky or grid cabinet at the center of its longitudinal travel within the table and lock it. Determine this by simple measurement.
6. Load a 14" x 17" film cassette into the cassette tray and extend the cassette tray handle so it protrudes slightly beyond the front edge of the tabletop, then illuminate the collimator light. See Figure 3-7.
7. Using the collimation adjustment controls, reduce the light field to a narrow beam oriented cross-table (transversely). Note: If your collimator is equipped with a transverse laser locator, use the laser line instead.
8. Position the table longitudinally by moving the table parallel to the tube stand track until the transverse centering light aligns with the transverse center line of the cassette and the notch on the cassette tray handle. This gives the initial longitudinal mounting position.
9. Again using the collimator controls, adjust the light field to a narrow beam of light oriented along the length of the table. Note: If your collimator is equipped with a longitudinal laser locator, use the laser line instead.
10. Position the tube vertically to an approximate 24" SID.

11. Move the table base in the transverse direction until the longitudinal center-line on the cassette is properly aligned with the narrow beam of light at the intersection of the transverse and longitudinal guide lines at the center of the cassette.
12. Next move the Tube and the Receptor Cabinet simultaneously, checking for continuous alignment of the light beam with the cassette center-line. Rotate the table slightly as necessary to achieve this result.
13. Once the light beam and cassette center-line are in proper alignment, verify that Tabletop is level. Place a level on the Tabletop. If the table is not perfectly level, insert shims (flat washers) between Table Leg(s) and the floor as required until the table is level.
14. Repeat all checks from Step 5 until all 3 alignment conditions are satisfied.
15. Mark, drill and mount the Table Legs to the floor through the 3/8" diameter holes, being certain to insure all leveling washers are in the proper position. Use hardware suitable for the type of floor construction, and of sufficient strength to handle a 100 lb. pull-load each.

FINAL INSTALLATION – MODEL QT-720

1. Connect the #10AWG yellow/green ground wire between the Table Ground Stud located on the right rear table leg, and the X-ray Generator Ground.
2. If so equipped, connect #16AWG yellow/green ground wire between the Bucky Cabinet Ground Stud and the Table Base Ground Stud.
3. Attach the Phenolic Table Top to Table Top Frame by compressing the Dual-Lock fastener around the entire perimeter.

POST INSTALLATION CHECK

All mounting procedures must have been approved prior to, and verified after, installation by the hospital or facility engineer, and a registered, professional, structural engineer. A leakage current measurement shall be performed following installation to verify the system meets permissible levels.

Chapter 4

OPERATION

RADIOGRAPHIC TABLE OPERATION

CAUTION! All movable assemblies and parts of this equipment must be operated with reasonable care.

TABLE WHEEL LOCK OPERATION (MODEL QT-710 ONLY)

On the Model QT-710 Mobile Radiographic Table, total wheel locks are provided on all wheels, for complete immobilization of the table (see Figure 4-1). To operate the wheel locks, proceed as follows:

Locking the Wheels - Depress the end of the Locking Lever on each wheel with your foot. The table is now locked and the wheels cannot roll or pivot.

Unlocking the Wheels - Raise the Locking Lever on each wheel with your foot. The table is now unlocked and each wheel is free to roll and pivot.

CAUTION! Ensure wheels are firmly locked before transferring a patient on or off of the table.

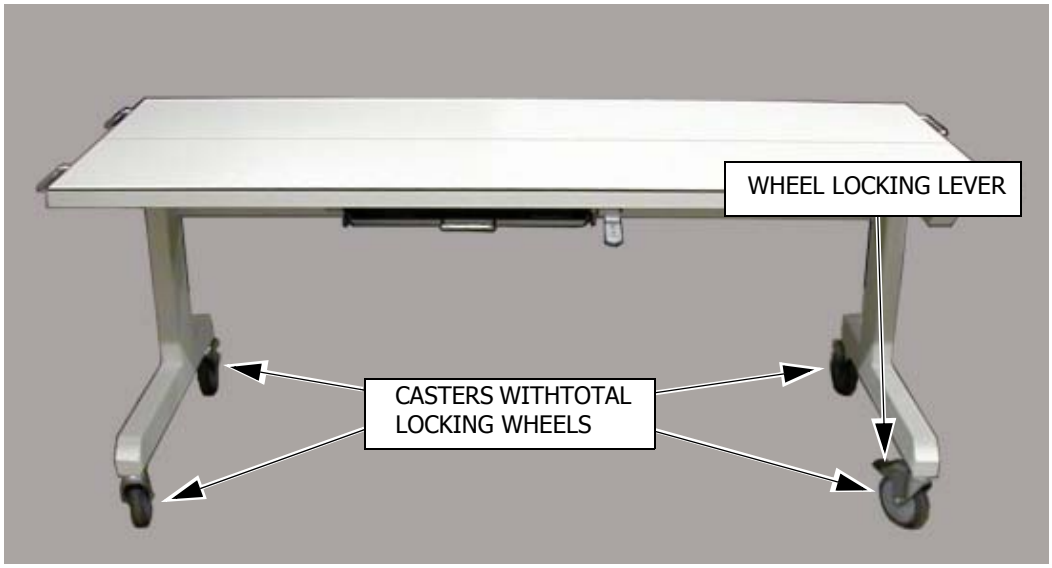

Figure 4-1. Wheel and Locking Lever Locations

RECEPTOR CABINET MOTION

The Receptor Cabinet, containing the cassette tray, moves longitudinally (i.e., left or right). This is accomplished by unlocking (raising) the Receptor Cabinet Lock Release Lever attached to Receptor Cabinet and sliding the cabinet to the desired position. Depressing the Receptor Cabinet Lock Release Lever locks the cabinet in its new position. See Figure 4-2 below.

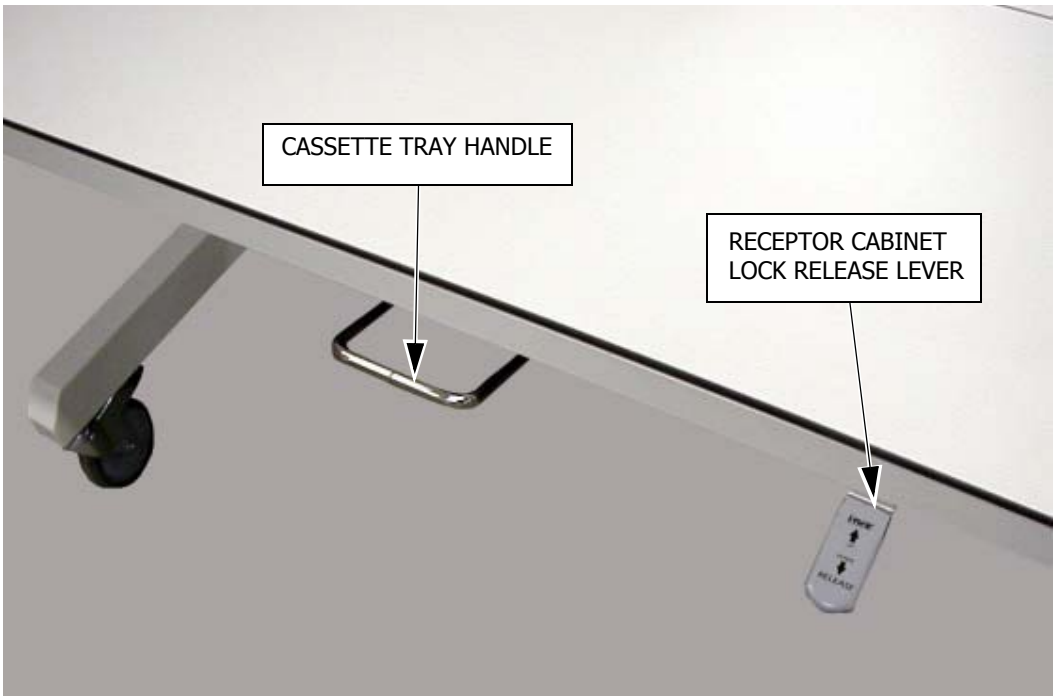

Figure 4-2. Receptor Cabinet Lock Release Lever

CASSETTE TRAY OPERATION

The Radiographic Table is equipped with either a Quantum or Poersch cassette tray, depending on the system ordered. The following paragraphs describe the operating instructions for each. Additional information is contained in the cassette tray manufacturer's documentation, which is shipped with the table.

Loading the Cassette Tray (Quantum Type)

To load a film cassette into a Quantum cassette tray, proceed as follows:

1. Pull the cassette tray from the Receptor Cabinet using the tray handle (see Figure 4-3).
2. Release the Lock Handle.
3. Pull back on Front Cassette Grip to open both grips.

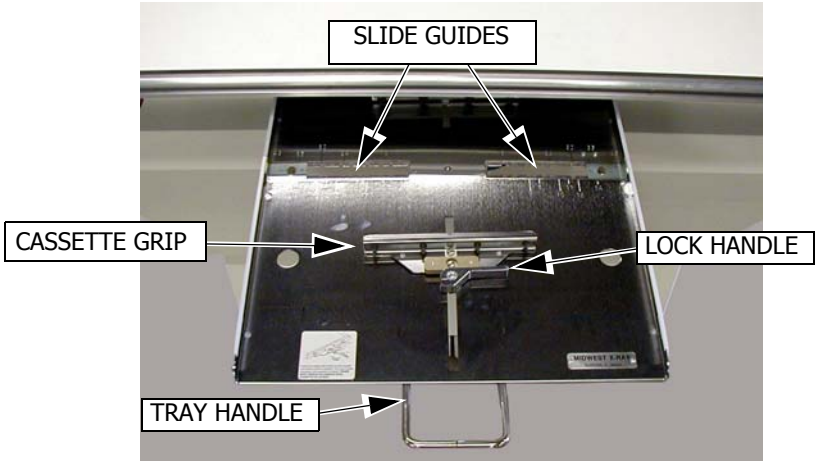

Figure 4-3. Quantum Cassette Film Tray

4. Depress the Brass release button to allow positioning of the two Slide Guides to the correct cassette size. Use the size indications stamped into the cassette tray.
5. Insert the cassette into the tray, rear edge first.
6. Push the front cassette grip up against the cassette.
7. While holding the grip against cassette, turn the cassette lock handle to lock it into position.
8. Push the tray into the Receptor Cabinet. The cassette is now ready for exposure.

Loading Cassette Tray (Poersch Type)

To load a film cassette into a "Poersch" type cassette tray, proceed as follows:

1. Pull the cassette tray from the Receptor Cabinet using the tray handle (see Figure 4-4).
2. Place your thumb under the lip of the Clamp Handle. Lift the handle to release it.
3. Grasp the handle and slide the clamp toward you to open it.
4. Insert a film cassette into the tray rear edge first, and center the cassette using the Centering Label, as shown.
5. Slide the clamp handle rearward, pressing the clamp firmly against the cassette.
6. While holding the clamp against cassette, press the handle down to lock it.

7. Push the tray into the Receptor Cabinet. The cassette is now ready for exposure.

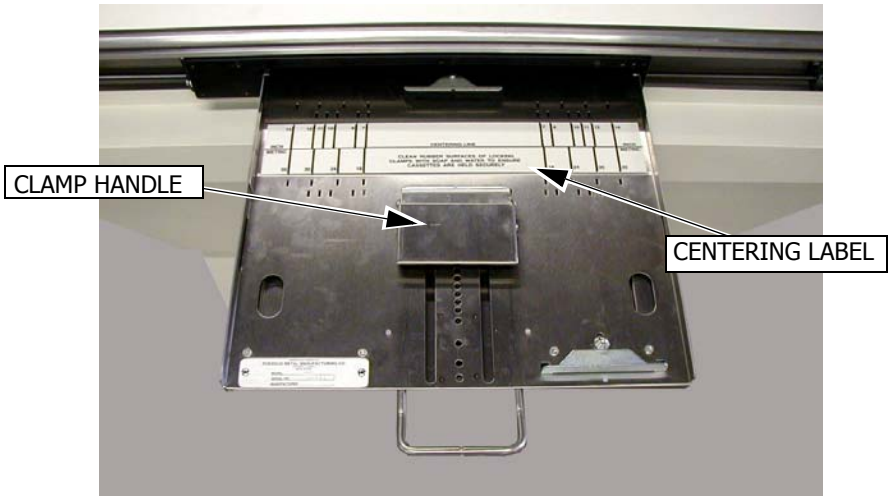

Figure 4-4. Poersch Film Cassette Tray

Chapter 5

MAINTENANCE

MAINTENANCE OVERVIEW

Although Quantum Radiographic Tables are designed to function reliably for many years with minimal attention, scheduled maintenance is a requirement for maintaining the warranty, and is the responsibility of both the end user and the local Servicing Dealer.

WARNING! Failure to follow manufacturer's or service personnel's recommendations may result in serious injury.

WARNING! Only qualified and authorized persons shall work on this equipment. In this context, qualified means those legally permitted to work on the equipment, and authorized means those specifically authorized by local management.

CAUTION! Changes, additions or maintenance to the equipment carried out by persons without appropriate qualifications and training and/or using un- approved spare parts may lead to serious risk of injury and damage to the equipment as well as making the warranty void.

USER MAINTENANCE REQUIREMENTS

The user is solely responsible for maintaining the cleanliness of this equipment. The Phenolic Tabletop surface is non-porous and should be continuously wiped clean and sanitized after each use. The painted metal surfaces may be cleaned using a cloth lightly moistened in warm mild soapy water, then wiped with a clean wet cloth and dried.

Disinfect the table top surface after each use in accordance with facility requirements.

CAUTION! Never use an abrasive polish on this equipment.

USER VISUAL INSPECTION

- Visually inspect the entire table for loose hardware or loose fit
- Verify the Casters, Wheels, and Wheel Locks operate correctly
  - * Confirm all wheels roll and swivel freely in the unlocked position
  - * Confirm the wheels do not roll or swivel in the locked position
- Verify the Receptor Cabinet moves smoothly and locks in place
- Verify the Cassette Tray retracts and seats smoothly
- Verify the Film Cassette is held securely within the tray when locked

Chapter 5 Maintenance

SCHEDULED MAINTENANCE REQUIREMENTS

NOTE: A complete series of inspections and functional checks was conducted at the time of installation to insure proper operation of the system. The following inspection and adjustment procedures are recommended to maintain the system in its original operating condition.

Inspection, lubrication, and maintenance of the Radiographic Table should be performed on an annual basis unless the table is subjected to very heavy use, where a semi-annual schedule is recommended. Maintenance should be performed in accordance with the procedures specified in this Service Manual.

A complete series of inspections and functional checks was conducted at the time of manufacture to insure proper operation of the system. The following inspection and adjustment procedures are recommended to maintain the system in its original operating condition:

- Remove the Tabletop and conduct a general inspection for worn or damaged parts or wiring.
- Check all bearings, rails, and bearing surfaces for cleanliness and corrosion; clean and lightly lubricate as necessary.
- Check for loose hardware throughout, and tighten all as necessary.
- Check each Caster, Wheel, Brake, and Pivot Lock, and replace if necessary.
- Check operation of Receptor Cabinet Lock Release Lever, adjust as needed using the procedure outlined below.
- Check for wear, fit, and operation of the cassette tray.
- For QT-720 with Bucky Cabinet, check ground continuity to system ground

RECEPTOR CABINET LOCK RELEASE LEVER ADJUSTMENT PROCEDURE

This procedure provides the steps necessary to properly adjust the Receptor Cabinet Lock Release Lever. Refer to Figure 5-1 and proceed as follows:

1. Loosen the socket head cap screw on the Lock Release Lever axle.
2. Rotate the Delrin Brake Eccentric to either increase or decrease the gap between it and the table frame.
3. Re-tighten the socket head cap screw.
4. Re-check operation of the Receptor Cabinet Lock Release Lever over the entire range of travel of the Receptor Cabinet. Repeat as necessary.

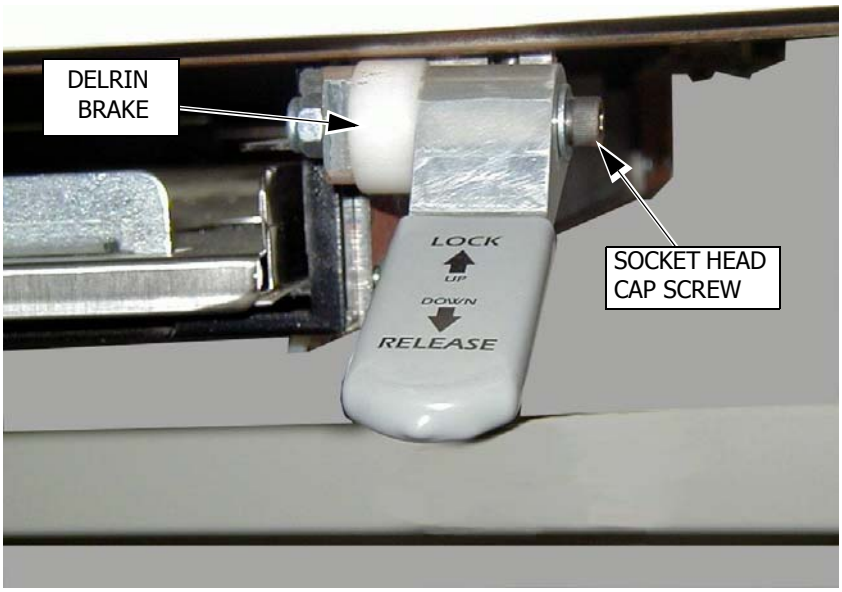

Figure 5-1. Receptor Cabinet Lock Release Lever Adjustment

REPLACEMENT PARTS

Table 5-1 provides a list of common replacement parts for the Radiographic Table. Figures 5-2 through 5-4 show their locations within the table.

Table 5-1. Replaceable Parts List

ITEM	DESCRIPTION	PART NUMBER	QTY
1	Tabletop - Phenolic	ME31-001	1
2a	Brake handle - w/o Grip	ME10-086	1
2b	Brake Handle Grip - Gray	ME30-012	1
3	Delrin Brake	ME10-085	1
4	Rubber Stop - Receptor Cabinet	ME30-001	2
5	Spring Extension	FA95-001	2
6	Bearing, R6ZZ 0.375 ID	ME40-180	12
7	Caster, Swivel w/Total Lock	ME41-011	4
8	QT-710 Wheel Mounting Hardware 1/2" - 13 x 1" Hex Head Bolt	FHN-1320-1	4
9	QT-710 Wheel Mounting Hardware Flat Washer for 1/2" Bolt	FFW-12N-3	4

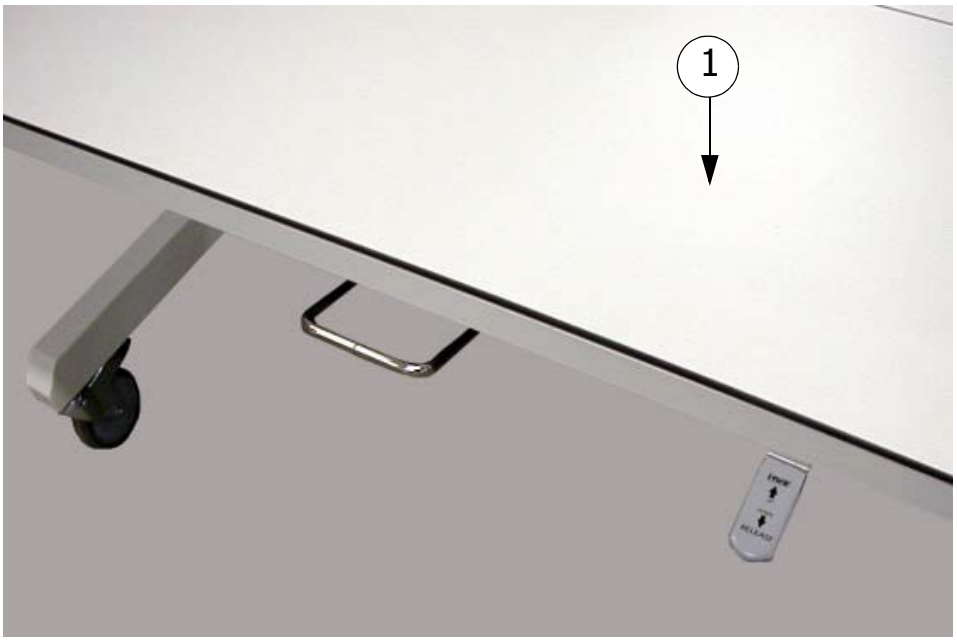

Figure 5-2. Replaceable Parts Location Diagram

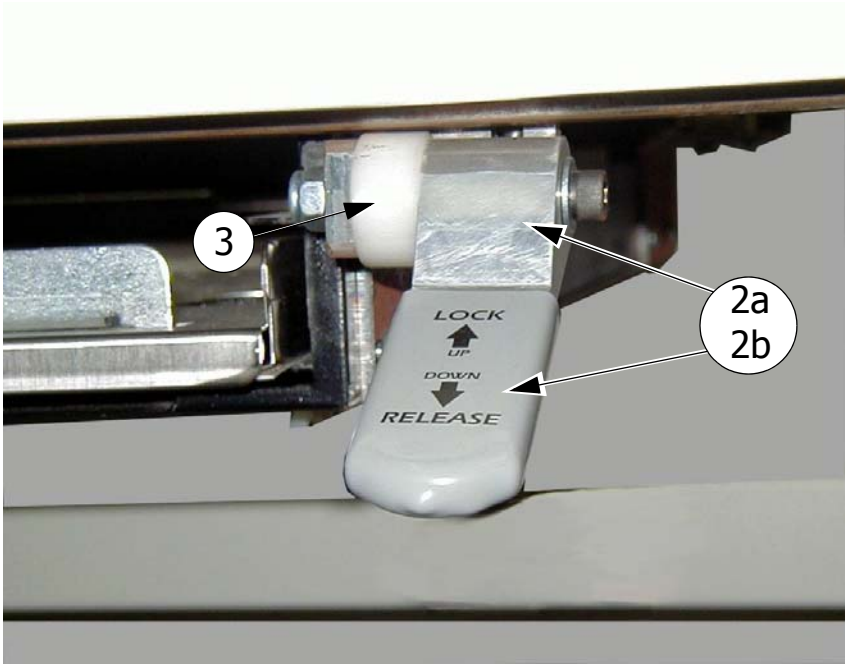

Figure 5-3. Replaceable Parts Location Diagram

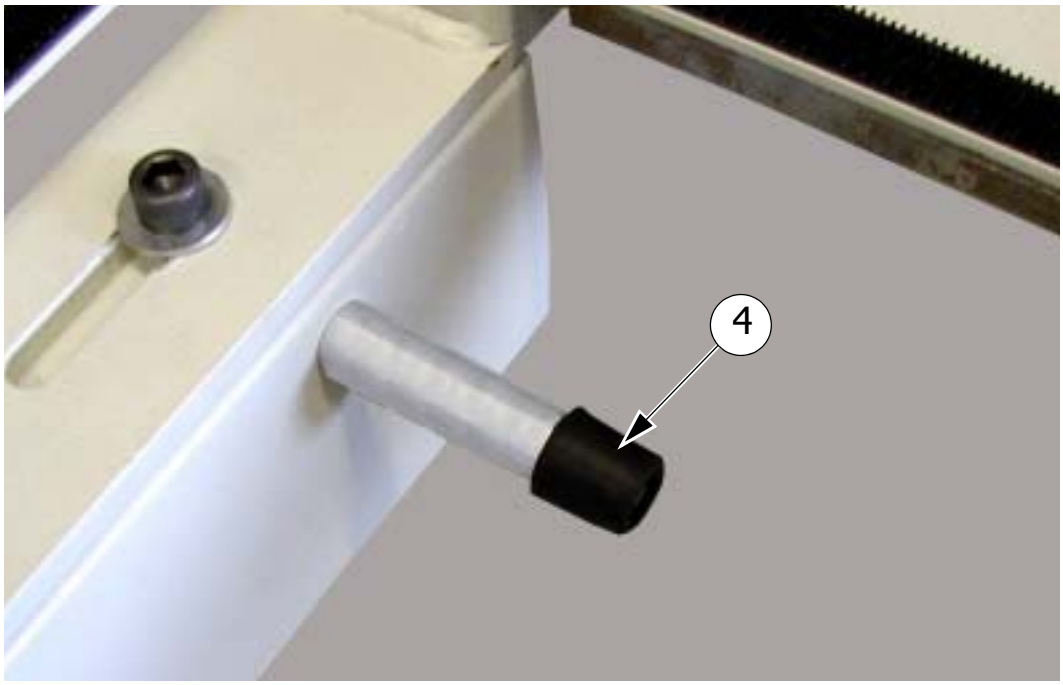

Figure 5-4. Replaceable Parts Location Diagram

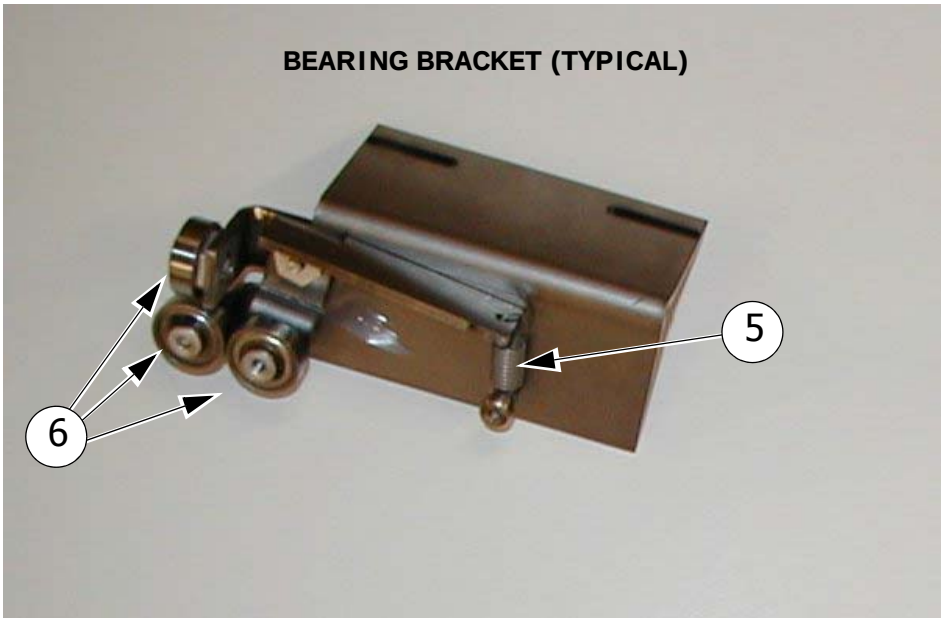

Figure 5-5. Replaceable Parts Location Diagram

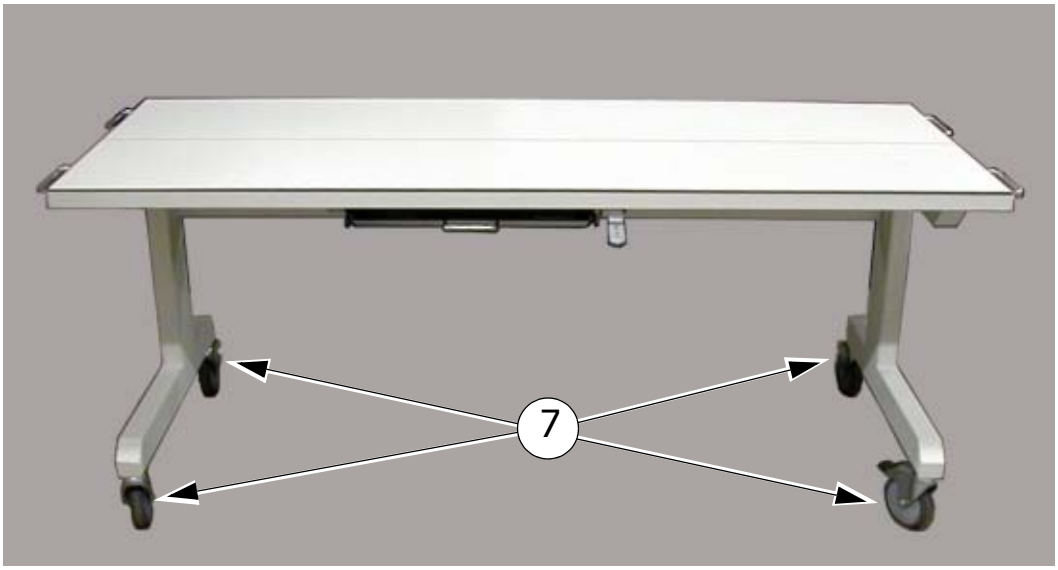

Figure 5-6. Replaceable Parts Location Diagram

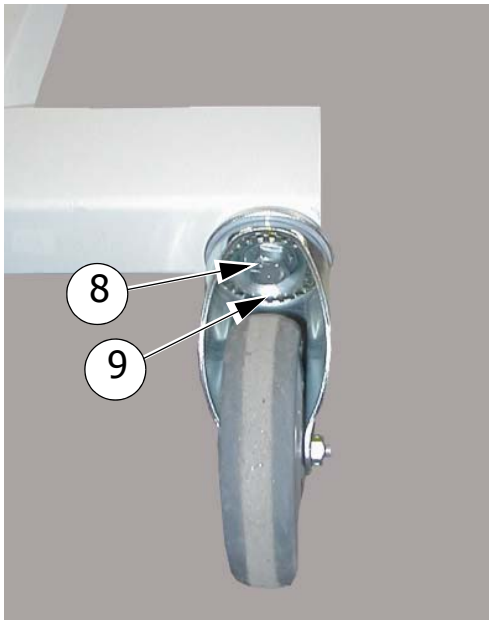

Figure 5-7. Replaceable Parts Location Diagram

ORDERING INFORMATION

To order replacement parts for the Radiographic Table, contact the Service Department at:

Quantum Medical Imaging, LLC
2002-B Orville Drive North
Ronkonkoma, New York 11779 USA
Phone: (631) 567-5800 (x2)
Fax: (631) 567-5074
e-mail: info@qmiteam.com

When ordering replacement parts, supply the following information:

- Model and serial number of equipment
- Part number
- Part description
- Quantity required

When ordering components or parts not listed in Table 5-1, a complete description of the part, including its function and location should be provided with the model number and serial number of the unit.

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