ADC COMPACT CASSETTE

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Safety precautions

Observe great care whenever removing the image plate from the ADC Compact cassette. Refer to the cleaning procedure described further on in this manual.

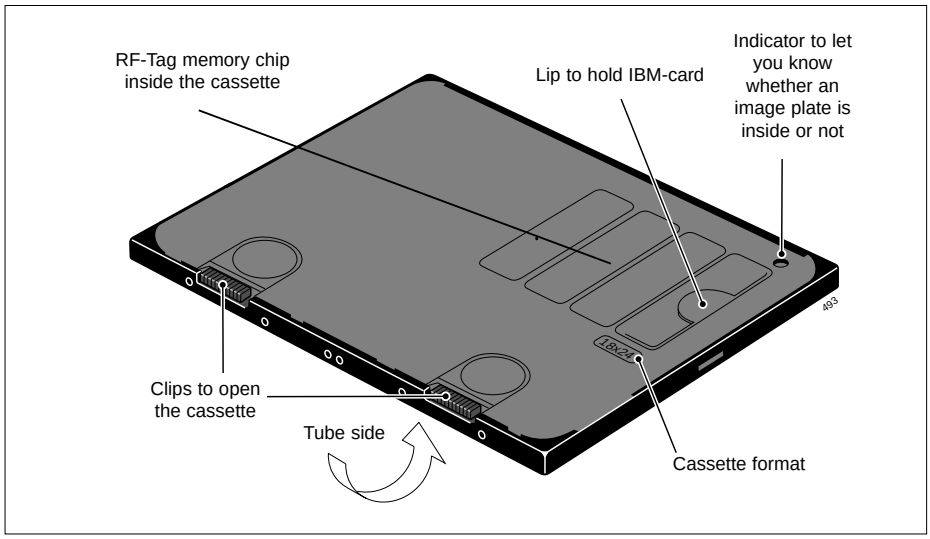
Warning ***Make sure that the automatic exposure control device is placed above the cassette, to prevent patients from receiving an overdose of X-rays. When it is located underneath the cassette, the backscatter protection (lead) contained in the red side of the cassette, retains a certain amount of X-rays. The dose measured by the cell will then be much lower than the dose actually given to the patient.***

Note The image plate causes a specific X-ray scattering. This influences the response of the exposure control device. To compensate for this, recalibration of the device for the use with ADC Compact cassettes could be necessary.

Description of the ADC Cassette

The ADC Compact cassette and plate are compatible with existing X-ray tables. The exposure equipment and routines do not have to be modified when switching from conventional to digital imaging. Although compatible with existing X-ray equipment, an ADC Compact cassette is quite different from a conventional cassette. The most important difference lies inside, in the image receptor.

Caution *ADC Compact cassettes and ADC 70 cassettes are not interchangeable. But the same image plates can be used for both.*



Embedded memory

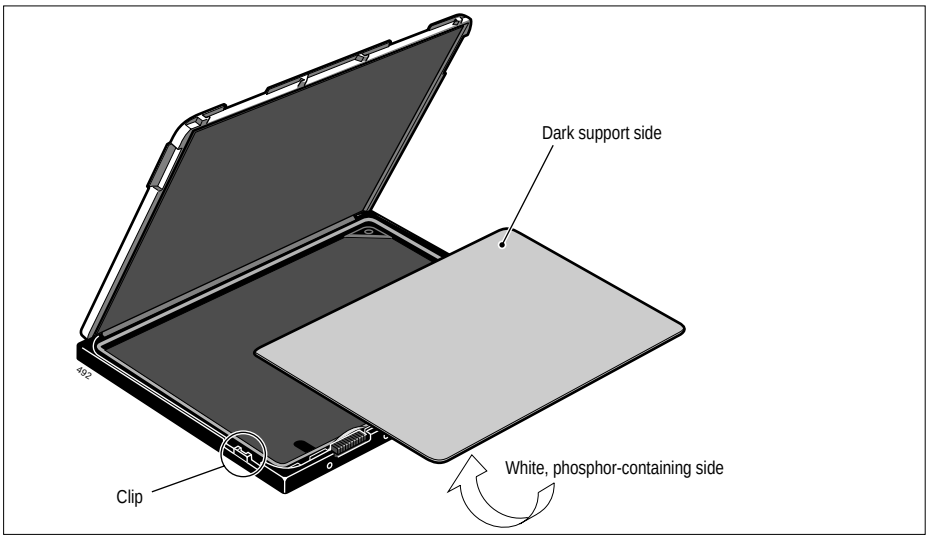
The main difference lies in the RF-tag memory chip that is permanently mounted in the cassette. Using the ADC Compact ID Software you can enter patient demographics and examination data into the memory chip. The identification of this data is performed by no-touch radiofrequency tagging via a built-in antenna card in the ADC Compact cassette.

Image plate

Another difference between an ADC Compact cassette and a conventional cassette is the X-ray sensitive element (image receptor). The latter is no longer a film, but an image plate that can be re-used thousands of times.

The way in which this image plate is placed into the cassette is of great importance. The side containing the white phosphor must be oriented towards the black tube side of the cassette. The dark support side is then oriented towards the red side of the cassette, as shown in the illustration below.

The ‘clips’ mounted on the cassette prevent the cassette from being opened by a conventional daylight system such as the Curix Capacity (Plus), so that even in hybrid conventional/digital departments the occurrence of errors is avoided.

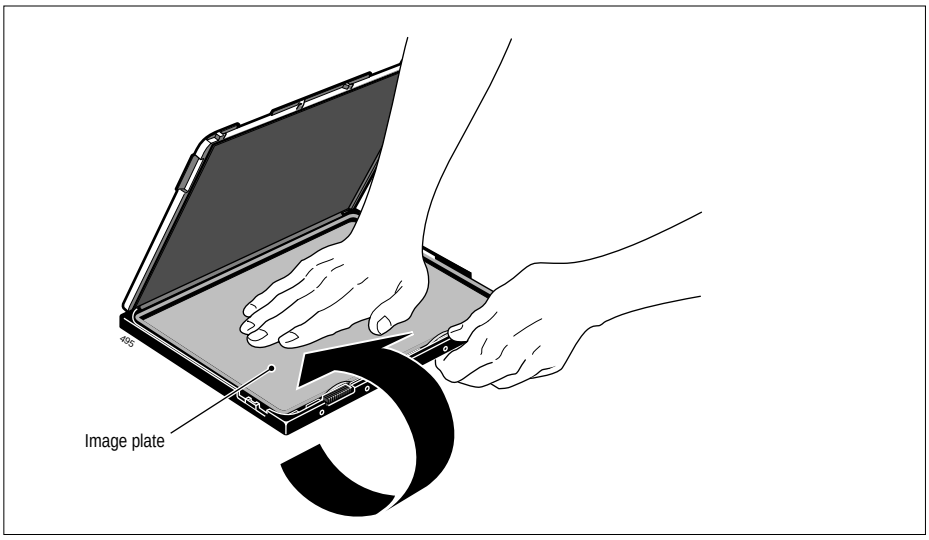


Cleaning the image plate

The inner lining of the ADC Compact cassette body is made of Bayer Makrolon polycarbonate. This ensures a high degree of protection against electrostatic charging and dust collection on the ADC image plates. Nonetheless, it is recommended to clean the image plates once a month using the following procedure:

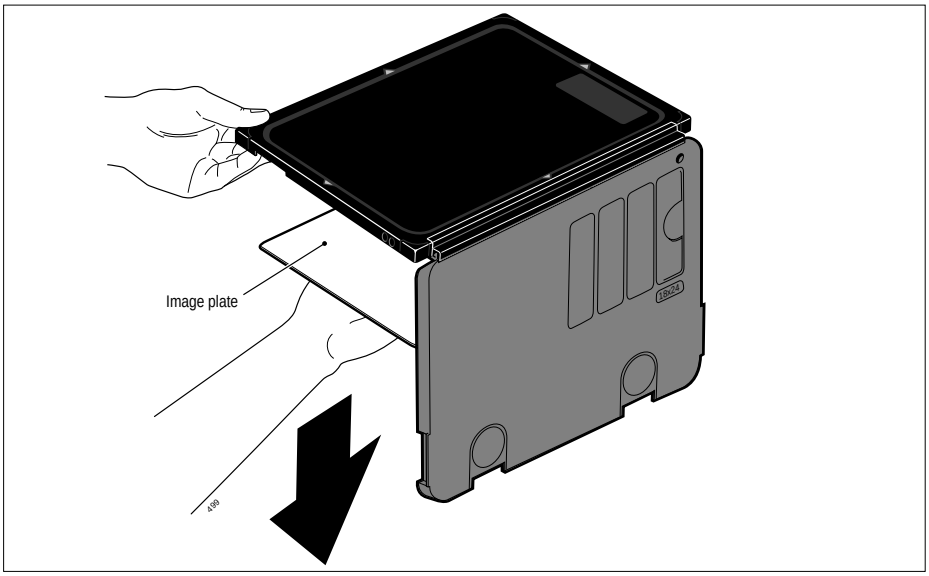
1 Open the cassette with the red side up.

2 Put your hand on the image plate with the cassette in a horizontal position. Make sure that you do not press on the plate.



3 Turn the cassette over, holding the image plate in position with your other hand.

4 Take away the cassette. The image plate remains lying on your hand.



5 When necessary, clean extreme contamination with Curix Screen Cleaner.

6 Moisten a cellulose cloth (non-fluffy) with the cleaning agent.

7 Rub the cleaner softly and evenly over the whole surface of the screen.

8 Leave the cassette with the clean screens open for approximately 10 minutes to enable the solvent to evaporate.

9 Reassemble the cassette.

Make sure that the white side of the image plate, containing the phosphor, is oriented towards the (black) tube side of the cassette.

Caution

Ensure that the image plate is within the flange on the inside of the cassette. If you put the image plate into the cassette differently, e.g. if the image plate lies partly in between the hinge of the cassette, it can be irreparably damaged.

Cleaning the cassettes

When necessary, you can clean the outside of the ADC cassettes with soft water and soap or a detergent solution, with Curix Screen Cleaner or with benzine. The inside should always be cleaned with Curix Screen Cleaner.

Caution *Never clean the cassette with ethyl alcohol, methyl alcohol or diethylic ether.*

Technical specifications of the ADC Compact Cassette

Sizes

- 35 x 43 cm (14 x 17")
- 35 x 35 cm (14 x 14")
- 24 x 30 cm
- 18 x 24 cm
- 8 x 10"
- 10 x 12"
- 21 x 43 cm (by partial scan of dedicated 35 x 43 cm cassettes)
- 35 x 43 cm HR high resolution cassette
- 35 x 35 cm HR high resolution cassette
- 15 x 30 cm dental cassette

Standards

- DIN 6832 part 1 & 2
- ANSI/NAPM IT 1.49-1995
- IEC 406 (draft 1995)

Weight

- 35 x 43 cm typical 1.6 kg

Material

Body	ABS (Acrylonitryl Butadiene Styrene)
Corners	Polyurethane Rubber (PUR)
Hinge	Polypropylene (PP)
Inner lining	Makrolon

Identification

- Memory chip (RF-tag card) embedded in the cassette

Backscatter protection

- 150 µ lead

Technical specifications of the image plate

Sizes

- 35 x 43 cm (14 x 17")
- 35 x 35 cm (14 x 14")
- 24 x 30 cm
- 18 x 24 cm
- 8 x 10"
- 10 x 12"
- 15 x 30 cm

Plate construction

Protective layer	Electron beam cured polymer
Phosphor	BaSrFBrI:Eu
Base	P.E.T.

Characteristics

Its luminescence spectrum is the typical Eu^{2+} -luminescence, which is at around 390 nm in lattices of the BaFBr-type. The top in the luminescence spectrum is shifted slighty to longer wavelengths due to the incorporation of iodide.

The stimulation spectrum is much broader than that of pure BaFBr and is shifted to longer wavelengths. This shift is caused in the first place by the partial replacement of Ba by Sr, and in the second place by the incorporation of iodide. Thanks to the red-shift of the stimulation spectrum, maximum stimulability is assured at 633 nm, the wavelength of the stimulating laser.

The Agfa phosphor has excellent dark decay characteristics. Two hours after exposure, approximately 80% of the energy stored upon exposure is still available. The image retention is greater than 50% up to 24 hours after irradiation.