
Operator mode

The Operator mode groups all basic functions that are intended for radiographers without special technical skills:

- Producing diagnostic usable hardcopies;
- Loading consumables;
- Ensuring normal operation of the printer.

The Operator mode is accessible by the keypad and by browser via a remote PC (password protected).

All functions of the Operator mode are described in both User and Reference manuals. Refer to the chapter [“Basic operation \(Operator mode\)”](#) on page 65.

Key-operator mode

The Key-operator mode groups advanced functions that are intended for technically skilled operators such as X-ray operators, network managers and service and hospital technicians.

The Key-operator mode is accessible by the keypad and by browser via a remote PC (password protected).

The Key-operator mode is menu-driven. The Key-operator functions are described in the Drystar AXYS Reference manual only. Refer to the chapter [“Advanced operation \(Key-operator mode\)”](#) on page 85.

Service mode

The Service mode functions are reserved for trained Service personnel. The Service mode is accessible by browser via a remote PC (password protected). Limited service actions (password protected) are also accessible by the keypad.

Specialist mode

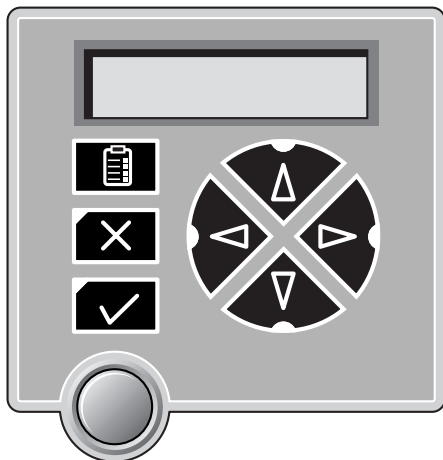
The specialist mode functions are reserved for trained service personnel of the Agfa Customer Support Center. The specialist mode is password protected and is only accessible by browser via a remote PC.

Administrator mode (also known as Security)

The Administrator mode functions are reserved for the System Administrator. The Administrator mode is password protected and is only accessible by browser via a remote PC.

Working with the keypad

The keypad is located below the display panel.



The Drystar AXYS keypad features the following keys:





	Key-operator key	To access the advanced functions of the key-operator mode. Refer to the chapter “Advanced operation (Key-operator mode)” on page 85.
	Escape key	To quit the current function or exit a menu without saving modifications.
	Confirm key	(In key-operator mode) <ul style="list-style-type: none"> To select a menu. To accept an entry in a menu
	Up key	<ul style="list-style-type: none"> To move the cursor to the previous entry field. To scroll upwards To increment the number in a(n) (alpha) numerical entry field.

Table 6: Keypad keys




	Down key	<ul style="list-style-type: none"> • To move the cursor to the next entry field. • To scroll downwards. • To decrement the number in a(n) (alpha) numerical entry field.
	Left key	<ul style="list-style-type: none"> • To scroll backwards through multiple choices within a field. • To move the entry position in a(n) (alpha) numerical entry field from right to left. • To toggle between values in a field.
	Right key	<ul style="list-style-type: none"> • To scroll forwards through multiple choices within a field. • To move the entry position in a(n) (alpha) numerical entry field from left to right. • To toggle between values in a field.

Table 6: Keypad keys



Note: All keys (except the key-operator key) have an LED that is on when the key is valid in a certain situation.

Note: You can press and hold down an arrow key to scroll quickly through a list or a menu.

The display

The Drystar AXYS control panel has a backlit LCD display. We distinguish two panel types depending on the selected language:

- a backlit LCD display with 4 lines for Western languages (e.g. Dutch, French, Portuguese, Swedish,...).

```
Please wait  
self test  
proceeding
```

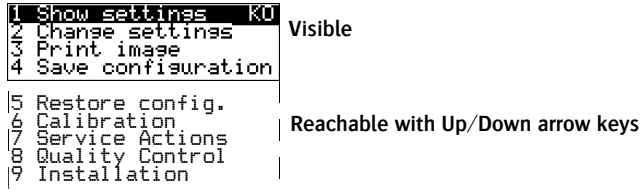
- a backlit LCD display with 2 lines for all other languages (e.g. Greek, Chinese, Korean, Polish,...).

```
Autotest:  
CZEKAJ...
```

Whether a display is translated or not depends on the operating mode.

General display features

The figure below shows how the display is illustrated in this manual:



The visible display lines are indicated in the upper zone. The other possible lines are shown in the lower zone and can be reached by scrolling using the Up/Down arrow keys on the Keypad.

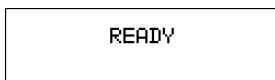
In the upper right corner, the current printer status is displayed:

- In Operator mode, two characters display the print queue status. Refer to [“Managing the print queue”](#) on page 67.
- In Key-operator mode, two characters are displayed in reverse video to indicate the current menu- or submenu level (e.g. ‘KO’ for Key-operator main level).
- A warning, an error or a maintenance request is displayed respectively with the character W, E and M.

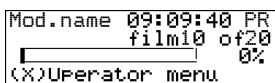
Operator mode

In operator mode, appropriate information is displayed in accordance with the status of the printer.

The operator basic screen looks as follows, indicating that the Drystar AXYS is ready for operation and that no job is currently being executed.



When the printer is busy with at least one print job, the print queue screen is displayed:



The progress indicator keeps the user informed of the progress of a process (e.g., calculation of a bitmap, printing of a film). The line is gradually filled from left to right, from 0% to 100% as the process proceeds.

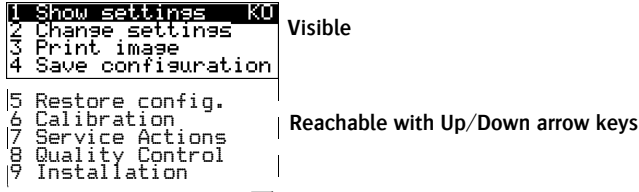


Note: On the print queue screen the modality name defined during installation will be used to refer to the corresponding modality. In case a nickname (daily used name) has been defined during installation, this nickname will be used.

Refer to [“Managing the print queue”](#) on page 67

Key-operator mode

In key-operator mode, operation is menu driven. The menu displays the key-operator functions.



The display shows only four lines. In the above figure, they are indicated in the upper zone. The other possible lines are shown in the lower area and can be reached by scrolling using the Up/Down arrow keys on the Keypad.

The active keys are indicated by their respective LEDs.

Data entry

When entering numerical or alphanumeric data, always adhere to the following principles:

- Only (alpha) numerical data can be entered.
- During data entry, the field is displayed in reverse mode.
- Increment the number in a(n) (alpha) numerical entry field by pressing the Up key. Transition from 9 to 0 of one figure will also increment the next figure to the left, respecting the valid limits of the range.
- Decrement the number in a(n) (alpha) numerical entry field by pressing the Down key. Transition from 0 to 9 of one figure will also decrement the next figure to the left, respecting the valid limits of the range.
- Move the entry position in a(n) (alpha) numerical entry field from right to left by pressing the Left key.
- Move the entry position in a(n) (alpha) numerical entry field from left to right by pressing the Right key.
- Press and hold down a key to repeat arrow key actions.
- To accept an entry in a menu, press the Confirm key.

- A short beep acknowledges and terminates the entry.
- The Drystar AXYS will sound a long beep if you press a key that is not to be used at that moment.

Audio signals

The Drystar AXYS gives status information via beeps. The length of the beep indicates the response of the system to a key command.

- A short beep means that Drystar AXYS has accepted the key command and is starting the operation.
- A long beep means that you have pressed a non-active key or that the Drystar AXYS has rejected the key command.



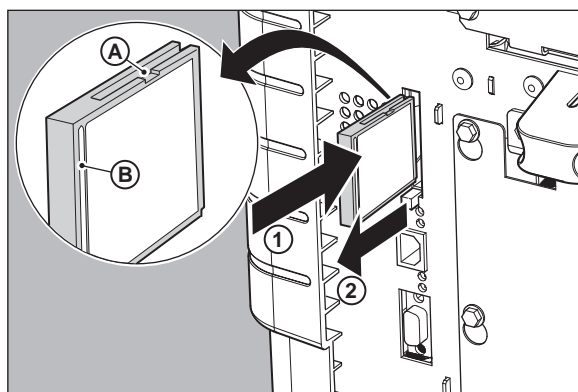
Note: Certain conditions can cause an interval beep. An interval beep accompanies an error or warning message. Refer to “[Troubleshooting checklist](#)” on page 127.

Working with Compact flash cards (CF-card)

The Drystar AXYS is equipped with an external CF-card slot, which is located at the rear side.

To insert a CF-card in the Drystar AXYS:

- 1 Hold the CF-card vertically with the connector holes in front of the slot and with the flat surface pointing to the left. In that case the cut-away (a) and the rim (b) are pointing to the right.



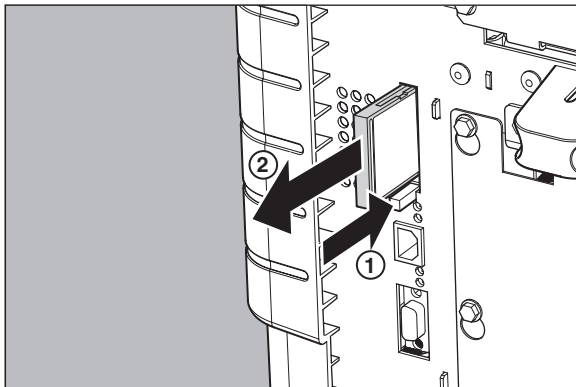
- 2 Insert the CF-card gently into the slot and push it until the unlocking lever underneath the slot comes out.



Note: If you cannot push the CF-card completely into its position, this means that you have to turn it 180 degrees (while keeping the connector holes faced to the slot).

To remove a CF-card from the Drystar AXYS slot:

- 1 Push the unlocking lever underneath the CF-card slot.
The CF-card is pushed slightly outward.



- 2 Remove the CF-card gently from the slot.

Cooling down the Drystar AXYS

If owing to certain circumstances (e.g. extensive printing), the temperature rises too much, the Drystar AXYS will cool down automatically. The cooling down message will appear on the display during the cooling down process.

COOLING DOWN
Please wait

Switching off the Drystar AXYS

When you want to switch off the printer, the printer will first finish his current print job. Queued print jobs will be stored on the hard disk and will be resumed next time the printer is switched on.

Procedure:

- 1 Press the Power/Reset button to switch off the Drystar AXYS.



If the printer is printing, it will finish that print job:

```
Power off after
finishing images in
Progress.
Please wait
```

When the printer is ready, it shuts down immediately:

```
Power off initiated
Please wait
```


3 Basic operation (Operator mode)

This chapter will inform on how to manage the print queue, how to print films with priority and how to load new films.

- [Overview of operator functions](#)
- [Managing the print queue](#)
- [Pausing the print queue](#)
- [Viewing the film count info](#)
- [Viewing the printer status](#)
- [Deleting print jobs](#)
- [About Drystar AXYS consumables](#)
- [Loading films](#)

Overview of operator functions

This section focuses on the basic operating principles of the Drystar AXYS. After reading this chapter, the operator should be able to produce diagnostic usable hardcopies. No special technical skills are required.

All basic operator functions can be activated directly by pressing a single key on the keypad.

Function / Task	Description
“Managing the print queue” on page 67	Jobs that have been received are put in a print queue, waiting to be printed.
“Pausing the print queue” on page 69	To pause the print queue. The printer will finish the current print job, but will not start the next print job.
“Viewing the film count info” on page 70	To view the number of films left in the trays.
“Viewing the printer status” on page 71	To view the current events.
“Deleting print jobs” on page 72	To remove a print job from the print queue.
“Loading films” on page 76	Instructions for loading new films on the printer.

Managing the print queue

Checking the print queue

You can always check the status of the print jobs on a connected remote access PC via the operator menu.



Note: Keep in mind that one print job can hold several films to be printed. In accordance with the acquisition modality used and with the actual settings, films can be grouped in a folder to be submitted as one print job for the Drystar AXYS. Refer to the User manual of the acquisition modality for more information.

If jobs have been transmitted from the network to the Drystar AXYS, they are put in the print queue on a first in, first out schedule. New jobs that are added to the queue get the 'waiting' status.

As soon as the last film of a job is ejected in the output tray, the next job that has been calculated will be put in printing status.

The local print queue screen

When the Drystar AXYS is printing, the local display shows the ‘print’ screen:

```
Mod.name 09:09:40 PR
          film10 of 20
          ██████████ 0%
(XX)Operator menu
```

- The screen shows information on the job that is currently being printed: the modality name, the time of receipt of the job and the job status (refer to the table below).
- The **progress indicator** keeps the user informed of the progress of a process (e.g., calculation of a bitmap, printing of a film). The line is gradually filled from left to right, from 0% to 100% as the process proceeds.
- The last line gives access to the operator menu to pause the print queue, to view the film count info or to view the printer status. Refer to [“Pausing the print queue”](#) on page 69 to [“Viewing the film count info”](#) on page 70 or to [“Viewing the printer status”](#) on page 71.

A description of the possible status of the jobs is listed in the table below:

Status		Description
PR	Printing	Printing of this job is in progress.
CA	Calculating	The necessary calculations are already being made before printing of the job can be started.
WA	Waiting	Jobs are queued in the printer memory.



Note: On the print screen the modality name defined during installation will be used to refer to the corresponding modality. If there is also a nickname (daily used name) defined during installation, the nickname is used.

Pausing the print queue

When the Drystar AXYS is printing, you can always pause the print queue by entering the operator menu.

During a print job, the 'print' screen is displayed:

```
Mod.name 09:09:40 PR
          film10 o2 0
          [ ] 0%
(%)Operator menu.
```

To pause the print queue, proceed as follows:

- 1 Press the Escape key to enter the operator menu.

The 'Operator menu' screen appears:

```
OPERATOR MENU
1. Pause print queue
2. Film count info
3. Printer status
```

- 2 On the Operator menu press the Confirm key to select 'Pause print queue'.
- 3 If the printer is printing, it will first finish its current print job.

```
Finishing current
print-job.
please wait.
Do NOT open the tray
```

- 4 When the printer is ready, the print queue is paused.

```
PRINTER PAUSED
Press / to resume
printing
```

- 5 To resume printing, press the Confirm key.

Viewing the film count info

When the Drystar AXYS is printing, you can always view the number of films left in the trays by entering the operator menu.



WARNING: Do not open the input trays to view the number of loaded films while the Drystar AXYS is printing, but follow the procedure below:

During a print job, the 'print' screen is displayed:

```
Mod.name 09:09:40 PR
          film10 020
          _____ 0%
(XX)Operator menu
```

To view the number of loaded films in the trays, proceed as follows:

- 1 Press the Escape key to enter the operator menu.

The 'Operator menu' screen appears:

```
OPERATOR MENU
1 Pause print queue
2 Film count info
3 Printer status
```

- 2 Press the Down key once, followed by the Confirm key to select 'Film count info'.

The following screen appears:

```
Film in UPPER tray:
|_____ 0%
Film in LOWER tray:
|_____ 0%
```

The progress bar indicates the evolutions of the film usage in an input tray. The bar is divided into 10 parts, each part represents approximately 10% of the total films of a film pack. The last part of the bar will disappear when more than 80% of a film pack has been printed.

- 3 Press the Confirm key to return to the print screen.



Note: When a film job cannot be done because the tray to which the job is assigned is empty, then the printer will check if the films in the other tray can be used for this and other print jobs in the print queue. The printer will skip the print jobs that cannot be done and will resume them later.

Viewing the printer status

When the Drystar AXYS is printing, you can always view the printer status by entering the operator menu.

During a print job, the 'print' screen is displayed:

```
Mod.name 09:09:40 PR
          film10 of 20
          [ ] 0%
(%)Operator menu
```

To view the printer status, proceed as follows:

- 1 Press the Escape key to enter the operator menu.

The 'Operator menu' screen appears:

```
OPERATOR MENU
1. Pause print queue
2. Film count info
3. Printer status
```

- 2 Press the Down key twice, followed by the Confirm key to select 'Printer status'.

The following screen appears:

```
CURRENT EVENTS:
```

The screen informs you, by means of short event descriptions, about current events. There is only one event per line. An event could be e.g. a current film jams, an empty tray,...

- 3 Press the Confirm key to return to the print screen.

Deleting print jobs

When the Drystar AXYS is printing, you can always delete print jobs by entering the operator menu.

During a print job, the 'print' screen is displayed:

```
Mod.name 09:09:40 PR
          film10 of 20
          ██████████ 0%
(XX)Operator menu
```

To delete a print job, proceed as follows:

- 1 Press the Escape key to enter the operator menu.

The 'Operator menu' screen appears:

```
OPERATOR MENU
1 Pause Print Queue
2 Film count info
3 Printer status
4 Delete jobs
```

- 2 Press the Down key three times, followed by the Confirm key to select 'Delete jobs'.

A screen appears where you can choose between the option 'All jobs' or one of the jobs in the print queue:



Note: Only the print queue jobs with a status different from printing (PR) or calculating (CA) will be shown.

- 3 Do one of the following:

- If you want to delete all jobs at once, press the up/down arrow keys to select 'All jobs', followed by the Confirm key. Proceed with the next step.
- If you only want to delete a specific job in the print queue, press the up/down arrow keys to select the desired print job, followed by the Confirm key. Proceed with the next step.

- 4 A screen appears in which you need to confirm your delete request.

Press the Confirm key (YES) to confirm your choice, or the Escape key (NO) to quit the procedure without any changes.

About Drystar AXYS consumables

The Drystar AXYS can handle blue-transparent DT 2 B, clear-transparent DT 2 C (both for general radiography) and optionally the blue-transparent DT 2 Mammo (for the mammography application) films.

Available film formats for general radiography applications are 8x10", 10x12", 11x14", 14x14", and 14x17". Available film formats for the mammography application are 8x10", 10x12" and 11x14".

Both input trays can use all film formats.

When a new film pack is loaded, the Film Identification tag is read and the printer settings are automatically adjusted.

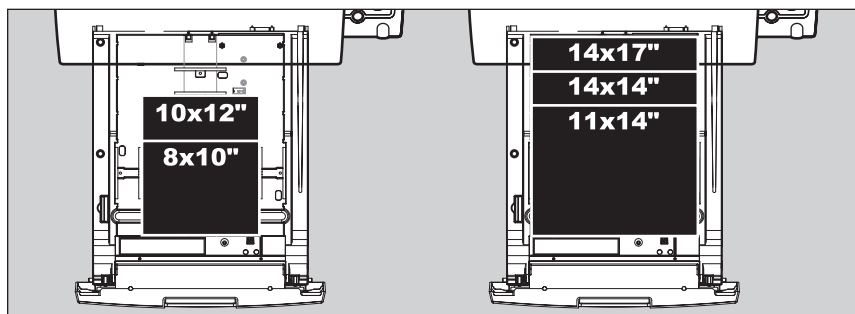
Labeling the input trays

The following film types can be used:

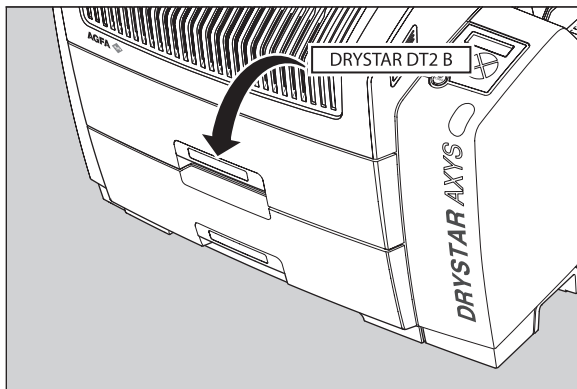
Film type	Film size
Drystar DT 2 B	8x10", 10x12", 11x14", 14x14", and 14x17"
Drystar DT 2 C	8x10", 10x12", 11x14", 14x14", and 14x17"
Drystar DT 2 Mammo (optional)	8x10", 10x12" and 11x14"



Note: If you want to change the film format, the tray configuration must be modified. Refer to ["Changing the film format of the trays"](#) on page 32 for more information.



Appropriate labels have been applied on the input tray(s) by the service personnel at installation of the printer, indicating the type of new film to be loaded when the tray is empty.



Loading films

This section describes how to load the Drystar AXYS with appropriate Drystar DT 2B and Drystar DT 2C films.

The Drystar AXYS can be loaded with 8x10", 10x12", 11x14", 14x14" and 14x17" films.



Note: The Drystar AXYS can be loaded with new films in full daylight. Loading films is easy and can be done very quickly. Follow the procedures as described in this section.



Note: If you want to change the film format, the tray configuration must be modified. Refer to "Changing the film format of the trays" on page 32 for more information.

The Drystar AXYS will inform you in several ways when a film tray is empty:

- an audible signal,
- the status indicator LED is blinking (red color),
- the display screen shows a message informing you that the input tray is empty.

The film loading procedure is identical for both input trays. In the examples below, we will assume that the lower input tray is to be loaded.



Note: The procedure is slightly different, depending on the fact whether the Drystar AXYS is printing/calculating or in the ready state.



Note: When the printer is in the ready state, go to "When the Drystar AXYS is in the ready state and an input tray is empty" on page 78.



WARNING: Make sure not to load more than one film pack in an input tray. Loading more than one film pack in the input tray may damage the Drystar AXYS.

When the Drystar AXYS is printing or calculating and an input tray is empty

Procedure

- 1 The display shows the following message:

```

EMPTY LOWER TRAY
Do NOT open the tray
(✓)Loading procedure
(✗)Operator menu
  
```

- 2 Press the Confirm key to start the loading procedure.

The following screen appears when the printer is still printing:

```

LOADING PROCEDURE
INITIATED. Finishing
current print-jobs.
Do NOT open the tray
  
```

- 3 Wait while the printer finishes printing any current jobs.

When the film path is cleared, the following screen appears automatically:

```

      EMPTY
LOWER INPUT TRAY | Blinking
OK to open the tray
  
```

- 4 Open the lower input tray.
- 5 Load a new film pack.

Refer to [“Film loading procedure”](#) on page 79.

When the Drystar AXYS is in the ready state and an input tray is empty

Procedure:

- 1 The display shows the following message:

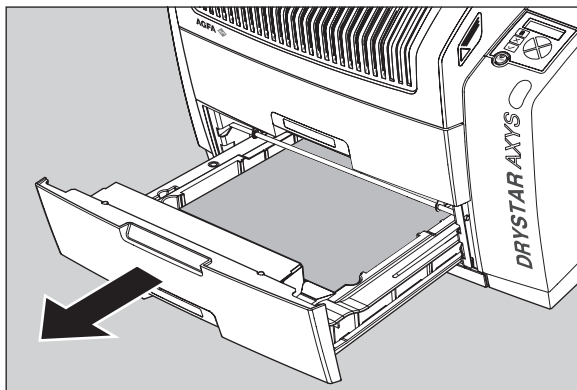


- 2 Open the lower input tray.
- 3 Load a new film pack.
Refer to [“Film loading procedure”](#) on page 79.

Film loading procedure

Procedure

- 1 Open the empty input tray.



WARNING: To avoid possible film jams, make sure to open input tray all the way.

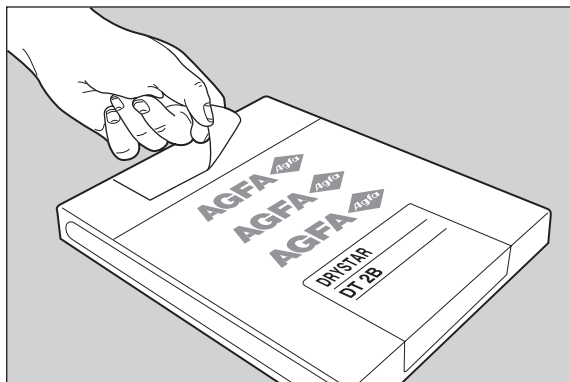
- 2 The printer is ready to start the loading procedure when the following message appears:

```
-Remove old cover  
sheet from tray  
-Load new film rack  
-Close input tray
```

- 3 Remove the white (protective) film sheet.

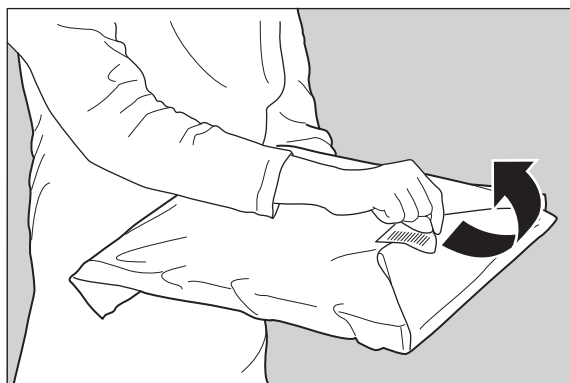
4 Take film pack, and open it.

Verify that the film type on the film pack corresponds with the sticker on the tray! If you do use an other film type, you are advised to change the label on the tray.

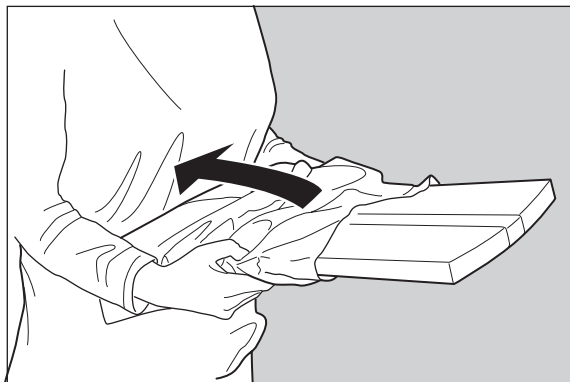


Note: You can put the film pack onto a table to make manipulation easier. Before you do this, make sure that the table is dust-free!

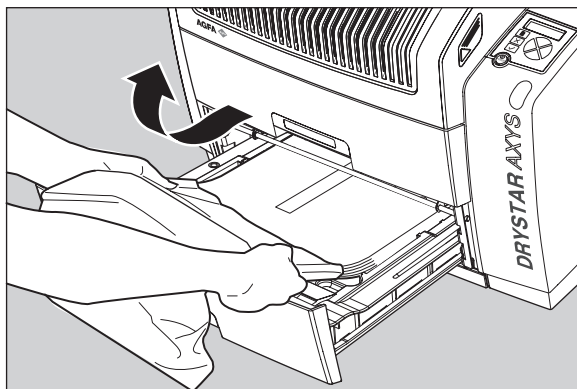
5 Remove the sticker from the film pack.



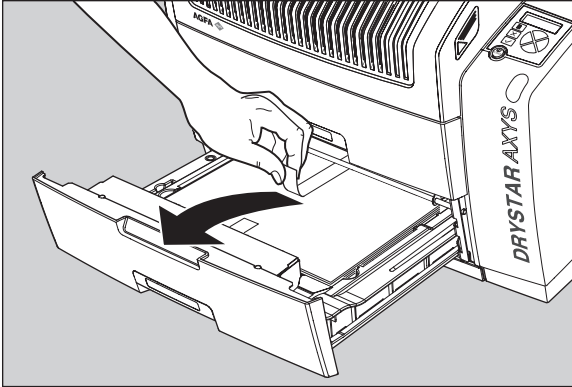
- 6 Remove the plastic film bag partially.



- 7 Slide the film pack into the input tray, and remove the plastic film bag completely.



8 Tear the plastic strip around the film pack.



9 Close the input tray.



Note: The Drystar AXYS resumes printing as soon as the tray is closed.

Note: Loading instructions are also available on the input tray cover.

Note: Never load another film format when the input tray is not empty. Intermediate changing of film formats increases the risk for dust, which can damage the thermal print head (TPH).

Note: The system performs an automatic calibration when the film format has been changed.

Note: When a film job cannot be done because the tray to which the job is assigned is empty, then the printer will check if the films in the other tray can be used for this and other print jobs in the print queue. The printer will skip the print jobs that cannot be done and will resume them later.

Note: When a film sheet is inserted wrongly in the input tray, then the printer will print on the back-side (non-emulsion side). As a result, a film jam occurs.

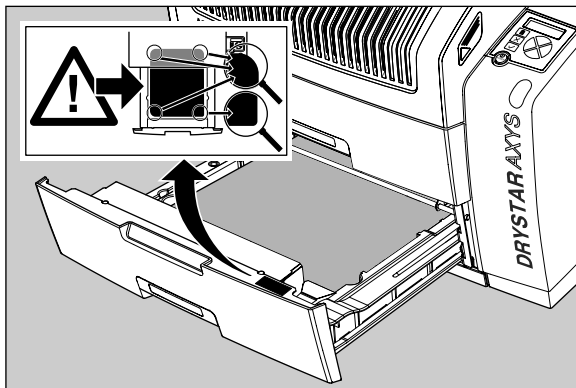
Note: The operator will be informed of this back side printing and will be asked to remove the film jam (refer to “[Clearing of film jams](#)” on page 129) and to check whether the loading procedure was followed correctly (refer to “[Film loading procedure](#)” on page 79).



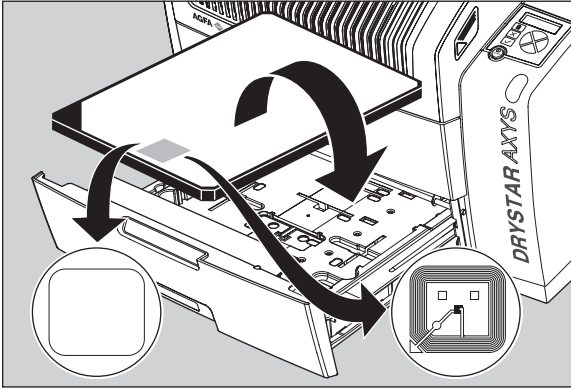
WARNING: Never reuse a jammed film. Refer to “[Clearing of film jams](#)” on page 129.

Checking the correct position of a film in the input tray

You can verify that the film is properly loaded by watching the lower right corner of the films in the input tray. The rounding of this corner should be smaller than the other three corners. This is also indicated on the sticker at the right side of the input tray cover.



When the tray is closed, the Film Identification tag is read and the printer settings are automatically adjusted if the film properties have changed. The Film Identification tag is located on the protective sheet on the backside of the film pack. The figure below shows the film pack upside down.



Note: For some new film types, the Film Identification tag will be covered by a sticker and therefore will not be visible.

4 Advanced operation (Key-operator mode)

This chapter consists of the following topics:

- Overview of key-operator functions
- Quality Control for general radiography applications (DT 2 B & DT 2 C)
- Quality control for mammography application (DT 2 Mammo) (optional)
- Preventive maintenance schedule
- Cleaning the exterior
- Cleaning the print head
- Troubleshooting checklist
- Clearing of film jams
- Film identification problems

Overview of key-operator functions

The key-operator menus make it possible to use the Drystar AXYS advanced functions.



Note: These functions are described in detail in the Drystar 5302 advanced functions.

For general information on the key functions of the Drystar AXYS, refer to “[Overview of user interface controls](#)” on page 15.

The Drystar AXYS features the following functions on the main menu level of the key-operator mode:

Menu item	Function	Page (Ref. manual)
Show settings	To consult the current settings of the printer.	95
Change settings	To change the current settings of the printer.	105
Print image	To print one of the Drystar AXYS test images. To load and print images from an external CF-card.	139
Save configuration	To make a back-up of the printer settings.	145
Restore configuration	To restore the back-up of the printer settings.	151
Calibration	To calibrate the printer.	159
Service actions	To view error, repair and maintenance data.	168
Quality Control	To control with a daily procedure the image quality respectively of general radiography & mammography (optional) applications.	87 & 104 (this manual)
Installation	To install or update the Drystar AXYS software.	203



Note: Refer to the indicated page of the Drystar AXYS Reference manual for an explanation of the function and the appropriate procedures.

Quality Control for general radiography applications (DT 2 B & DT 2 C)

In order to establish and maintain consistent image quality, a regular evaluation of image quality is advised.

The Drystar AXYS contains an automatic QC procedure for general radiography applications and has been designed to comply with the grayscale reproduction constancy test, according to the international standard IEC 1223-2-4. If the option for the mammography application is activated, another QC procedure is available for the mammography application (refer to “[Quality control for mammography application \(DT 2 Mammo\) \(optional\)](#)” on page 104. In this chapter we will discuss how to control the quality of general radiography applications.

Local Regulations may require other procedures.

The Drystar AXYS Hard copy quality control procedure consists of two main steps:

- Before initial use, establishing a number of reference values that will be used for further follow-up and verifying initial image quality.

Refer to “[Establishing the reference values and verifying image quality for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 88.

- After establishing these values, performing regular daily, weekly and annual quality tests.

Refer to “[Quality Control for general radiography applications \(DT 2 B & DT 2 C\)](#)” on page 87.



Note: Repeat the two main steps of the Hard Copy quality procedures for each input tray loaded with DT 2 B and/or DT 2 C films.

The results of these tests are recorded on Quality Control Charts.

The QC image (Refer to “[QC test image for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 90) has several additional fields where the QC data can be filled in. This image should be filed as part of the QC procedure.

For more information, please refer to “[Quality Control Charts](#)” on page 149.

Establishing the reference values and verifying image quality for general radiography applications (DT 2 B and DT 2 C)

After installation of a new Drystar AXYS and before initial use you must establish Quality Control aim values. These values will be used as the base line for comparison when daily Quality Control is done. These values should be determined again after major service, repair or software update.

The following Quality Control aim values must be determined:

- The daily operating density levels. Refer to “[Establishing the daily operating reference density levels for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 91.
- Drystar AXYS image geometry. Refer to “[Establishing the image geometry reference values for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 95.

Once Quality Control aim values are established you must evaluate the Spatial Resolution, the Artifact Levels and the Low Contrast Visibility to determine if the image quality is acceptable. Refer to “[Verifying Acceptable Spatial Resolution, Artifact Levels and Low Contrast Visibility for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 96.

The Quality Control aim values, the Spatial Resolution and Artifact Levels and the Image Geometry values are all recorded on the Quality Control charts. Refer to “[Charts for general radiography QC](#)” on page 150.

On these charts, the following test conditions are also recorded:

- The type and serial number of the Drystar AXYS.
- The type and emulsion number of the film used to determine the reference values.
- The type of densitometer used.
- The time (day, month, year) that the values were established.



WARNING: Before you can establish the daily operating levels, the Drystar AXYS must be switched on for at least 15 minutes and it must be calibrated as well.

WARNING: Refer to [“Switching on the Drystar AXYS”](#) on page 48.

QC test image for general radiography applications (DT 2 B and DT 2 C)

The QC image has several additional fields where the QC data can be filled in. This image should be filed as part of the QC procedure.



Note: Note that the dimensions A and B are not indicated on the printed film.

Quality Control Test Image

Identification

Initials: _____ Date: _____

Time: _____

↓ **Geometry test**

Max D	Max D	_____
Hi D	Hi D	_____
Mid D	Mid D	_____
Lo D	Lo D	_____
Base + Fog	Base + Fog	_____

DD
Density Difference
(Hi D - Lo D) _____

Weekly spatial Resolution test

Sets of dots visible?
 Yes No

Dimension A

Dimension B

1 2 3

Establishing the daily operating reference density levels for general radiography applications (DT 2 B and DT 2 C)

This procedure enables you to establish the base line values for:

- Low density
- Mid density
- High density



WARNING: The densitometer of the Drystar AXYS is calibrated at installation. Authorized service personnel should recalibrate the densitometer annually or after major service or repair.

Procedure

- 1 Press the Key-operator key to enter the Key-operator mode.
- 2 Press the down key seven times, followed by the confirm key to select 'Quality Control'.

```

1 Show settings KO
2 Change settings
3 Print image
4 Save configuration

5 Restore config.
6 Calibration
7 Service Actions
8 Quality Control
9 Installation
  
```

A confirmation screen appears:

```

Start QC          OK
Procedure?
YES(Y)           NO(X)
  
```

- 3 Do one of the following:
- Press the Confirm key (YES) to start the QC procedure and proceed with step 4.
 - Press the Escape key (NO) to quit.

- 4 Define the tray for printing.

The 'Select tray' screen appears:

```
select tray      [NO]
1.Upper tray
2.Lower tray
```

- 5 Press the Up/Down arrow keys to select the desired tray, followed by the Confirm key.

The following screens appear successively:

```
Queuing file    [QC]
Please wait
```

```
QC Procedure    [QC]
in Progress
Please wait
[ ] 0%
```

The Drystar AXYS will automatically print the QC test image.

- After the image is printed, the system will display all measured optical density values:

```
QC readings:
Max D:0.0 Hi D:0.0
Mid D:0.0 Lo D:0.0
Base + Fog: 0.0
DD: 1.56
(Densitometer=MB924)
```

The density levels are displayed, e.g:
 Max D: 3.2 Hi D: 1.91
 Mid D: 1.13 Lo D: 0.35
 Base+Fog: 0.19
 DD: 1.56

The displayed values (that have to be monitored) represent the following steps on the test film:

Operating Level		Value (Macbeth units) (according to IEC 1223-2-4 or better)
Low density	the density value of the low density step	0,4 ± 0,05
Mid density	the density value of the mid density step	1,2 ± 0,15
High density	the density value of the high density step	2,0 ± 0,2
Base + Fog, Density difference (DD), Maximum density (Max D)	These values are displayed but not important for the QC procedure for general radiography applications.	



WARNING: If the mid density value does not meet or exceeds the recommended values, the reason must be found and the problem solved before any further clinical films can be printed.

WARNING: Refer to “Preventive maintenance schedule” on page 121 and “Maintaining image quality and resolving image quality problems” on page 258 (Reference manual), or call your local Agfa service organization.

- Record the low, mid and high density levels on Chart 1 (‘DrystarAXYS Determination of Operating Levels’). Refer to “Quality Control Charts” on page 149.
- Press the Confirm key to return to the main menu.
- Repeat step 1 through 8 once a day for five consecutive days, as indicated on the Drystar AXYS Chart 1.

- 10 Calculate the average value of the densities from the five images. These values represent operating levels, or aim values, for each density.
- 11 Record the respective aim (average) values as the ‘Operating levels’ on Charts 2A and 2B (‘Drystar AXYS Daily Density Control Chart’). Refer to “[Quality Control Charts](#)” on page 149.

The calculated ‘Operating levels’ should be as following:

Operating Level	Value (according to IEC 1223-2-4 or better)
Low density	$0,4 \pm 0,05$
Mid density	$1,2 \pm 0,15$
High density	$2,0 \pm 0,2$

- 12 These charts will be used for the daily quality test. For more information, refer to “[Performing the daily QC test for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 99.

Establishing the image geometry reference values for general radiography applications (DT 2 B and DT 2 C)

Procedure

- 1 Print the QC test image or use the previously printed test image.

For an example, see [“QC test image for general radiography applications \(DT 2 B and DT 2 C\)”](#) on page 90.

- 2 To determine the reference values for geometry, measure the distances A and B of the geometric square on the test image.



WARNING: Make sure to measure distance A from the left edge of the left line to the right edge of the right line and distance B from the upper edge of the upper line to the lower edge of the lower line.

WARNING: We strongly recommend using a 30 cm (12-inch) machinist scale with 0.5 mm divisions (1/64 inch).

- 3 Record these values as reference dimensions Aref and Bref on Chart 4 (‘Drystar AXYS Geometric Consistency Control Chart’). Refer to [“Quality Control Charts”](#) on page 149.

These charts will be used for the annual quality test. For more information, refer to [“Performing the Annual QC tests for general radiography applications \(DT 2 B and DT 2 C\)”](#) on page 103.

- 4 Save this film for future reference.

Verifying Acceptable Spatial Resolution, Artifact Levels and Low Contrast Visibility for general radiography applications (DT 2 B and DT 2 C)



WARNING: Good viewing conditions are important for the correct interpretation of both diagnostic and test images. Make sure that the light box intensity (luminance) is between 2000 and 4000 cd/m² (4500 and 6500 °K). Use a magnifying glass and use shutters to collimate. Make sure the ambient light is low.

Procedure

- 1 Print the QC Test image or use the previously printed QC Test image used to establish the daily operating density levels.
- 2 Visually check the QC test image for artifacts: no significant disturbing artifacts should be visible.
- 3 Check the spatial resolution in each of the three circles (refer to item 1, 2 and 3 on the “QC test image for general radiography applications (DT 2 B and DT 2 C)” on page 90). Within each circle there are three groups, each consisting of five dots. All five dots of each group must be visible with a magnifying glass. The smallest cluster of 5 dots is only visible if the viewing conditions are good.
- 4 Check the Low Contrast Visibility at both the high (100 / 95%) and low end (0 / 5%) of the density scale. You should be able to see the circle in the square (refer to item 1 on the “QC test image for general radiography applications (DT 2 B and DT 2 C)” on page 90 and the upper circle (refer to item 2 on the “QC test image for general radiography applications (DT 2 B and DT 2 C)” on page 90.
- 5 Record these values at the top of Chart 3 (‘Drystar AXYS Artifacts and Spatial Resolution Control Chart’). Refer to “Quality Control Charts” on page 149.

- 6 These charts will be used for the weekly quality test. For more information, refer to “Performing the Weekly QC tests for general radiography applications (DT 2 B and DT 2 C)” on page 101.



WARNING: In case of significant artifacts or insufficient spatial resolution, the reason must be found and the problem solved before any further clinical films can be printed.

WARNING: Refer to “Preventive maintenance schedule” on page 121 and “Maintaining image quality and resolving image quality problems” on page 258 (Reference manual), or call your local Agfa service organization.

Performing quality control (QC) tests for general radiography applications (DT 2 B and DT 2 C)

The following procedures must be performed daily, weekly or annually as indicated.

The reason for performing quality control tests is to determine if any significant image quality variation or deterioration has occurred which may require corrective action. Comparing the results of the tests with the reference values previously established does this.

This procedure allows the operator to take the necessary preventive actions before any image quality loss can take place.

Performing the daily QC test for general radiography applications (DT 2 B and DT 2 C)



WARNING: *This test must be performed every day before any clinical film can be processed.*

Procedure

- 1 Turn on the Drystar AXYS and wait at least for 15 minutes. Refer to [“Switching on the Drystar AXYS”](#) on page 48.
- 2 Press the Key-operator key to enter the Key-operator mode.
- 3 Press the down key seven times, followed by the ok key to select ‘QC’.

```

1 Show settings  OK
2 Change settings
3 Print image
4 Save configuration

5 Restore config.
6 Calibration
7 Service Actions
8 Quality Control
9 Installation
  
```

A confirmation screen appears:

```

Start QC          OK
Procedure?
YES(✓)           NO(✗)
  
```

- 4 Do one of the following:
 - Press the Confirm key (YES) to start the QC procedure and proceed with step 5.
 - Press the Escape key (NO) to quit.
- 5 Define the tray for printing.

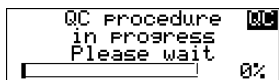
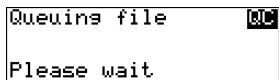
The ‘Select tray’ screen appears:

```

select tray      OK
1.Upper tray
2.Lower tray
  
```

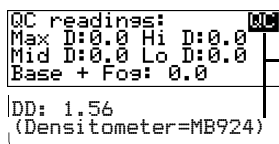
- Press the Up/Down arrow keys to select the desired tray, followed by the Confirm key.

The following screens appear successively:



The Drystar AXYS will automatically print the QC test image.

After the image is printed, the system will display all measured optical density values:



The density levels are displayed, e.g:
 Max D: 3.2 Hi D: 1.91
 Mid D: 1.13 Lo D: 0.35
 Base+Fog: 0.19
 DD: 1.56

- Record the low, mid and high density values on Charts 2A and 2B ('Drystar AXYS Daily Density Control Chart'). Also record the date and time of the test on the charts and on the QC test images. Refer to "Quality Control Charts" on page 149.
- Press the Confirm key to return to the main menu.



WARNING: In case the measure results are not within the aim values, the reason for the unacceptable density variations must be identified and resolved before any further clinical films can be processed. This may include repeating the film calibration procedure.

WARNING: For possible causes of non-compliance and the respective actions, refer to "Preventive maintenance schedule" on page 121 and "Maintaining image quality and resolving image quality problems" on page 258 (Reference manual).

Performing the Weekly QC tests for general radiography applications (DT 2 B and DT 2 C)

Spatial Resolution, Artifact Test and Low Contrast Visibility

To identify artifacts and verify spatial resolution you must perform the following test weekly or as needed for troubleshooting image quality problems.



WARNING: Good viewing conditions are important for the correct interpretation of both diagnostic and test images. Make sure that the light box intensity (luminance) is between 2000 and 4000 cd/m² (4500 and 6500 °K). Use a magnifying glass and use shutters to collimate. Make sure the ambient light is low.

Procedure

- 1 First, print out the QC test image. Refer to “[Performing the daily QC test for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 99.
- 2 Check the QC test image visually for artifacts: no significant disturbing artifacts should be visible.
- 3 Check the spatial resolution in each of the three circles (refer to item 1, 2 and 3 on the “[QC test image for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 90). Within each circle there are three groups, each consisting of five dots. All five dots of each group must be visible with a magnifying glass. The smallest cluster of 5 dots is only visible if the viewing conditions are good.
- 4 Check the Low Contrast Visibility at both the high (100 / 95%) and low end (0 / 5%) of the density scale. You should be able to see the circle in the square (refer to item 1 on the “[QC test image for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 90 and the upper circle (refer to item 2 on the “[QC test image for general radiography applications \(DT 2 B and DT 2 C\)](#)” on page 90).
- 5 Record these values on Chart 3 (‘Drystar AXYS Artifacts and Spatial Resolution Control Chart’).



WARNING: In case of significant artifacts, insufficient spatial resolution or failure of any other recommended QC tests, the cause of the problem must be identified, and corrective action must be taken before the Drystar AXYS can be used for any further clinical imaging.

WARNING: Refer to “[Preventive maintenance schedule](#)” on page 121 and “[Maintaining image quality and resolving image quality problems](#)” on page 258 (Reference manual), or call your local Agfa service organization.

Performing the Annual QC tests for general radiography applications (DT 2 B and DT 2 C)

Geometric Consistency Test

To be able to notice fluctuations in image size and aspect ratio, you must perform this procedure once a year.

Procedure

- 1 First, perform the daily test.
- 2 Use the QC test image of the weekly test and measure the dimensions A and B of the geometric square. Refer to [“Establishing the image geometry reference values for general radiography applications \(DT 2 B and DT 2 C\)”](#) on page 95.



WARNING: Make sure to measure distance A from the left edge of the left line to the right edge of the right line and distance B from the upper edge of the upper line to the lower edge of the lower line.

WARNING: We strongly recommend using a 30 cm (12-inch) machinist scale with 0.5 mm divisions (1/64 inch).

- 3 Record these values as measured dimensions A and B on Chart 4 (‘Drystar AXYS Geometric Consistency Control Chart’).
- 4 Compare the measured A and B dimensions with the reference dimension values, Aref and Bref on Chart 4 (‘Drystar AXYS Geometric Consistency Control Chart’).

The differences between measured dimensions of A and B and the reference values Aref and Bref should be less than or equal to 1.0%.

- 5 Check for image distortion.
- 6 Calculate the aspect ratio by dividing A by B.

The result must be 1 +/- 0.01



WARNING: If the image size or distortion values are outside of limits, contact Agfa service to resolve the problem.

Quality control for mammography application (DT 2 Mammo) (optional)

In order to establish and maintain consistent image quality, a regular evaluation of the image quality is advised.

The Drystar AXYS contains an automatic QC procedure for general radiography applications (refer to [“Quality Control for general radiography applications \(DT 2 B & DT 2 C\)”](#) on page 87). If the option for the mammography application is activated, another QC procedure is available for the mammography application. This QC procedure has been designed to comply with the NEMA Standards publication XR 23-2006. In this chapter we will discuss how to control the quality of mammography applications. This procedure is automatically selected when there is Mammo media in the input tray.

Local Regulations may require other procedures.

The Drystar AXYS Hard Copy quality control procedures consist of two main steps:

- Before initial use, establishing a number of reference values that will be used for further follow-up and verifying initial image quality.
- Refer to [“Establishing the daily operating reference density levels for mammography application \(DT 2 Mammo\) \(optional\)”](#) on page 108.
- After establishing these values, performing regular daily, weekly and annual quality tests.
- Refer to [“Performing quality control \(QC\) tests for mammography application \(DT 2 Mammo\) \(optional\)”](#) on page 115.



Note: Repeat the two main steps of the Hard Copy quality procedures for each input tray loaded with DT 2 Mammo films.

The results of these tests are recorded on Quality Control Charts.

The QC image (refer to the [“QC test image for mammography applications \(DT 2 Mammo\) \(optional\)”](#) on page 107) has several additional fields where the QC data can be filled in. This image should be filed as part of the QC procedure.

For more information, please refer to [“Quality Control Charts”](#) on page 149.

Establishing the reference values and verifying image quality for mammography application (DT 2 Mammo) (optional)

After installation of a new Drystar AXYS and before initial use you must establish Quality Control aim values. These values will be used as the base line for comparison when daily Quality Control is done. These values should be determined again after major service, repair or software update.

The following Quality Control aim values must be determined:

- The daily operating density levels. Refer to “[Establishing the daily operating reference density levels for mammography application \(DT 2 Mammo\) \(optional\)](#)” on page 108.
- Drystar AXYS image geometry. Refer to “[Establishing the image geometry reference values for mammography application \(DT 2 Mammo\) \(optional\)](#)” on page 112.

Once Quality Control aim values are established you must evaluate the Spatial Resolution, the Artifact Levels and the Low Contrast Visibility to determine if the image quality is acceptable. Refer to “[Verifying Acceptable Spatial Resolution and Artifact Levels and Low Contrast Visibility for mammography application \(DT 2 Mammo\) \(optional\)](#)” on page 113.

The Quality Control aim values, the Spatial Resolution and Artifact Levels and the Image Geometry values are all recorded on the Quality Control charts. Refer to “[Charts for mammography QC \(optional\)](#)” on page 155.

On these charts, the following test conditions are also recorded:

- The type and serial number of the Drystar AXYS.
- The type and emulsion number of the film used to determine the reference values.
- The type of densitometer used.
- The time (day, month, year) that the values were established.



WARNING: Before you can establish the daily operating levels, the Drystar AXYS must be switched on for at least 15 minutes and it must be calibrated as well.

WARNING: Refer to [“Switching on the Drystar AXYS”](#) on page 48.

QC test image for mammography applications (DT 2 Mammo) (optional)

The QC image has several additional fields where the QC data can be filled in. This image should be filed as part of the QC procedure.



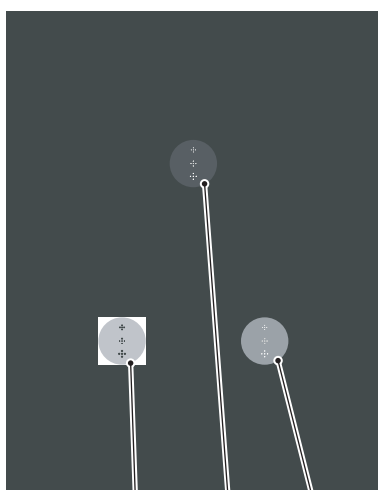
Note: Note that the dimensions A and B are not indicated on the printed film.

Quality Control Test Image

Identification

Initials: _____ Date: _____

Time: _____



1 2 3

↓ Geometry test

	Max D	Max D _____	Dimension B
	Hi D	Hi D _____	
	Mid D	Mid D _____	
	Lo D	Lo D _____	
	Base + Fog	Base + Fog _____	
	Base + Fog	DD Density Difference (Hi D - Lo D) _____	
Weekly spatial Resolution test			
		Sets of dots visible? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Dimension A			

Establishing the daily operating reference density levels for mammography application (DT 2 Mammo) (optional)

This procedure enables you to establish the base line values for:

- Low density
- Mid density
- High density



WARNING: The densitometer of the Drystar AXYS is calibrated at installation. Authorized service personnel should recalibrate the internal densitometer annually or after major service or repair.

Procedure

- 1 Press the Key-operator key to enter the Key-operator mode.
- 2 Press the down key seven times, followed by the confirm key to select 'Quality Control'.

```

1 Show settings KO
2 Change settings
3 Print image
4 Save configuration

5 Restore config.
6 Calibration
7 Service Actions
8 Quality Control
9 Installation
  
```

A confirmation screen appears:

```

Start QC          [OK]
Procedure?
YES(✓)           NO(X)
  
```

- 3 Do one of the following:
 - Press the Confirm key (YES) to start the QC procedure and proceed with step 4.
 - Press the Escape key (NO) to quit.
- 4 Define the tray for printing.
The 'Select tray' screen appears:

```
select tray  [OK]
1.Upper tray
2.Lower tray
```



Note: When controlling the Drystar AXYS via a remote PC, The 'Select input tray' screen is preceded by a screen, which allows you to:

Note: Start the quality control procedure immediately,

Note: Edit additional data for the last quality control measuring.

- 5 Press the Up/Down arrow keys to select the desired tray, followed by the Confirm key.

The following screens appear successively:

```
Queueing file  [OK]
Please wait
```

```
QC Procedure  [OK]
  in Progress
  Please wait
  _____  0%
```

The Drystar AXYS will automatically print the QC mammography test image.

- After the image is printed, the system will display all measured optical density values:

```
QC readings:
Max D:0.0 Hi D:0.0
Mid D:0.0 Lo D:0.0
Base + Fog: 0.0
DD: 1.56
(Densitometer=MB924)
```

The density levels are displayed, e.g:
 Max D: x.x Hi D: 2.23
 Mid D: 1.13 Lo D: 0.4
 Base+Fog: 0.20
 DD: x.xx

The displayed values (that have to be monitored) represent the following steps on the test film:

Operating Level		Value (Macbeth units) (according to NEMA standards XR 23-2006)
Base + Fog	the density value of the Base + Fog step	0.22 ± 0.03
Low density	the density value of the low density step	0.45 ± 0.07
Mid density	the density value of the mid density step	1.20 ± 0.15
High density	the density value of the high density step	2.20 ± 0.15



WARNING: If the mid density value does not meet or exceeds the recommended values, the cause must be found and the problem solved before any further clinical films can be printed.

WARNING: Refer to “Preventive maintenance schedule” on page 121 and “Maintaining image quality and resolving image quality problems” on page 258 (Reference manual), or call your local Agfa service organization.

- Record the density levels on Chart 1 (‘DrystarAXYS Determination of Operating Levels’). Refer to “Charts for mammography QC (optional)” on page 155.
- Press the Confirm key to return to the main menu.
- Repeat steps 1 through 8 once a day for five consecutive days, as indicated on the Drystar AXYS Chart 1.
- Calculate the average value of the densities from the five images. These values represent operating levels or aim values, for each density.

- 11 Record the respective aim (average) values as the ‘Operating levels’ on Charts 2A and 2B (‘Drystar AXYS Daily Density Control Chart’). Refer to “[Charts for mammography QC \(optional\)](#)” on page 155.

The calculated ‘Operating levels’ should be as follows:

Operating Level	Value (Macbeth units) (according to NEMA standards XR 23-2006)
Base + Fog	0.22 ± 0.03
Low density	0.45 ± 0.07
Mid density	1.20 ± 0.15
High density	2.20 ± 0.15

- 12 These charts will be used for the daily quality test. For more information, refer to “[Performing the daily QC test for mammography application \(DT 2 Mammo\) \(optional\)](#)” on page 116.

Establishing the image geometry reference values for mammography application (DT 2 Mammo) (optional)

Procedure

- 1 Print the QC mammography test image or use the previously printed test image. For an example, see “[QC test image for mammography applications \(DT 2 Mammo\) \(optional\)](#)” on page 107.

- 2 To determine the reference values for geometry, measure the distances A and B of the geometric square on the test image.



WARNING: Make sure to measure distance A from the left edge of the left line to the right edge of the right line and distance B from the upper edge of the upper line to the lower edge of the lower line.

WARNING: We strongly recommend using a 30 cm (12-inch) machinist scale with 0.5 mm divisions (1/64 inch).

- 3 Record these values as reference dimensions Aref and Bref on Chart 4 (‘Drystar AXYS Geometric Consistency Control Chart’). Refer to “[Charts for mammography QC \(optional\)](#)” on page 155.

These charts will be used for the annual quality test. For more information, refer to “[Performing the Annual QC tests for mammography application \(DT 2 Mammo\) \(optional\)](#)” on page 120.

- 4 Save this film for future reference.

Verifying Acceptable Spatial Resolution and Artifact Levels and Low Contrast Visibility for mammography application (DT 2 Mammo) (optional)



WARNING: Good viewing conditions are important for the correct interpretation of both diagnostic and test images. Make sure that the light box intensity (luminance) is between 3000 and 6000 cd/m² (4500 and 6500 °K) for mammography. Use a magnifying glass and use shutters to collimate. Make sure the ambient light is low.

Procedure

- 1 Print the QC mammography test image or use the previously printed QC mammography test image used to establish the daily operating density levels.
- 2 Visually check the QC test image for artifacts: no significant disturbing artifacts should be visible.
- 3 Check the spatial resolution in each of the three ovals. Within each oval there are three groups, each having five dots. All five dots of each group must be visible with a magnifying glass. The smallest cluster of 5 dots is only visible if the viewing conditions are good.
- 4 Check the Low Contrast Visibility at both the high (100 / 95%) and low end (0 / 5%) of the density scale. You should be able to see the circle in the square (refer to item 1 on the [“QC test image for mammography applications \(DT 2 Mammo\) \(optional\)”](#) on page 107) and the upper circle (refer to item 2 on the [“QC test image for mammography applications \(DT 2 Mammo\) \(optional\)”](#) on page 107).
- 5 Record these values at the top of Chart 3 (‘Drystar AXYS Artifacts and Spatial Resolution Control Chart’). Refer to [“Charts for mammography QC \(optional\)”](#) on page 155.

- 6 These charts will be used for the weekly quality test. For more information, refer to “[Performing the Weekly QC tests for mammography application \(DT 2 Mammo\) \(optional\)](#)” on page 118.



WARNING: In case of significant artifacts or insufficient spatial resolution, the cause must be found and the problem solved before any further clinical films can be printed.

WARNING: Refer to “[Preventive maintenance schedule](#)” on page 121 and “[Maintaining image quality and resolving image quality problems](#)” on page 258 (Reference manual), or call your local Agfa service organization.

Performing quality control (QC) tests for mammography application (DT 2 Mammo) (optional)

The following procedures must be performed daily, weekly or annually as indicated.

The reason for performing quality control tests is to determine if any significant image quality variation or deterioration has occurred which may require corrective action. Comparing the results of the tests with the reference values previously established does this.

This procedure allows the operator to take the necessary preventive actions before any image quality loss can take place.

Performing the daily QC test for mammography application (DT 2 Mammo) (optional)



WARNING: *This test must be performed every day before any clinical film can be processed.*

Procedure

- 1 Turn on the Drystar AXYS and wait at least for 15 minutes. Refer to [“Switching on the Drystar AXYS”](#) on page 48.
- 2 Press the Key-operator key to enter the Key-operator mode.
- 3 Press the down key seven times, followed by the ok key to select ‘QC’.

```

1 Show settings  KO
2 Change settings
3 Print image
4 Save configuration

5 Restore config.
6 Calibration
7 Service Actions
8 Quality Control
9 Installation
  
```

A confirmation screen appears:

```

Start QC          OK
Procedure?
YES(/)           NO(X)
  
```

- 4 Do one of the following:
 - Press the Confirm key (YES) to start the QC procedure and proceed with step 5.
 - Press the Escape key (NO) to quit.

- 5 Define the tray for printing.

The ‘Select tray’ screen appears:

```

select tray      KO
1.Upper tray
2.Lower tray
  
```

- Press the Up/Down arrow keys to select the desired tray, followed by the Confirm key.

The following screens appear successively:

```

Queuing file      [OK]
Please wait
  
```

```

QC Procedure     [OK]
in Progress
Please wait
[Progress Bar]  0%
  
```

The Drystar AXYS will automatically print the QC test image.

After the image is printed, the system will display all measured optical density values:

```

QC readings:     [OK]
Max D:0.0 Hi D:0.0
Mid D:0.0 Lo D:0.0
Base + Fog: 0.0
DD: 1.56
(Densitometer=MB924)
  
```

The density levels are displayed, e.g:

```

Max D: x.x Hi D: 2.23
Mid D: 1.13 Lo D: 0.4
Base+Fog: 0.20
DD: x.xx
  
```

- Record the Base + Fog, low, mid and high density values on Charts 2A and 2B ('Drystar AXYS Daily Density Control Chart'). Also record the date and time of the test on the charts and on the QC mammography test images. Refer to Refer to "Charts for mammography QC (optional)" on page 155.
- Press the Confirm key to return to the main menu.
- Press the ok key to return to the main menu.



WARNING: In case the measure results are not within the aim values, the reason for the unacceptable density variations must be identified and resolved before any further clinical films can be processed. This may include repeating the film calibration procedure.

WARNING: For possible causes of non-compliance and the respective actions, refer to "Preventive maintenance schedule" on page 121 and "Maintaining image quality and resolving image quality problems" on page 258 (Reference manual).

Performing the Weekly QC tests for mammography application (DT 2 Mammo) (optional)

Spatial Resolution, Artifact Test and Low Contrast Visibility

To identify artifacts and verify spatial resolution you must perform the following test weekly or as needed for troubleshooting image quality problems.



WARNING: Good viewing conditions are important for the correct interpretation of both diagnostic and test images. Make sure that the light box intensity (luminance) is 3000 and 6000 cd/m² (4500 and 6500 °K) for mammography. Use a magnifying glass and use shutters to collimate. Make sure the ambient light is low.

Procedure

1 First, print out the QC mammography test image. Refer to [“Performing the daily QC test for mammography application \(DT 2 Mammo\) \(optional\)”](#) on page 116.

2 Check the QC test image visually for artifacts: no significant disturbing artifacts should be visible.

3 Check the spatial resolution.

The test film also shows three squares which each contains an oval. These 3 ovals contain 3 groups, each having 5 dots. All five dots of each group must be visible with a magnifying glass. The smallest cluster of 5 dots is only visible if the viewing conditions are good.

4 Check the Low Contrast Visibility at both the high (100 / 95%) and low end (0 / 5%) of the density scale. You should be able to see the circle in the square (refer to item 1 on the [“QC test image for mammography applications \(DT 2 Mammo\) \(optional\)”](#) on page 107) and the upper circle (refer to item 2 on the [“QC test image for mammography applications \(DT 2 Mammo\) \(optional\)”](#) on page 107).

- 5 Record these values on Chart 3 ('Drystar AXYS Artifacts and Spatial Resolution Control Chart'). Refer to "[Charts for mammography QC \(optional\)](#)" on page 155.



WARNING: In case of significant artifacts, insufficient spatial resolution or failure of any other recommended QC tests, the cause of the problem must be identified, and corrective action must be taken before the Drystar AXYS can be used for any further clinical imaging.

WARNING: Refer to "[Preventive maintenance schedule](#)" on page 121 and "[Maintaining image quality and resolving image quality problems](#)" on page 258 (Reference manual), or call your local Agfa service organization.

Performing the Annual QC tests for mammography application (DT 2 Mammo) (optional)

Geometric Consistency Test

To be able to notice fluctuations in image size and aspect ratio, you must perform this procedure once a year.

Procedure

- 1 First, perform the daily test.
- 2 Measure the distances A and B of the geometric square on the QC mammography test image. Refer to “[Establishing the image geometry reference values for mammography application \(DT 2 Mammo\) \(optional\)](#)” on page 112.



WARNING: Make sure to measure distance A from the left edge of the left line to the right edge of the right line and distance B from the upper edge of the upper line to the lower edge of the lower line.

WARNING: We strongly recommend using a 30 cm (12-inch) machinist scale with 0.5 mm divisions (1/64 inch).

- 3 Record these values as measured distances A and B on Chart 4 (‘Drystar AXYS Geometric Consistency Control Chart’). Refer to “[Charts for mammography QC \(optional\)](#)” on page 155.
- 4 Compare the measured A and B dimensions with the reference dimension values, Aref and Bref on Chart 4 (‘Drystar AXYS Geometric Consistency Control Chart’). Refer to “[Charts for mammography QC \(optional\)](#)” on page 155.

The differences between the measured dimensions of A and B and the reference values A ref and B ref should be less than or equal to 1.0%.

- 5 Check for image distortion.
- 6 Calculate the aspect ratio by dividing A by B.

The result must be 1 ± 0.01



WARNING: If the image size or distortion values are outside of limits, contact Agfa service to resolve the problem.

Preventive maintenance schedule

The Drystar AXYS is designed for trouble-free operation. Maintenance and cleaning involve only some minor user tasks. Refer to the following pages for the appropriate cleaning procedure.

Interval	What to do?
Ad hoc	“Cleaning the exterior” on page 122
When image quality tends to degrade. An appropriate warning message is displayed.	“Cleaning the print head” on page 123

Safety guidelines



WARNING: To prevent damage to the printer while performing maintenance, observe the following safety precautions:

- Do not lubricate the printer.
- Do not attempt to disassemble the printer.
- Do not touch the resistor line of the print head.
- Always switch off the Drystar AXYS and disconnect the power cord from the outlet before carrying out any maintenance work inside the printer.



Caution: Film jam removal or cleaning the printer head can be done without switching the power off. Nevertheless, care should be taken and the “Safety Directions” on page 43 should be respected.

Cleaning the exterior

Procedure

- 1 Switch off the Drystar AXYS by following the procedure as described in [“Switching off the Drystar AXYS”](#) on page 63
- 2 Remove the power plug from the socket.
- 3 Wipe the exterior of the printer with a clean, soft, damp cloth.
Use a mild soap or detergent if required but never use an ammonia-based cleaner. Be careful not to get any liquid in the power cord port.
- 4 Plug in the printer and switch it on by following the procedure as described in [“Switching on the Drystar AXYS”](#) on page 48.

Cleaning the print head



WARNING: Print head cleaning must be done when image quality problems occur.

Procedure

- 1 Press the Key-operator key to enter the key-operator mode.
- 2 On the key-operator main menu, press the Down key five times, followed by the Confirm key to select 'Calibration'.

```

1 Show settings KO
2 Change settings
3 Print image
4 Save configuration

5 Restore config.
6 Calibration
7 Service Actions
8 Quality Control
9 Installation
  
```

- 3 On the Select calibration menu, press the Down key, followed by the Confirm key to select 'Clean therm. head'.

```

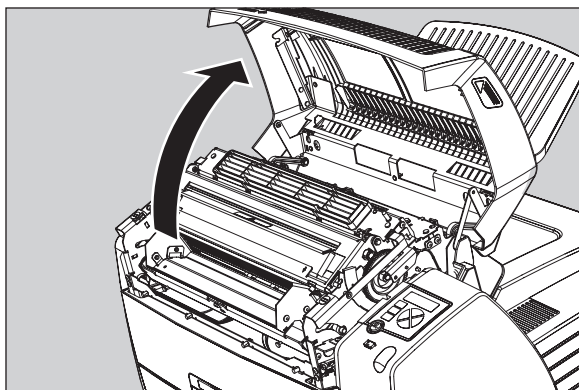
SELECT          CA
CALIBRATION
1 Film calibration
2 Clean therm. head
  
```

- 4 The 'Thermal head cleaning' screen will give step-by-step instructions on what to do:

```

THERMAL HEAD   CA
CLEANING
  Open top cover
  
```

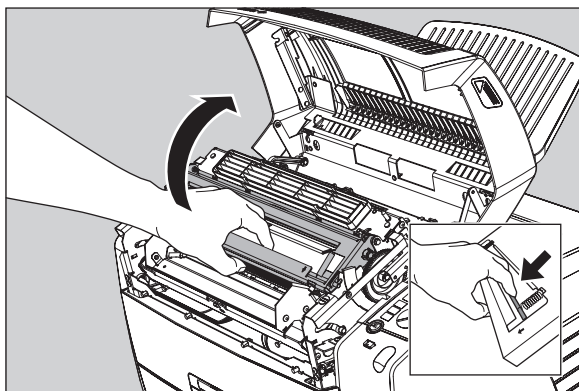
- 5 Open the top cover.



- 6 As soon as the top cover is opened, the 'Thermal head cleaning' screen continues giving the following instructions:

```
THERMAL HEAD  [OK]
CLEANING
Clean thermal head
Close top cover
```

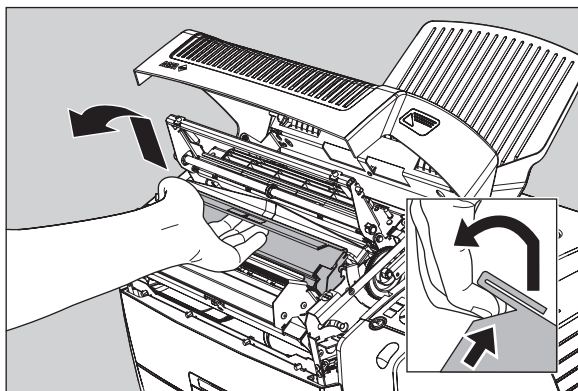
- 7 Open the hold-down bracket.



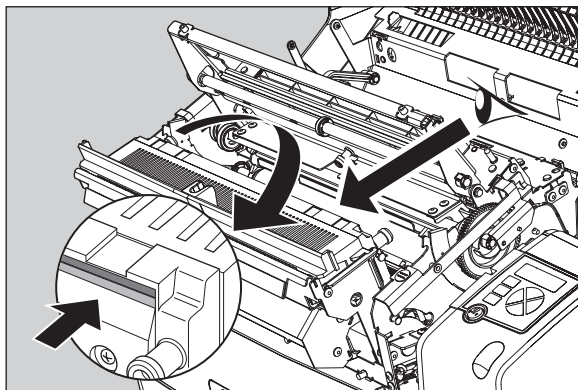
- 8 Open the print head unit.



WARNING: The print head unit can be warm.

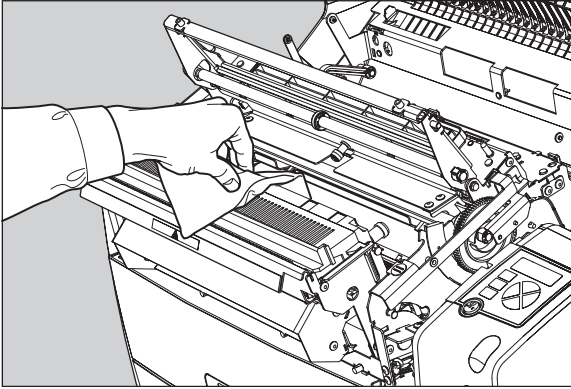


- 9 Locate and check on sight the print head resistor line.



Note: Be careful not to touch the print head resistor line with your fingers.

10 Clean the print head resistor line.



Gently pass over the resistor line a few times with a lint free cloth, slightly moistened with Isopropyl alcohol or Ethanol.

Do this only in one direction, i.e. from left to right, without lifting the cloth.



Note: Do not apply any pressure on the print head because this pressure may cause damage on the interconnections underneath the print head.

11 Close the print head unit, the hold-down bracket and finally the top cover.

After you have cleaned the print head resistor line and you have closed the top cover, you will return automatically to the Select calibration menu (see step 3).



Note: If residue dust is present as part of the cleaning procedure it will disappear after a few prints.

12 Press the Escape key to return to the key-operator main menu.

Troubleshooting checklist

The table below lists some general problems, which can occur when working with the Drystar AXYS.

- The Drystar AXYS does not print.

Action	Refer to the Reference manual
Check the Drystar AXYS	“Checking the status indicator LED” on page 241
	“Checking the connections” on page 242
	“Checking the print queue” on page 244
Remove a jammed film	“Film input tray jams” on page 130 of this manual
	“Film transport jams (clearing from the top)” on page 133 of this manual
	“Unauthorized opening of the printer” on page 136 of this manual
Resolve error messages	“Checking error messages” on page 243
Handle CF-card errors	“Checking CF-card error messages” on page 244
Resolve film identification problems	“No identification code detected” on page 138 of this manual

- The quality of the printed images is bad (printing remains possible).

Action	Refer to
Resolve film quality problems	“Persistent white dots or lines appear in the transport direction” on page 261
Resolve warning messages	“Warning messages” on page 262
Resolve maintenance messages	“Maintenance messages” on page 263



WARNING: Have electrical or mechanical defects repaired by skilled personnel only!

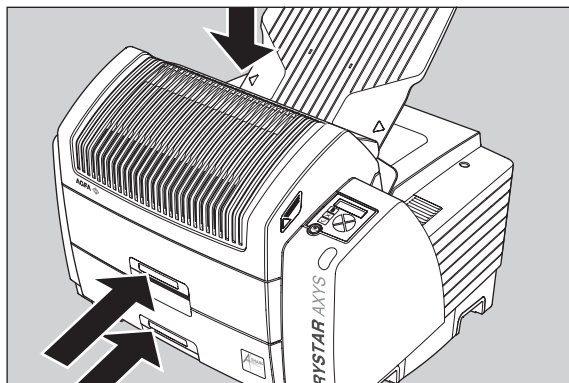
Clearing of film jams

A film jam can be situated either:

- In the input tray section. Refer to “[Film input tray jams](#)” on page 130 .
- In the top section. Refer to “[Film transport jams \(clearing from the top\)](#)” on page 133 .

Jams can be caused by:

- Opening the top cover or input tray while a film is actually being printed. Refer to “[Unauthorized opening of the printer](#)” on page 136 .
- Loading films incorrectly. Refer to “[Film identification problems](#)” on page 137 .



Film transport jams
(clearing from the
top section)

Film feed jams (clearing
from the input tray)



Caution: Film jam removal or cleaning the printer thermal head can be done without switching the power off. Nevertheless, care should be taken and the following instructions should be respected:



WARNING: Never reuse a jammed film. This may cause damage to the thermal head and/or dust problems.

Film input tray jams

A film jam in the input tray can occur when the Drystar AXYS is opened while a film is currently printed, or when an individual film is incorrectly inserted in the input tray. Refer also to “[Film identification problems](#)” on page 137 .

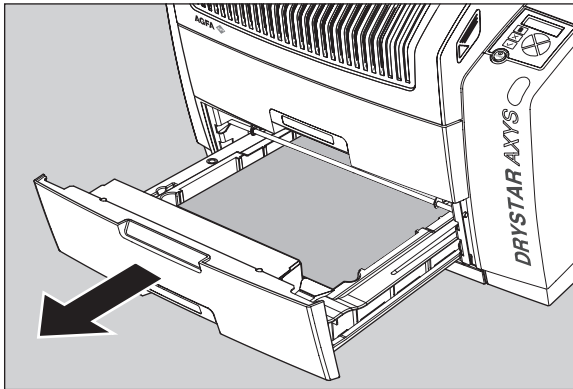
The following screen indicates that a jam occurred in the input tray.

```

FILM JAM!
Open LOWER INPUT
tray and clear
film path
  
```

To remove a jammed film in the input tray:

- 1 Open the film input tray.

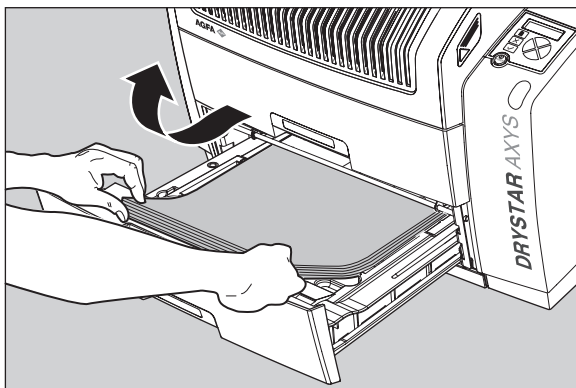


If a film is jammed, gently remove the sheet. Reposition the film stack in the film tray, making sure that all the sheets are kept correctly (refer to “[Loading films](#)” on page 76).

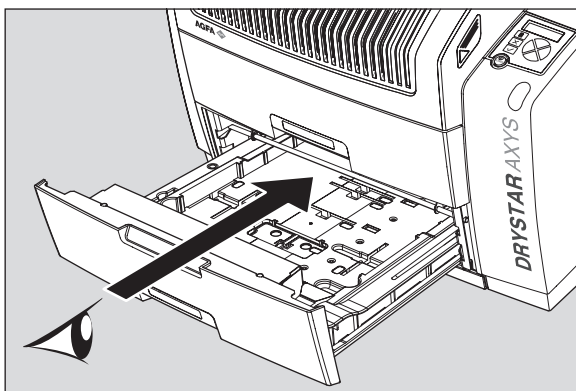


Note: Never use force to clear the jammed film. If it is not possible to gently remove the jammed film, call your local service organization.

- 2 To get a clear view, it may be necessary to remove any remaining film sheets, including the protective (white) sheet.

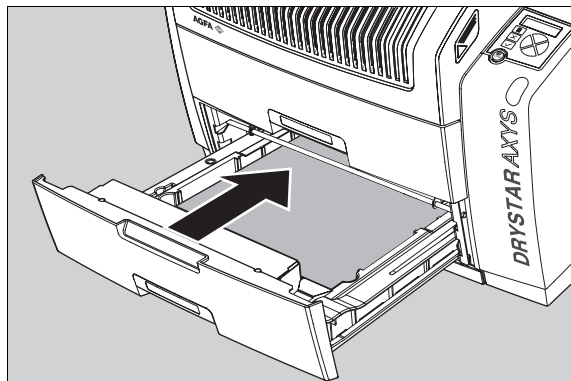


- 3 Check if the film feed section of the input tray is clear.



Reposition the film stack in the film tray, making sure that all the sheets are kept correctly in place (refer to [“Loading films”](#) on page 76).

4 Close the film input tray.



Film transport jams (clearing from the top)

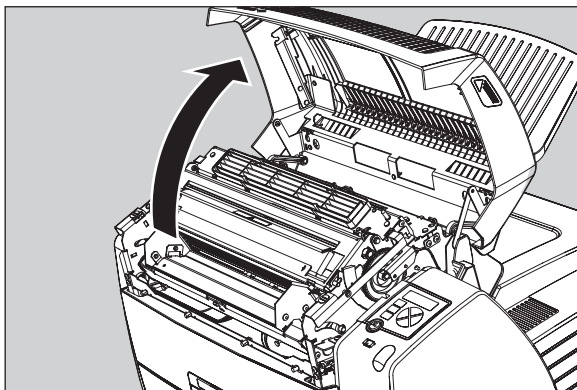
The following screen indicates that a jam occurred in the upper section of the film transport system.



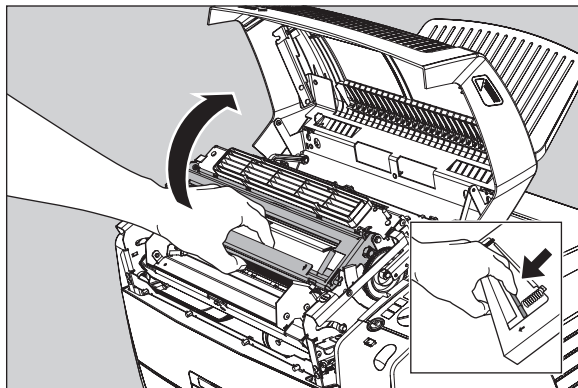
Note: Please note that instructions for removing a film jam in the transport section are present on a sticker at the inside of the top cover.

To remove a jammed film in the transport system:

- 1 Open the top cover.



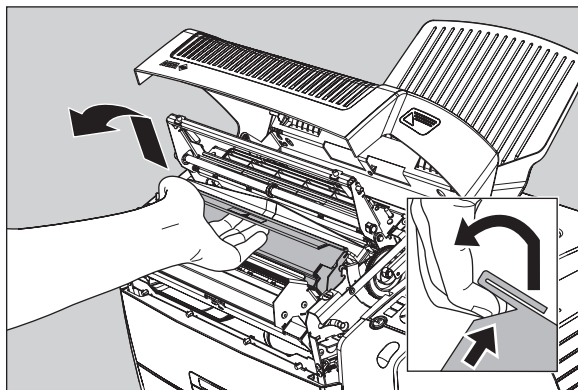
2 Open the hold-down bracket.



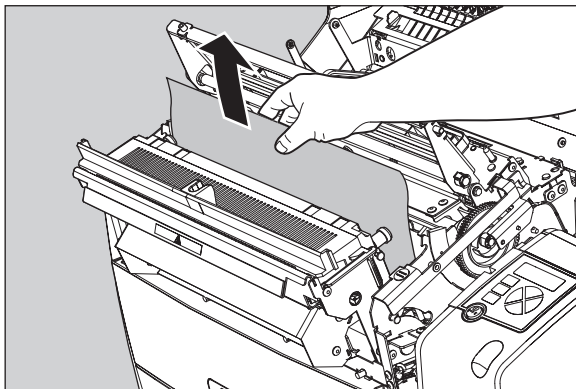
3 Open the print head unit.



WARNING: The print head unit can be warm.



- 4 Gently remove the film sheet(s).



Note: Never use force to clear the jammed film. If it is not possible to gently remove the jammed film by pressing the transport buttons, proceed with the procedure as follows.

Note: Verify that no film sheets remain in the print head compartment.

- 5 If the film jam has been cleared, close the printer. You can resume work.



WARNING: Never reuse a jammed film. This may cause damage to the thermal head and/or dust problems.



Note: If the jam is still not cleared, call your local service organization.

Unauthorized opening of the printer

A jam can be caused by opening the printer covers or one of the input trays while a film is actually being printed.

The following screen indicates that a jam has occurred:

```
A FILM JAM was
caused due to
opening of the
Printer during
printing. Next time
wait until printer
is in "Ready"
condition. _ _ _ _ )
```

- 1 Remove the jammed sheet.
Refer to [“Clearing of film jams”](#) on page 129 .
- 2 Press the Confirm key to continue.
- 3 Make sure to follow carefully the procedures as described in this manual before attempting to open the printer.

Refer to [“Switching off the Drystar AXYS”](#) on page 63 .

Refer to [“Switching off the Drystar AXYS”](#) on page 63 .

Film identification problems

When you load a new film pack, the new Film Identification tag is read and the tray film format and type are set based upon the info in the Film Identification tag (RF-tag).

This tag is only readable when the film pack is inserted in the correct way.

There are three possible error messages regarding film identification:

- [“No identification code detected” on page 138](#)
- [“Invalid content of Film Identification tag” on page 141](#)
- [“Invalid content of Film Identification tag” on page 141](#)

The following sections describe the solution for each of these problems in more detail.

No identification code detected

This error message appears when the Film Identification tag is not readable.

There are two possible solutions for this problem:

- Reload the current film pack or load another film pack
- Overrule the Film Identification tag of the film pack

To reload the current or another film pack

- 1 In case the Drystar AXYS does not start printing after re-inserting a film pack, first check if this film pack is inserted correctly.

If the Drystar AXYS still does not resume printing, the following message will appear:

```
UPPER INPUT TRAY:  
NO IDENTIFICATION  
CODE DETECTED for  
current film pack.  
  
Remove and re-insert  
film pack -including  
protective sheet-  
properly, follow  
loading instructions
```

- 2 Open the input tray and check again if the film pack is inserted correctly. If you re-insert the film pack, the Drystar AXYS will perform the same check sequence until printing is resumed.

To overrule the Film Identification tag of the film pack

If the “Overrule RF-tag Reading” setting is active, you can overrule the Film Identification tag setting of the current film pack. In this case you can continue printing using a limited Maximum Density.



Note: Only your local service organization has the possibility to enable the “Overrule RF-tag Reading” setting!

- 1 In case the Drystar AXYS does not start printing after inserting a new film pack, check if this film pack is inserted correctly.

If the film pack is inserted correctly and the Drystar AXYS does not resume printing, the following message will appear:

```
UPPER INPUT TRAY:
NO IDENTIFICATION
CODE DETECTED for
current film Pack.

Remove and re-insert
film pack -including
protective sheet-
properly, follow
loading instructions
```

- 2 To continue with the current (unidentified) film pack, press the Continue button.

The following message is displayed:

```
UPPER INPUT TRAY:
NO IDENTIFICATION
CODE DETECTED or
READ ERROR in tray.

Please INSERT
CURRENT FILM PACK or
call service.
```

If you wish, you can try again to re-insert the current or an other film pack. Open the input tray to initiate the loading sequence. If you re-insert a film pack, the Drystar AXYS will perform the check sequence.

3 Press the Confirm button.

- If the “Overrule RF-tag Reading” Setting is active, the following message is displayed:

```
OVERRULE  
IDENTIFICATION CODE  
IS ACTIVE  
Dmax is limited due  
(to safety reasons)
```

- If the “Overrule RF-tag Reading” Setting is not activated, the following message will be displayed:

```
UPPER INPUT TRAY:  
NO IDENTIFICATION  
CODE DETECTED.  
Printing is disabled  
  
Re-enable printing  
by inserting correct  
film media pack.
```



Note: In this case, press the Confirm key to initiate the loading procedure again or call your local service organization to enable the “Overrule RF-tag Reading” Setting.

4 Press the Confirm key again to resume printing using a limited Maximum Density.

Invalid content of Film Identification tag

When you insert a new film pack with invalid content in the Film Identification tag, the following message is displayed:

```
UPPER INPUT TRAY:  
INVALID CONTENT in  
IDENTIFICATION CODE.  
Please call service.
```

Try loading another film pack, or call your local service organization to resolve this problem.

Film overrun from current pack

The following message is presented when more than 110 copies are printed from the current film pack:

```
UPPER INPUT TRAY:  
FILM OVERRUN,  
MORE THAN ALLOWED  
FILMS PRINTED FROM  
  
|THIS PACK, please  
insert other film  
pack.  
|_ _ _ _ _|
```

Reload a new film pack to resolve this problem.


A Equipment information sheet


This appendix covers the following sections:

- [Specifications](#)
- [Viewing the system info area on a film](#)

Specifications

Product description	
Type of product	Printer
Commercial name	Drystar AXYS
Original seller/manufacturer	Agfa-Gevaert N.V.
Labelling	
TÜV-, cULus-Certification Mark, CE-marking	
CCC Mark	
Dimensions	
Dimensions (approx. values in cm)	Unpacked: width 72.8, length 71.5, height 67.6 Packed: width 89, length 100, height 80
Weight	Unpacked: approx. 90 kg Packed: approx. 128 kg
RAM memory	512 Mb
Internal mass storage media	Hard Disk
External mass storage media	Compact Flash Type II
Electrical connection	
Operating voltage	100-120 V; 220-240 V AC
No external main fuses	
Mains frequency	50/60 Hz

Network connectivity	
Ethernet / connectors	RJ45 twisted pair for 10/100Base-TX; Serial RS232 connection
Network protocols (TCP/IP services)	FTP, Telnet, HTTP
Image formats	DICOM (Default) TIFF
Postscript	Not available
Power consumption - heat dissipation	
During operation	250 W - 900 kJ/h
In stand-by	70 W - 252 kJ/h
Peak power (absolute max. rating)	530 W - 1908 kJ/h
Protection against	
Electrical shocks	Class 1 (grounded)
Ingress of water	IPXØ
Environmental conditions (operation)	
Room temperature	Between +15°C and +30°C
Relative humidity	Between 20% and 75% Note: Films may not become wet!
Atmospheric pressure	70 kPa - 106 kPa
Environmental storage conditions	
	<i>Note: Climate conditions for storage are in accordance with EN60721-3-1-class 1K4.</i>
Room temperature	Between -25°C and 55°C (storage)
Relative humidity	Between 10% and 100%
Absolute humidity	Between 0.1 g/m3 and 35 g/m3
Rate of change of temperature	1°C/min
Atmospheric pressure	70 kPa - 106 kPa

Environmental transport conditions	
	<i>Note: Climate conditions for transport are in accordance with EN60721-3-2-class 2K4.</i>
Temperature	Between -40°C and 70°C (transport)
Relative humidity not combined with rapid temperature changes	95% at +45°C
Noise emission (method of measurement in accordance with DIN 45635 part 19)	
During operation	Max. 64 dBA
In stand-by	Max. 54 dBA
Total acoustic A-weighted noise power	
During operation	62 dB (= 6.4Bel = 6.4B)
In stand-by	53 dB (= 5.3Bel = 5.3B)
Consumables	
Drystar DT 2B and Drystar DT 2C	8x10", 10x12", 11x14", 14x14" and 14x17" film sizes
Drystar DT 2 Mammo (optional)	8x10", 10x12" and 11x14" film sizes
Print technology	
Direct thermal printing	
Reliability	
Estimated product life (if regularly serviced and maintained according to Agfa instructions)	> 5 years
Service interventions	Max. 2 interventions / 3 years
Earthquake (standard)	Meets the CA requirements

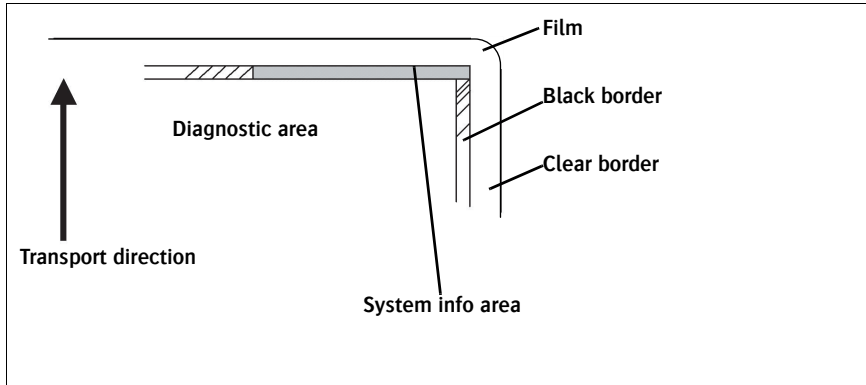
Imaging Array - Diagnostic area - General radiography				
8x10"	8" dimensions		10" dimensions	
	pixels	mm	pixels	mm
	3852	192,6	4880	244

Imaging Array - Diagnostic area - General radiography				
10x12"	10" dimensions		12" dimensions	
	pixels	mm	pixels	mm
	4880	244	5860	293
11x14"	11" dimensions		14" dimensions	
	pixels	mm	pixels	mm
	5376	268,8	6922	346,1
14x14"	14" dimensions		14" dimensions	
	pixels	mm	pixels	mm
	6882	344,1	6882	344,1
14x17"	14" dimensions		17" dimensions	
	pixels	mm	pixels	mm
	6922	346,1	8368	418,4

Imaging Array - Diagnostic area - Mammography (optional)				
8x10"	8" dimensions		10" dimensions	
	pixels	mm	pixels	mm
	3828	191,4	4958	247,9
10x12"	10" dimensions		12" dimensions	
	pixels	mm	pixels	mm
	4892	244,6	5810	290,5
11x14"	11" dimensions		14" dimensions	
	pixels	mm	pixels	mm
	5376	268,8	6922	346,1

Viewing the system info area on a film

On the top right corner of each film, a “System info” area will be printed. This info can only be read using a magnifying glass.



The System info area contains info about:

- Printer: (serial number, densitometer info, film counts, software version, etc.),
- Controller (image source, date, time, etc.).

For more detailed information, refer to the Drystar AXYS Service documentation.

B Quality Control Charts

.....

This appendix covers the following topics:

- [Charts for general radiography QC](#)
- [Charts for mammography QC \(optional\)](#)

Charts for general radiography QC

Quality Control for General radiography applications

Chart 1

Drystar AXYS : Determination of Operating Levels

Imager Type: _____ Serial #: _____ Date _____
 Film Type: _____ Emulsion #: _____ Input Tray _____
 Densitometer: _____ (default selection)

Step 1: Print QC Test images on five consecutive days. Record the optical densities measurements in the tables below. After five days, average the values to determine the operating (aim) levels for each of the parameters.

	Day 1	Day 2	Day 3	Day 4	Day 5
Month					
Day					
Initials					

Low Density					
<i>Average of 5 Values = calculated reference "Low Density" level</i>					

Mid Density					
<i>Average of 5 Values = calculated reference "Mid Density" level</i>					

High Density					
<i>Average of 5 Values = calculated reference "High Density" level</i>					

Step 2: Copy the calculated reference levels to Charts 2A/B ("Daily Density Control Chart")

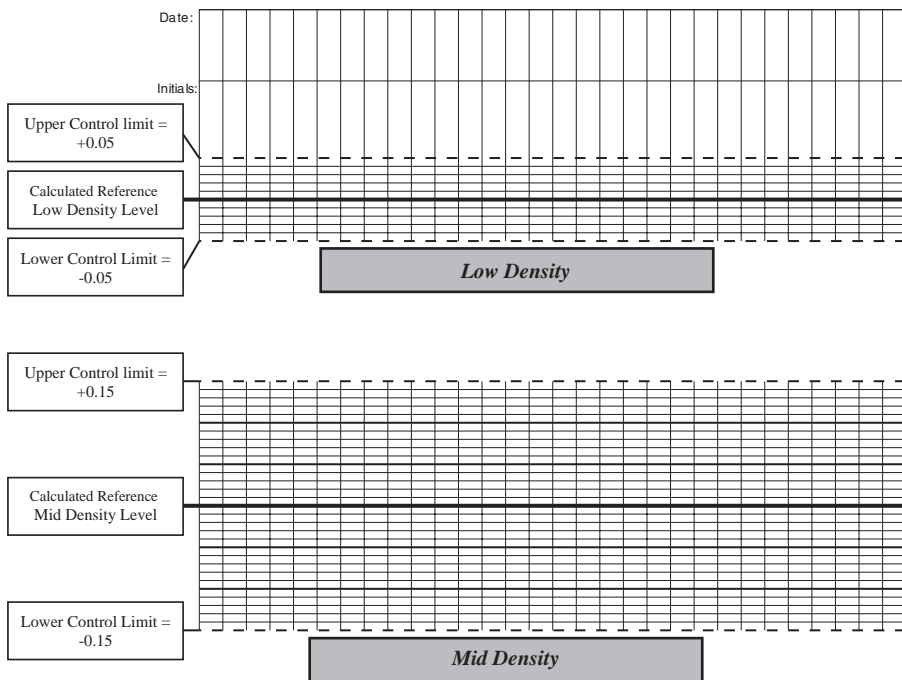
Quality Control for General radiography applications

Chart 2A

Drystar AXYS Daily Density Control Chart

Imager Type: _____ Serial #: _____ Film Type: _____ Emul #: _____

Densitometer: _____ (default selection) Input Tray: _____



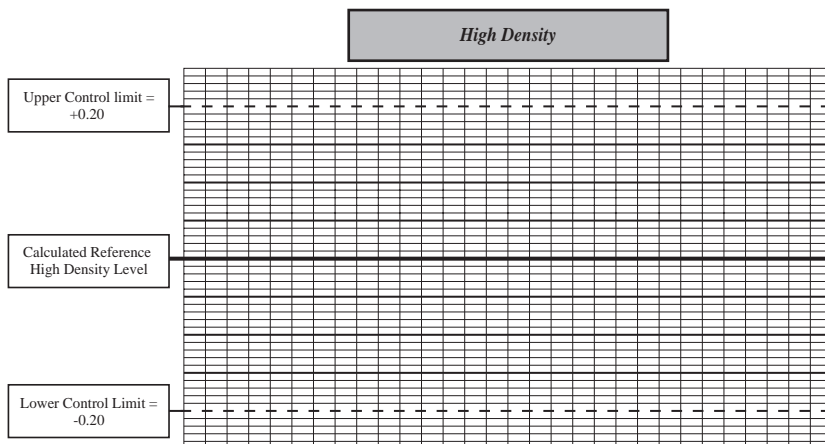
Quality Control for General radiography applications

Chart 2B

Drystar AXYS Daily Density Control Chart

Imager Type: _____ Serial #: _____ Film Type: _____ Emul #: _____

Densitometer: _____ (default selection) Input Tray: _____



Quality Control for

Chart 3

General radiography applications

Drystar AXYS Artifacts and Spatial Resolution Control Chart

Test Frequency: Weekly

Drystar AXYS Serial # _____

Input Tray: _____

Initial Reference Test Date	
Initial Reference Artifacts	
Initial Reference Dot Visibility	
Initial Reference Low Contrast	

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Quality Control for General radiography applications

Drystar AXYS Geometric Consistency Control Chart

Test Frequency: Annually or as required

Drystar AXYS Serial # _____

Input Tray: _____

Reference Dimensions		Measured Dimensions		Consistency		Aspect Ratio	
Date:		Date:					
A_{ref}		A:		A/A_{ref}		A/B	
B_{ref}		B:		B/B_{ref}			

Reference Dimensions		Measured Dimensions		Consistency		Aspect Ratio	
Date:		Date:					
A_{ref}		A:		A/A_{ref}		A/B	
B_{ref}		B:		B/B_{ref}			

Charts for mammography QC (optional)

Quality Control for

Chart 1

Mammography applications

Drystar AXYS : Determination of Operating Levels

Imager Type: _____ Serial #: _____ Date _____
 Film Type: _____ Emulsion #: _____ Input Tray: _____
 Densitometer: _____ (default selection)

Step 1: Print QC Test images on five consecutive days. Record the optical densities measurements in the tables below. After five days, average the values to determine the reference levels for each of the parameters.

	Day 1	Day 2	Day 3	Day 4	Day 5
Month					
Date					
Initials					

Base + Fog					
Average of 5 values = calculated reference "Base + Fog" level					

Low Density					
Average of 5 values = calculated reference "Low Density" level					

Mid Density					
Average of 5 values = calculated reference "Mid Density" level					

High Density					
Average of 5 values = calculated reference "High Density" level					

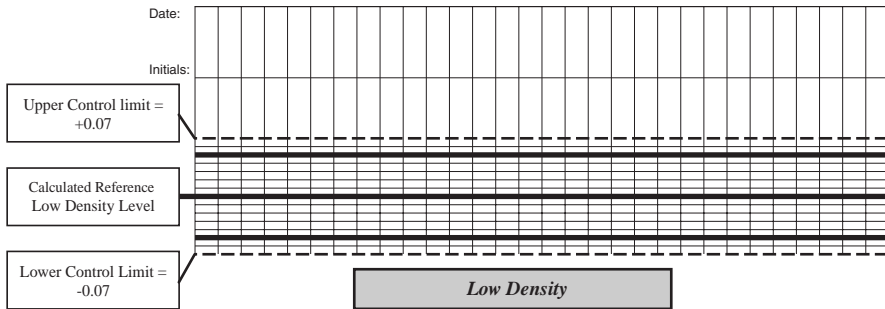
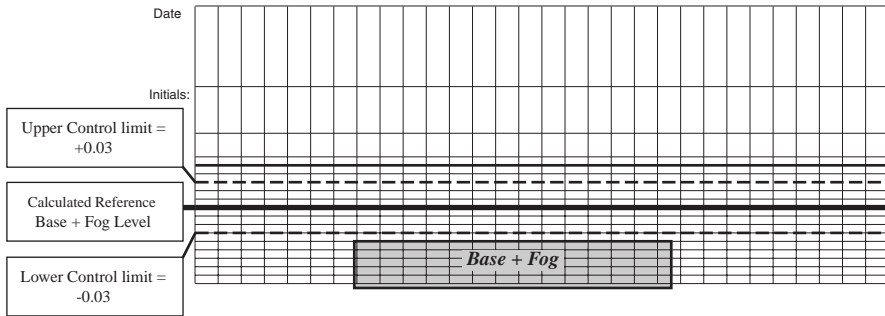
Step 2: Copy the calculated reference levels to Charts 2A/B ('Daily Density Control Chart')

Quality Control for Mammography applications

Chart 2A

Drystar AXYS Daily Density Control Chart

Imager Type: _____ Serial #: _____ Film Type: _____ Emul #: _____
Densitometer: _____ (default selection) Input Tray: _____



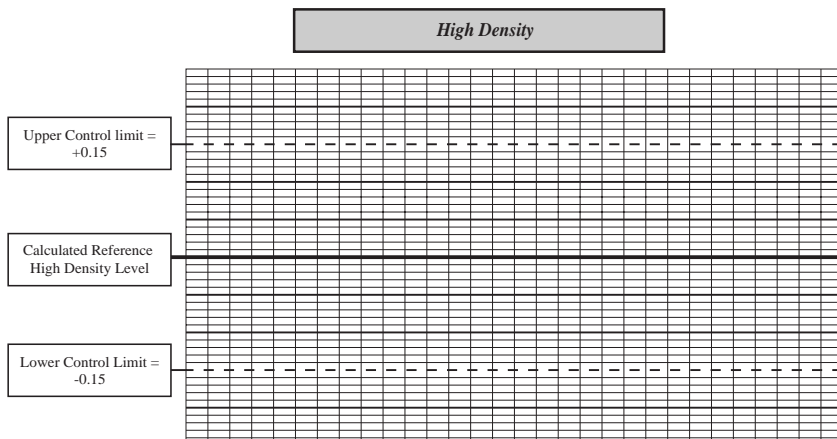
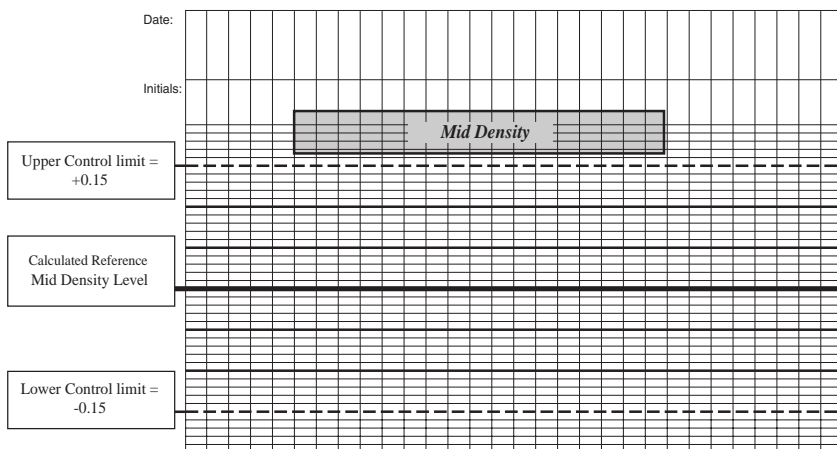
Quality Control for Mammography applications

Chart 2B

Drystar AXYS Daily Density Control Chart

Imager Type: _____ Serial #: _____ Film Type: _____ Emul #: _____

Densitometer: _____ (default selection) Input Tray: _____



Quality Control for Mammography applications

Drystar AXYS Artifacts and Spatial Resolution Control Chart

Test Frequency: Weekly Drystar AXYS Serial # _____

Input Tray: _____

Initial Reference Test Date	
Initial Reference Artifacts	
Initial Reference Dot Visibility	
Initial Reference Low Contrast	

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Month					
Day					
Artifacts					
Visibility of all Dots					
Low Contrast Visibility					

Quality Control for

Chart 4

Mammography applications

Drystar AXYS Geometric Consistency Control Chart

Test Frequency: Annually or as required

Drystar AXYS Serial # _____

Input Tray: _____

Reference Dimensions Date:		Measured Dimensions Date:		Consistency		Aspect Ratio	
A_{ref}		A:		A/A_{ref}		A/B	
B_{ref}		B:		B/B_{ref}			

Reference Dimensions Date:		Measured Dimensions Date:		Consistency		Aspect Ratio	
A_{ref}		A:		A/A_{ref}		A/B	
B_{ref}		B:		B/B_{ref}			

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