

MCA-6200 C-ARM MOBILE

HIGH FREQUENCY GENERATOR WITH DIGITAL CCD CAMERA



DESCRIPTION:

MCA-6200 (9" Image Intensifier tube) is a family of R/F mobile C-arm systems, with State-of-the-Art **microprocessor control** and the **true digital imaging** capabilities, designed to meet the demands of today's complex surgical procedures. The compact size allows easy maneuverability and the necessary flexibility for a wide range of radiographic and fluoroscopic procedures needed for all dynamic healthcare facilities.

HF x-ray generator with ripple-free, constant potential output provides improved image quality, and reduces patient dosage. Further reductions in radiation are realized with digital imaging acquisition and **Pulsed Fluoro modes** of operation. The **Boost Fluoro** mode allows rapid, high contrast image acquisition in MDF-2000 digital image processor during special vascular angiographic application and others.

Dual operator console designed on the membrane flat panel allows easy visualization and manipulation of all system functions from either side of C-arm mobile systems. This enables quick technique selection and alteration to suit the requirements of a specific examination in an operating room environment. MCA-6200 mobile C-arm systems are utilized for surgical, urology, neurology, orthopedic, peripheral angiography, emergency and pain management clinics.

FEATURES:

- **High Frequency generator:** 3.2 Kw output
- **High resolution II tube:** 9" II (Triple mode)
- **True digital CCD camera & digital imaging processor**
- **Pulsed Fluoro** for dose reduction
- **Boost Fluoro mode:** 10 mA for Hi-contrast
- **Auto Brightness Control (ABC)**
- **Large C-Arm structure** for optimum positioning
- **Four (4) blades and 360° Rotating Collimator**
- **360° Image rotation** on OP panel
- **Dual 17" monitor & LIH / Noise reduction**
- **True Digital CCD camera** with 16 frame memory
- **MDF-2000 Digital Image Management PC** (Optional)
- **DICOM Network** (Optional)
- **Power Requirement : 110 /220 VAC, 60/50 Hz**

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SYSTEM SPECIFICATION

X-RAY GENERATOR:

Type:	High Frequency Inverter, 40 Khz
OP Control:	Microprocessor & PROM
Console :	Membrane Touch panel
Display:	LED display panel
Output :	3.2 Kw. Max output
KV Range :	40-110 kV in 1 Kv steps
Rad. mA :	25 to 40 mA for Rad.
mAs:	0.4-200 mAs for Rad. mode
Fluoro mA:	- 0.2 to 5.0 mA, continuously - 0.2 to 5.0 mA, pulsed mode
Boost Fluoro:	10 mA for boost mode
Pulsed Mode:	1-8 Pulse Per Second, selectable
Fluoro Timer:	0 to 5.0 Min. and reset
Boost Timer:	1 to 15 seconds @ 10 mA boost mode
Auto. KV:	Automatic Brightness Control (ABC) for fluoroscopic image.
Image Capture:	Last Image Hold(LIH) & 16 frames Storage.

X-RAY TUBE:

Type:	Fixed Anode, DF-151 SBR, Toshiba
Focal Spot:	0.5 mm / 1.5 mm, dual focal spot
Heat Capacity:	Anode heat unit, 45,000HU
Anode Angle:	16° anode target angle
Filtration:	0.8 mm Al. @ 100 Kv

COLLIMATOR :

Type:	Remote motor driven control
Shutter:	Two(2) pair of lead blades
Diaphragms:	Two(2) sets of circular diaphragms
Filter:	2.0 mm Al. @ 100 kv
Rotation:	360° motor driven rotation

CASSETTE HOLDER :

Size :	24 cm x 24 cm or 24 cm x 30 cm Cassette adaptable.
Grid:	80 lines, 8:1 ratio, 28"-32" FD
Attachment:	Attached to II receptor ring.



DIGITAL CCD CAMERA:

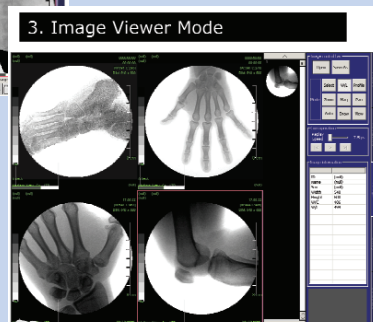
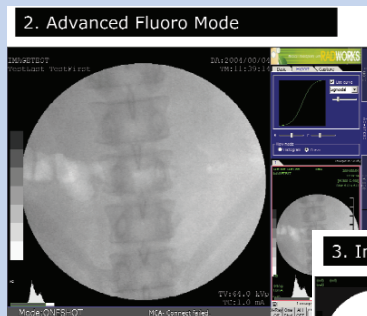
- Video signal : EIA (512 lines/59.9 Hz)
- Scanning : 2:1 Interlaced
- Aspect Ratio : 4:3 (H/V)
- Built-in image rotation
- Video reverse on black & white
- Image reverse on vertical & horizontal
- 470,000 pixels for CCD sensor
- Noise Reduction : Up to 8 level sections
- ABC : Auto Brightness Control
- AGC : Auto Gain Control
- Last Image Hold (LIH) & 1G Image Memories
- Camera Rotation; 360° continuously
- Video Out : Digital (1), Analog (1) and Memory (1) output

IMAGE INTENSIFIER TUBE (9" TUBE):

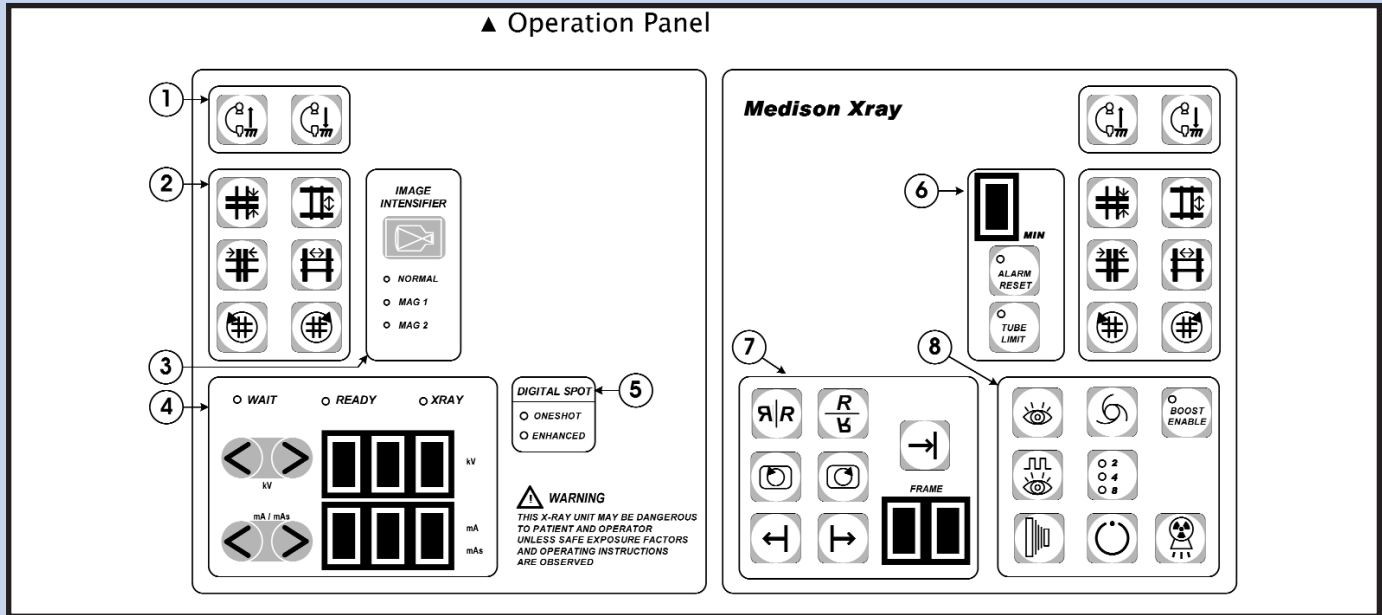
- Model: Toshiba E576450
- Tube Diameter: 29.4 cm(11.5")
- Input Screen: 21.5 cm(8.5")
- Output Screen: 2.0 cm(0.78")
- Resolution: 48 lp / cm
- Contrast Ratio: 23:1
- Magnification: Triple Mode (9/6/4.5)

C-ARM MOVEMENT & DIMENSION:

- Free Space in Arc: 30.4" (77.2 cm)
- Depth of Arc: 22.0" (56.0 cm)
- Orbital Rotation: 120° (-30°, +90°)
- Horizontal Travel: 7.8" (20 cm)
- Vertical Travel: 15.0" (15.7 cm) Motor Driven
- Panning Motion: ±12.5°
- Arm Rotation: ±180°
- Motion Lock: Friction locks for all movements
- Steering Handle: Handle controls the two front wheels
- Brake: Dual foot-peddle brake



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CONTROL PANEL DESCRIPTION :

1. C-arm Up / Down SW
2. Collimator Close/ Open & Rotation SW
3. I.I tube Mag. Selection SW
4. KV: Selection SW & Display LED
MA/ mAs: Selection SW & Display LED
5. Digital Spot Selection (Optional)
6. Fluoro time, Reset & Limit SW

7. Video Image Controller :
 - Video reverse: left & right, top & bottom
 - Video rotation
 - Memory selection & Frame display
8. Mode of Operation Selection :
 - Radiographic selection
 - Fluoroscopic selection
 - ABC selection for Fluoro
 - Boost Mode Selection
 - Pulsed Mode Selection
 - Ready & Exposure SW
 - X -Ray Indicator

DIGITAL IMAGE MANAGEMENT : MDF-2000

MDF-2000 is a Patient File & Imaging Management System operating with a "Window OS" workstation. It is integrated with MCA-6200 C-arm mobile unit in acquiring digital fluoroscopic images from a CCD digital camera system.

MDF-2000 is incorporated with MDFOS software which has been designed by Medison X-ray to support DICOM and other PACS networking systems. It is an advanced high-definition digital image capture, processing, real time display and viewing system for many types of medical applications.

1. SYSTEM SPECIFICATION:

- Pentium IV processor & Window 2000
- 512 MB RAM to 2 GB (Optional)
- 160 GB, EDIE hard driver
- RS232, Parallel port
- User-friendly operation with graphical software.
- Keyboard & Mouse

2. IMAGE ACQUISITION & DISPLAY

- Image acquisition : 512 X512 Pixel
- Dual display:
 - Live Image : 640 H x 480V size
 - Study Image : 1024H x 768V size
- Multiple display : 1 on 1 and up to 4 on 1
- Automatic & manual image capture
- Exam, Study, Review & Data mode display.

3. IMAGE PROCESSING:

- Real Time & Past Processing
- Brightness & contrast level control
- Pan & Zoom control
- Image Flip (Horizontal & Vertical)
- Image Rotation (360°)
- Noise Reduction & recursive filter
- Edge Enhancement (Sharpness)
- Histogram & Curve control
- Gamma Correction
- Cine- Run acquisition (Optional)

4. IMAGE MANAGEMENT:

- Create a patient file & database
- DICOM 3 interface
- Networking to PACS (Sending DICOM file to PACS Server)
- Networking to RIS/HIS (Worklist)
- Local Printer connection
- Study review with database
- Image review with DICOM file

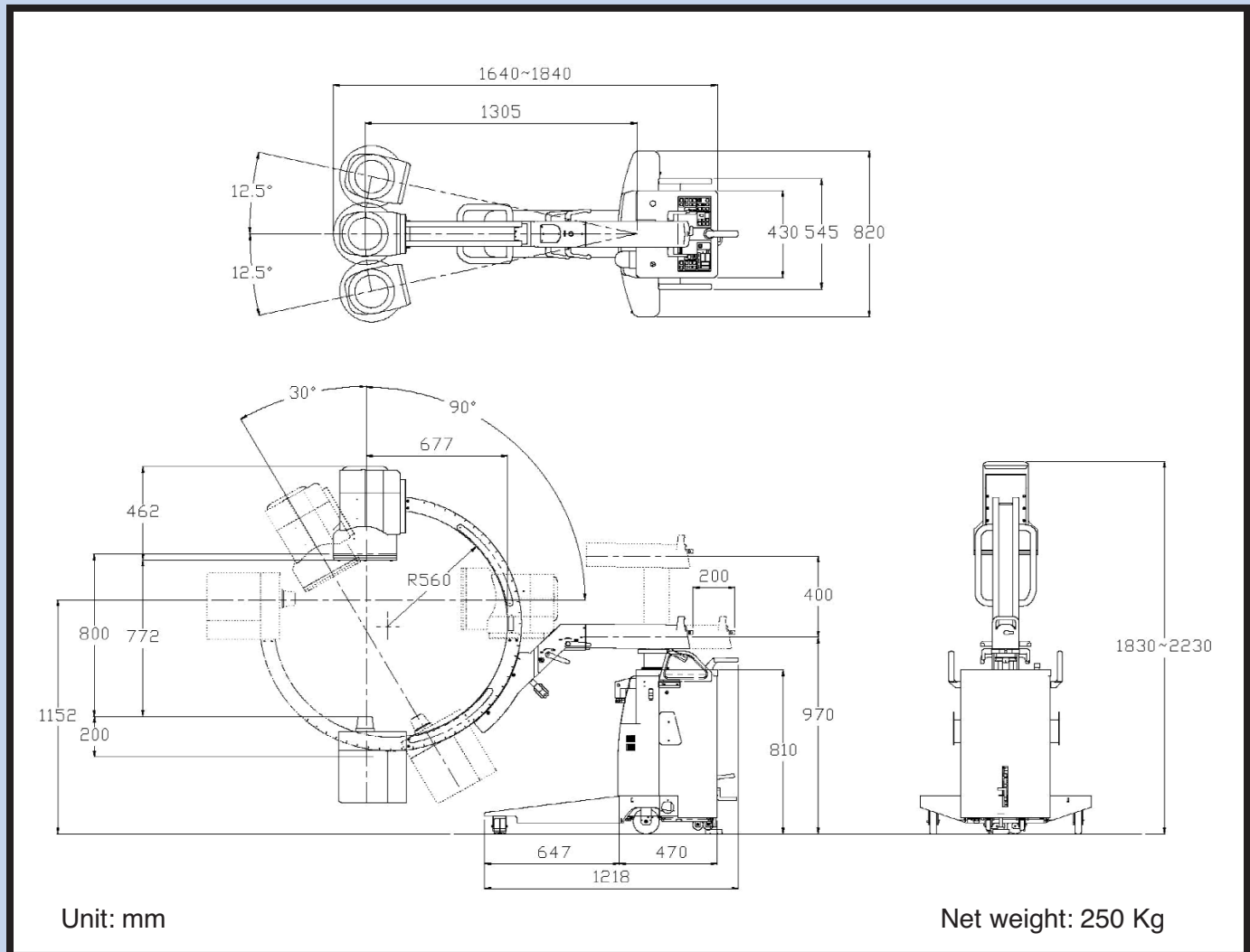
5. OVERLAY IMAGE DATA & DISPLAY

- Patient registration, Study & review
- Text & Measurement annotation
- Symbol annotation : Circle, arrow, squareetc.

6. IMAGE STORAGE:

- Up to 18,000 images on 160GB Hard Disk
- JPEG compression
- Convertible to a general format (BMP,PCX,GIG)

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DISTRIBUTOR

All specifications are subject to change without notice.

FULL CDRH COMPLIANCE :

MCA-6200 C-arm Mobile system conforms to all applicable requirements of the Center for Devices and Radiological Health Department and Human Services, 21 CFR, Chapter 1, subchapter J, at time of manufacture.

POWER REQUIREMENT:

Max Power : 3.2 KW
Line Voltage : 110 & 220 VAC, 50/60 Hz
Line Current : 23 A / 220 VAC for full output



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