

CR 30-X Plates and Cassettes

User manual



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Introduction

This chapter covers the following topics:

- [Introduction to this Manual](#)
- [Introduction to CR 30-X Plates and Cassettes](#)

Introduction to this Manual

This section covers the following topics:

- [Scope](#)
- [Warnings, Cautions, Instructions and Notes](#)
- [Disclaimer](#)
- [System Documentation](#)

Scope

This manual contains information for safe and effective operation of the CR 30-X Plates and Cassettes™.

Warnings, Cautions, Instructions and Notes

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



WARNING: Warnings are directions which, if they are not followed, can cause fatal or serious injuries to a user, engineer, patient or any other person or can lead to a mistreatment.



Caution: Cautions are directions which, if they are not followed, can cause damage to the equipment described in this manual or any other equipment or goods and can cause environmental pollution.



Instruction : This sign is used typically in combination with the warning sign when providing a specific instruction, which if followed exactly, should avoid the subject of the warning.



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

Disclaimer

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Note: In the United States, Federal Law stipulates that medical devices should only be sold to, distributed and used by or by order of a licensed physician.

System Documentation

The documentation shall be kept with the system for easy reference.

For information and safety notes on the CR 30-X System, refer to the CR 30-X System User Manual, document 2385.

Introduction to CR 30-X Plates and Cassettes

This section covers the following topics:

- [Intended User](#)
- [Product Complaints](#)
- [Environmental Protection](#)
- [Installation](#)
- [Safety Directions](#)

Intended User

This manual has been written for trained users of Agfa products and trained diagnostic X-Ray clinical personnel who have received proper training.

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

Before attempting to work with this equipment, the user must read, understand, note and strictly observe all warnings, cautions and safety markings on the equipment.

Product Complaints

Any health care professional (for example a customer or a user) who has any complaints or has experienced any dissatisfaction in the quality, durability, reliability, safety, effectiveness or performance of this product must notify Agfa.

If the device malfunctions and may have caused or contributed to a serious injury of a patient, Agfa must be notified immediately by telephone, fax or written correspondence to the following address:

Agfa Service Support - local support addresses and phone numbers listed on www.agfa.com

Agfa HealthCare N.V. - Septestraat 27 - 2640 Mortsel, Belgium.
Agfa HealthCare N.V. - Fax +32 3 444 7094.

Environmental Protection

CR Plate

Regulations about waste disposal may differ from one country to another. Please consult local regulations on the subject matter.

At the end of its life cycle, the CR Plate is considered as industrial waste in most countries.

Consequently it is not allowed to dispose of it as household waste. We recommend to have it hauled away by a licensed company.

When the CR Plate is disposed of through incineration, the nature of the combustion products is dependent on the physical characteristics of the burning process and on the degree of combustion, whereby different gases can be generated, such as e.g. water vapor, carbon dioxide, carbon monoxide and small concentrations of organic and inorganic degradation products.

CR Cassette

The cassette shall not be treated as household waste.

For more detailed information about take-back and proper recycling of this product, please contact your local sales representative.

Installation

The CR 30-X tray and image plate have been factory predefined. No further action is required from customer side to use them with the CR 30-X.

Safety Directions

General Safety Instructions

CR plates and cassettes will not cause any special health or safety hazard, if they are used as intended.

When working with the automatic exposure control device, take into account the following two warnings and read the instruction:

- Overexposure



WARNING: Automatic Exposure Control device may cause overexposure if they are positioned underneath the cassette.

The backscatter protection (lead) contained in the grey 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.



Instruction : Make sure that the automatic exposure control device is placed above the cassette.

- Wrong response



WARNING: Automatic Exposure Control device may give wrong response.

The image plate causes a specific X-ray scattering. This influences the response of the exposure control device.



Instruction : Recalibrate the X-Ray device for use with CR 30-X cassettes to compensate for this effect.

Fire Hazard and Extinguishing Media

The screen base is made of polyethylene terephthalate and meets the "Safety Film" specifications as described in ISO 18906-2000. Safety film passes the ignition time test when the ignition time is longer than or equals 10 minutes. It passes the burning time test when the burning time is longer than 45 seconds for a film thickness larger than or equal to 0.08 mm or when the burning time is longer than 30 seconds for a film thickness smaller than 0.08 mm. The nature of the combustion products depends on the physical characteristics of the burning process and on the degree of combustion, whereby different gases can be generated, such as e.g. water vapor, carbon dioxide, carbon monoxide and small concentrations of organic and inorganic degradation products.

Fire extinguishing media:

- water spray,
- carbon dioxide,
- extinguishing powder,
- foam.

CR 30-X Plates and Cassettes Description

This chapter covers the following topics:

- [Description](#)
- [Initialization](#)
- [Precautionary Measures](#)
- [Specifications](#)

Description

Description of the CR 30-X Cassettes

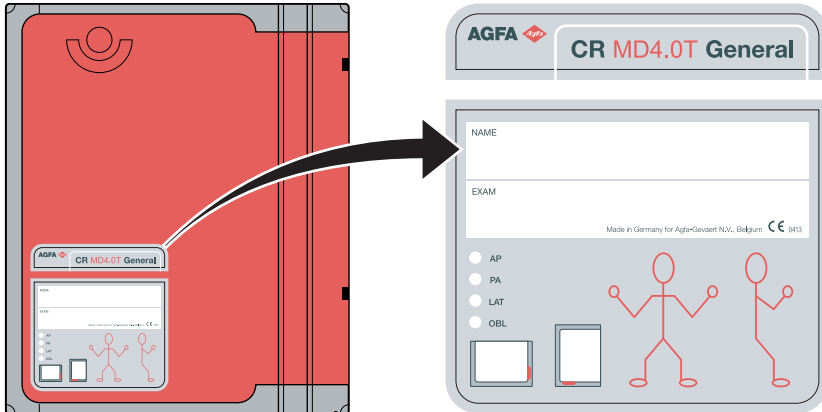
The labeling and layout of the cassettes for the CR 30-X are illustrated below. The tube side is black.

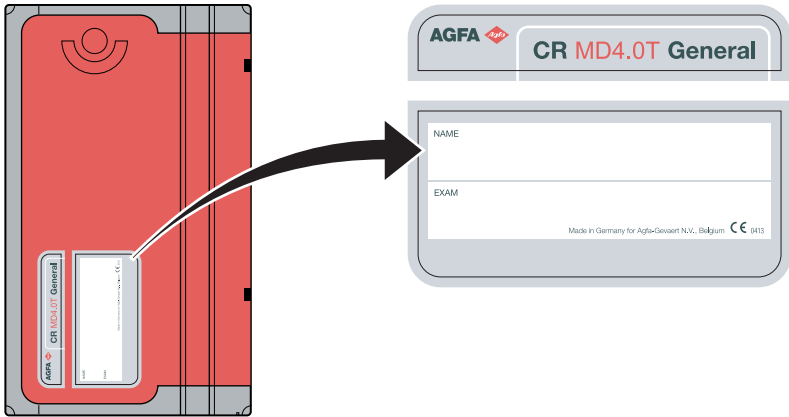
CR General cassette

- Label:

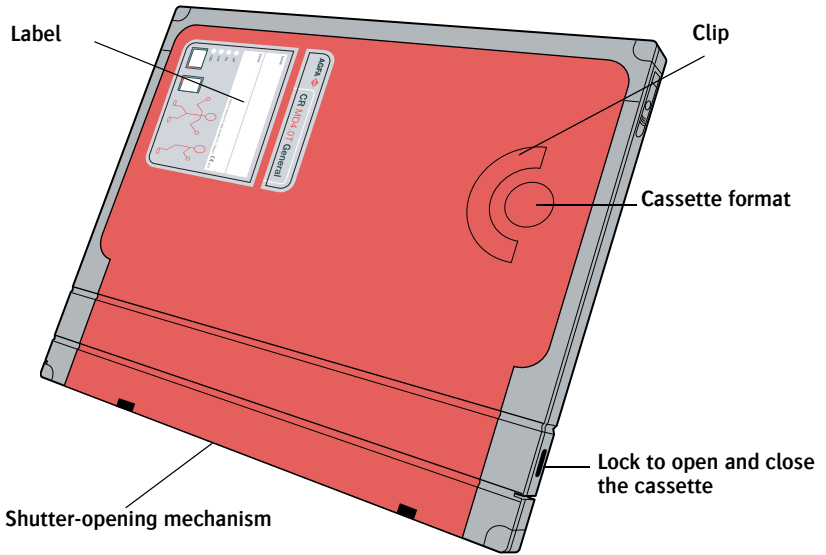


Note: The label on the cassettes illustrated below serves as an example. The name of the label “CR MD4.0T General” is subject to change.





- Layout:



Specific applications: CR Full Leg Full Spine (FLFS) cassette

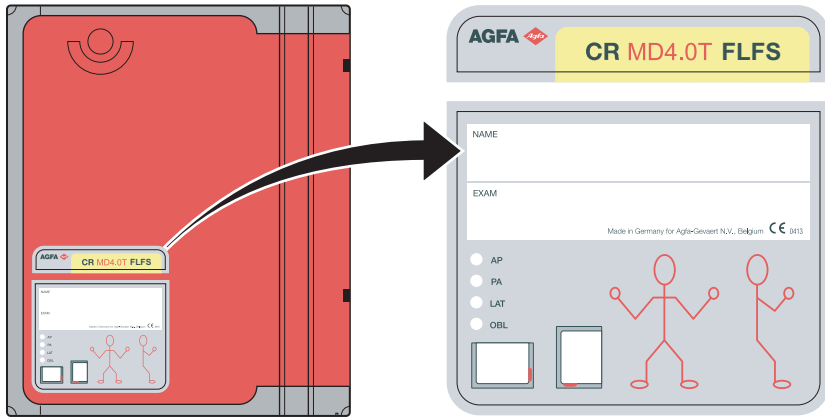
The following paragraphs only give a general description of the labeling, layout and limitations of the CR FLFS cassette.

For more specific information and instructions on the FLFS application consult the CR Full Leg Full Spine option for NX Workstations User Manual.

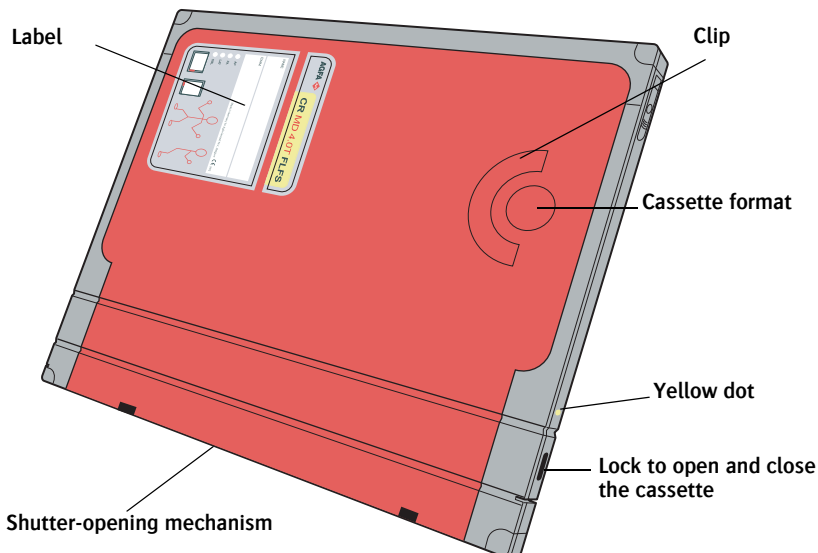
- Label:



Note: The label on the cassettes illustrated below serves as an example. The name of the label "CR MD4.0T FLFS" is subject to change.



- Layout:



CR FLFS cassettes are specifically designed for the Full Leg Full Spine application and are easily distinguishable from CR General cassettes by its yellow labeling and yellow dots.



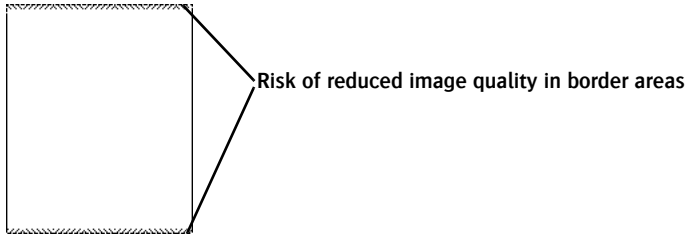
Note: In the CR 30-X you cannot use other than the above described cassettes.

- Limitations

The use of CR General cassettes for Full Leg or Full Spine imaging will result in a white line in the stitching zone, in which there is no image information.

CR FLFS cassettes can be used for other than Full Leg or Full Spine imaging, however with a limitation in the border zone. Due to the presence of the reduced backscatter protection foil at the 35 cm borders of the cassette, there is a risk for reduced image quality in this border area (of maximum 1 cm) if

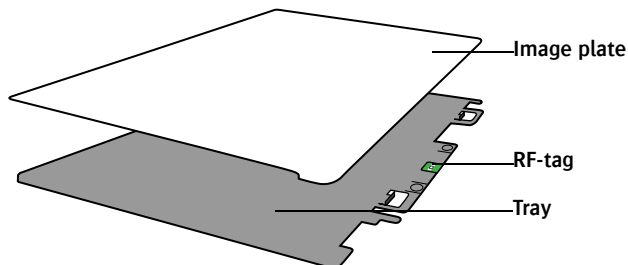
this zone was exposed and in case there was an influence of backscattered radiation.



Description of the CR 30-X Tray and Image Plate

The tray is part of the image plate. The tray supports the image plate and carries the RF tag.

Layout of the tray and image plate:



Initialization

Initializing Cassette, Tray and Image Plate

For the CR 30-X Plates and Cassettes, the image plate code has been factory embedded in the memory chip (RF-tag) of the tray. This means that the tray and the image plate should always be kept together. A tray and image plate set can be used in any CR 30-X cassette. This feature makes initialization of the cassette redundant.

Replacement Image Plates

If you have received tray and image plate sets separately as replacement, always keep the image plate together with the supplied tray.

Precautionary Measures

First Use and Normal Operation

- When using new CR plates, you need to manually erase them twice before use.
- When CR plates have not been used for 48 hours, you equally need to erase them manually.
- CR plates and cassettes should only be used with CR equipment.
- No more than 110 kg is allowed as patient weight when using CR30-X cassettes.

Transport

- Protect the plates from high temperatures during transport - max. 43°C (110°F).
- Take the precautions necessary to ensure that the plates remain protected from impact.

Storage

- Temperature and humidity levels:
Packaged..... : -25°C to 55°C (-13°F to 131°F)
Not packaged Temperature : 15°C to 30°C (59°F to 86°F)
..... Relative humidity : 15 to 80% (recommended 30 to 60%)
- To avoid any deformation, always store the image plates horizontally on a flat surface.
- Do not place any excessive loads on the image plate and/or cassette.
- Store a maximum of 5 image plates and/or cassettes, one on top of the other.
- Avoid UV-radiation or direct sunlight on the image plate and/or cassettes.

Handling the Tray and Image Plate

The necessary precautions must be taken when handling the tray and image plate to avoid scratches or damage. Any damage to the image plate, of whatever nature, will be visible in the image.

Cleaning

Cleaning the Tray and Image Plate



Note: Please make sure that the tray and image plate set always goes into the same cassette when cleaning. It is important that an image plate is not put together with a tray initialized for another image plate.

When to clean the tray and image plate?

The inner lining of the CR 30-X cassette is made of fleece. This ensures a high degree of protection against electrostatic charging and dust collection on the image plates. Nonetheless it is recommended to clean the tray/image plate

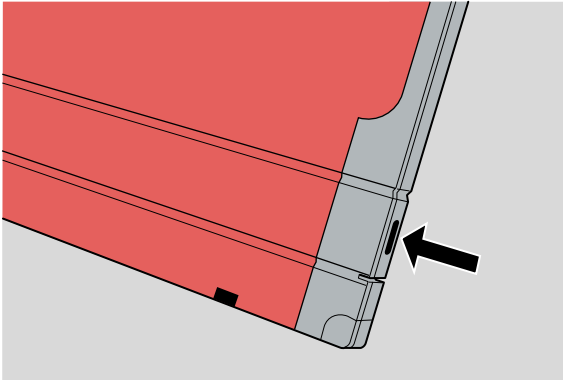
- At least once every month or whenever there is doubt about particles visible on the X ray images.
- More frequent cleaning is also required in case of excessive dust or under very dry conditions. (The screen cleaner contains antistatic agents which reduce buildup of static charges and dust collection.)

Permitted cleaning products?

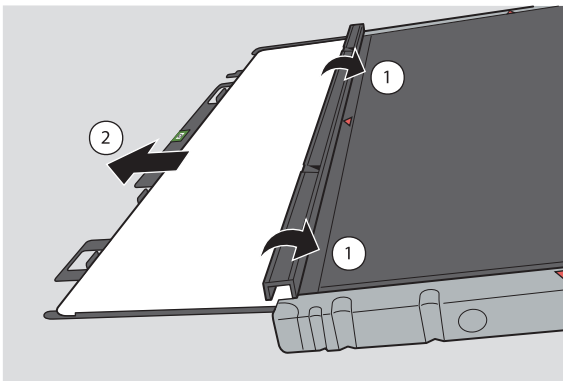
- Use only AGFA CR Phosphor Plate Cleaner and a soft lint-free cellulose cloth to clean the image plate.
- Use only a dry cloth or blow away possible dust with compressed air to clean the tray.

How to clean the tray and image plate?

- 1 Insert a key or a pen into the cassette lock to open the shutter.

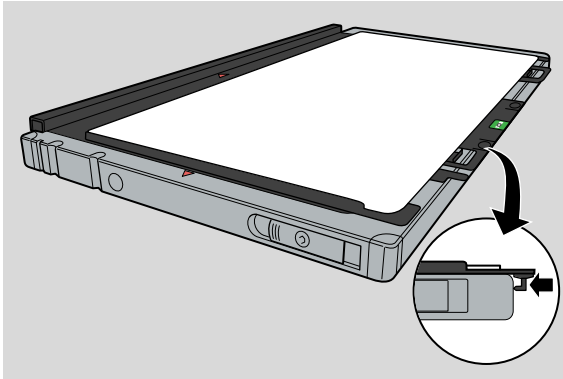


- 2 Remove the key or the pen.
- 3 Turn the cassette around, so that the black tube side is above.
- 4 Hold back the shutter with both thumbs and let the black tray and image plate slide out carefully onto the table.



- 5 Put the black tray with the image plate onto the cassette, as shown in the figure below.

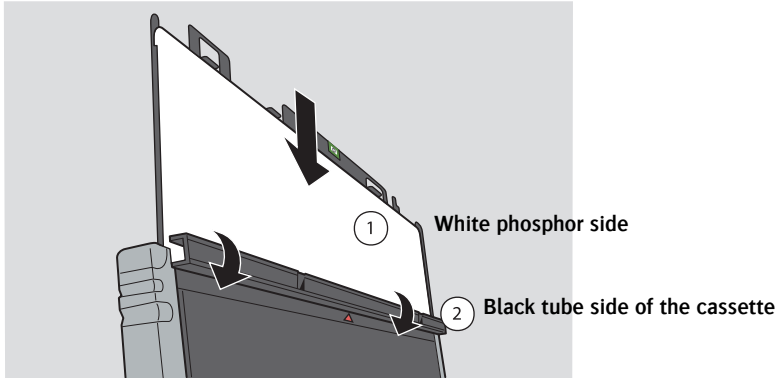
The tray has 2 little hooks. Put the tray onto the cassette in such a way that the hooks reach over the border of the cassette. This to avoid a bending of the tray and image plate.



- 6 Clean the image plate and the tray as follows:
- Moisten the cloth with cleaner and wipe the **image plate surface** softly and evenly (phosphorous side and rear side).
 - Leave the **image plate surface** to dry for about 10 minutes to allow the solvents to evaporate.
 - Use only a dry cloth or blow away possible dust with compressed air (canned air), to clean the **tray** thoroughly. (DO NOT USE A SCREEN CLEANER TO CLEAN THE TRAY.)
 - Once the image plate surface is dry (after about 10 minutes), check once again for particles of material and other impurities before placing the tray and image plate set into the cassette.

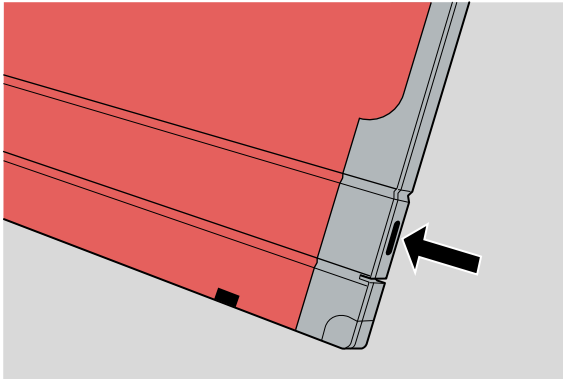
- 7 Put the tray with the image plate back into the cassette.

Verify that the white phosphor side is oriented to the black tube side of the cassette and that the shutter does not scratch the image plate.



- 8 When the black tray with the image plate is completely inside the cassette, close the shutter.

To close the shutter easily, insert a key or a pen into the cassette lock while closing the shutter. Once closed, remove the key or the pen.



Cleaning the Cassette

Clean the cassette thoroughly. Use only a dry cloth or blow away possible dust with compressed air. (DO NOT USE A SCREEN CLEANER TO CLEAN THE TRAY.)

When necessary, you can clean the outside of the CR MD4.0T cassettes, preferably only with a wet cloth (water, soap). For 'heavy' spots use Curix Screen Cleaner. Isopropanol is allowed as well.

All disinfectors carry the risk that cassettes can be damaged.



WARNING: If Curix Screen Cleaner or isopropanol are used, do not pour them direct on the cassette. First moisten a cloth with cleaner and wipe off the cassette.



Note: If a cassette may get into contact with body fluids, protect the cassette with a plastic envelop.

Specifications

Technical Specifications of the CR 30-X Cassette

Sizes

Corresponding with the following IP-formats:

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

Standards

- ISO 4090

Weight

- 35 x 43 typical 1.6 kg
- 35 x 35 typical 1.3 kg
- 24 x 30 typical 0.8 kg
- 18 x 24 typical 0.5 kg
- 15 x 30 typical 0.6 kg

Material

- | | |
|-----------------|--------------------------------------|
| • Body and Tray | Acrylonitril Butadiene Styrene (ABS) |
| • Corners | TPE |
| • Shutter | Polypropylene (PP) |
| • Inner lining | Fleece |

Identification

- Memory chip (RF-tag) embedded in the tray.



Note: The tray belongs to the image plate.

Backscatter Protection

- 150 μ lead

Environmental Requirements

- Temperature: recommended 20-25 °C (allowed: 15-30 °C)
- Relative humidity: recommended 30-60 % (allowed: 15-80 %)
- Avoid UV radiation or direct sunlight on the cassettes

Technical Specifications of the CR 30-X Image Plate

Plate Construction

- **Top-coat:**
Very durable poly-urethane layer applied via screen-printing and cross-linked by EB exposure.
- **Phosphor layer:**
(Ba,Sr)FBr_{0.85}I_{0.15}: Eu storage phosphor embedded in very flexible polymer for excellent mechanical properties.
- **Substrate:**
Super white PET plastic film covered with anti-halo dye to combine high sensitivity and high resolution.



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