In the event of a malfunction that could, or has contributed to a patient or operator injury, please contact:

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Attention, Consult Accompanying Documents – as applicable
MANUAL IMPROVEMENT RECOMMENDATION

We at Del Medical Imaging Corporation are most interested in improving the quality of the Technical Documentation we provide. Please identify improvements or corrections and fax them to our Technical Publications Department.

Name________________________________________________

Dealership____________________________________________

Manual Part Number____________________________________

Device Name__________________________________________

Recommendation or Correction_____________________________________

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RADIATION WARNINGS

The component of the equipment described within these Accompanying Documents is part of a system for the intended generation of X-rays for medical diagnosis.

X-rays generate a potential risk for both patients and operators. For this reason the application of X-rays for a given medical purpose must aim at the minimization of radiation exposition to any persons.

Those persons responsible for the application must have the specific knowledge according to legal requirements and regulations and must establish safe exposure procedures for this kind of systems.

MECHANICAL - ELECTRICAL WARNINGS

All of the movable assemblies and parts of this equipment should be operated with care and routinely inspected in accordance with the manufacturer’s recommendations contained in the equipment Accompanying Documents.

Only properly trained and qualified personnel should be permitted access to any internal parts. Live electrical terminals are deadly; be sure line disconnect switches are opened and other appropriate precautions are taken before opening access doors, removing enclosure panels, or attaching accessories.

Do not remove flexible high tension cables from X-ray tube housing or high tension generator and/or access covers from X-ray generator until the main and auxiliary power supplies have been disconnected.

For all components of the equipment protective earthing means must be provided in compliance with the national regulations.
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Operating Elements and Display on the Manual Collimator

(1) Setting knob for height format collimation (Turning to the left closes the collimator, turning to the right opens the collimator)

(2) Setting knob for width format collimation (Turning to the left closes the collimator, turning to the right opens the collimator)

(3) X-ray field illumination and linear light localizer on/off
Cutout also performed automatically via a time switch.
The operating time can be configured in steps of up to 90s.

(4) Measuring tape grip for SID measurement
- Take reading at bottom edge of collimator.
- The measuring tape has both a cm and an inch graduation.

(5) Stop lever for ±45° rotation of the collimator about the vertical axis
The collimator stops only in the 0° position.

(6) Two accessory rails

(7) Format height scale ring

(8) Format width scale ring

Each scale ring is assigned to a certain SID. The marks on the scale rings represent the cassette sizes.
View of Bottom of the Collimator

![Collimator Bottom Diagram]

On/Off switch (3) for illumination of full-field and linear light localizer
Linear LASER light localizer
Centering cross for positioning
Locking lever for accessories

Linear LASER Light Localizer

The linear LASER light localizer provides the axis mark for longitudinal centering which is lined up with the centering mark on the handle of the cassette loading device.

♦ The linear LASER light localizer for projection of the centering cross is switched on and off with push button (3) on the control panel.
- Automatic cutout of this function is effected via an internal time switch.

Warning

LASER Radiation
Peak power < 1mW / Wave Length 540-700 nm / Class II LASER Product
Do not stare into beam!
When you switch on the Linear LASER Light Localizer, take care that no person looks directly into the LASER to avoid eye injuries or impaired vision.

Centering Cross

The centering cross is used to display the longitudinal and transverse axes of the exposure field on the cassette or directly on the patient.

♦ The full-field light localizer for projecting the centering cross is switched on and off with push button (3) on the control panel.
- Automatic cutout is performed via an internal time switch.

❖ The linear and full-field light localizers cannot be switched separately.
Locking Lever

- The locking lever locks the compensating filters, templates, etc. inserted in the accessory rails of the collimator in place to prevent them from falling out.

- To remove an accessory from the collimator, the locking lever must be pressed in until the compensating filter, templates etc., can be removed.
  - See register on **Accessories** (accessories for collimator)
Rear View of the Collimator

(5) Stop lever for ± 45° rotation of collimator around vertical axis
(9) Two prefilter levers (See “Setting the prefiltration”)
Changing lamps on the multileaf collimator

- The lamp of the multileaf collimator may also be changed by the user if occasion demands.

1. Switch off the system.
2. Undo both Allen screws on lamp housing.
3. Remove lamp housing.
4. Undo the two Allen contact screws on the lamp.
5. Replace defective lamp.
6. Do not touch new lamp with your bare fingers.
7. Screw the two Allen contact screws tight.
8. Mount lamp housing and fasten it by retightening both screws.

**Warning**

If the halogen lamp of the light localizer remains illuminated for a longer period of time, the housing may heat up. Please avoid touching the lamp housing to prevent burns.

**Warning**

Always use OEM replacement lamps for the light localizer. Halogen lamps which are not short-circuit-proof may break and result in injuries caused by broken glass. Lamp type description: look at the label at the back side of collimator.
**Rotating the Collimator ± 45° around the Vertical Axis**

- Move stop lever (5) on collimator toward front panel, i.e. toward the operator

![Collimator in 0° lock-in position]

- The 0° lock-in position of the collimator is released by actuating the stop lever.

![Collimator rotated CW]

- Grasp collimator with both hands and rotate it by the desired angle to the required direction.

**Rotating the Collimator to the 0° Lock-in Position**

- Grasp collimator with both hands and turn it to the 0° lock-in position

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**Warning**

Always grasp collimator in such a way that neither hand can be pinched or crushed between the handles and the collimator.
Setting the Prefiltration

**Warning**

Check the *setting of the prefiltration lever prior to each* exposure!
Selection of the wrong filter may cause an *increased* patient radiation dose.

Filtration of the collimator: look at the label at the back side of collimator.

The two prefilter levers (9) are located on the left side of the collimator.

- Each prefiltration lever can stand either in the left or right position. This results in a total of four value combinations which are also indicated by labels on the collimator.
Prefiltration Lever Positions

Four prefiltration lever positions:
- 0.0 mm (no) Cu prefiltration
- 0.1 mm Cu prefiltration
- 0.2 mm Cu prefiltration
- 0.3 mm Cu prefiltration

- Set both prefiltration levers to the right:
  - 0.0 mm Cu prefiltration
- Set the upper prefiltration lever to the left, the lower prefiltration lever to the right:
  - 0.1 mm Cu prefiltration
- Set the upper prefiltration lever to the right, the lower prefiltration lever to the left:
  - 0.2 mm Cu prefiltration
- Set both prefiltration levers to the left:
  - 0.3 mm Cu prefiltration
**Multileaf collimator**

Manual version with manual format collimation system and light localizer for rectangular collimation with linear light localizer and rails for secondary filters

**Maximum field size**

35 cm x 35 cm with a 0.7 m SID  
43 cm x 43 cm with a 1.0 m SID

**Smallest field size**

2.5 cm x 2.5 cm with a 1.0 m SID

**Angle of rotation**

± 45° around central beam axis

**Halogen lamp**

Only OEM Siemens lamps may be used as replacement parts!  
24 V- / 150 W / part no.: 8375545 G2107

**Inherent filtration**

1.0 mm Al with 75 kV and 2.5 mm total Al filtration

**Secondary filters**

manual filter selection  
0.1 mm Cu; corresponds to 3.5 mm Al equivalent  
0.2 mm Cu; corresponds to 7.1 mm Al equivalent  
0.3 mm Cu; corresponds to 10.8 mm Al equivalent

**Aperture angle**

28° / 28°

**DIAMENTOR chamber**

Option for installation of a measuring chamber to measure the surface dose product

**Ambient conditions (operation)**

Temperature range: +10°C to +40°C  
Rel. humidity: 20 % to 75 %, non-condensing  
Barometric pressure: 70 kPa to 106 kPa

**Transport conditions**

Temperature range: -40°C to +70°C  
Rel. humidity: 10 % to 100 %, non-condensing  
Barometric pressure: 50 kPa to 106 kPa

supplied at s.o.’s disposal wiring diagrams, spare part lists, description, adjustment-instructions and other documents, if desired. This documents are helpful for a competent technical person to repair parts, which are declared as repairable by the supplier.