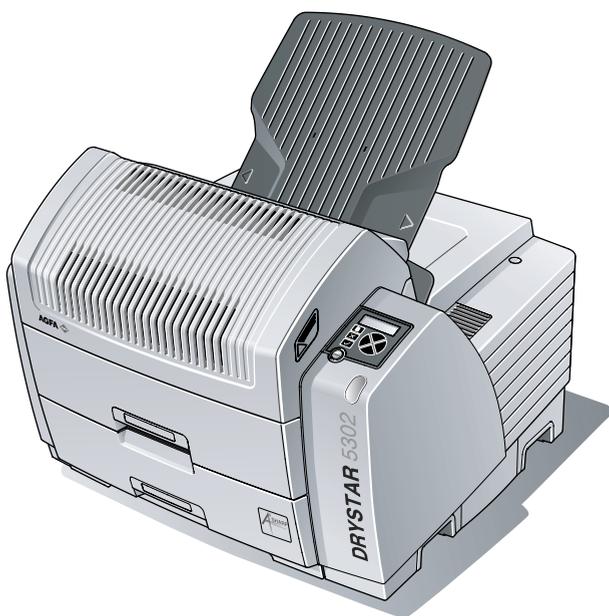


Drystar 5302

Reference manual



For more information on Agfa products and Agfa HealthCare products, please visit www.agfa.com, your Point of Knowledge.

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Introducing the Drystar 5302

This chapter introduces the Drystar 5302 to the user and draws attention to important safety precautions.

- [Drystar 5302 features](#)
- [Safety precautions](#)
- [Security precautions](#)
- [Safety compliance](#)
- [Privacy and security](#)
- [Operating modes](#)
- [Control modes \(local and remote\)](#)
- [The local user interface](#)
- [Switching on the Drystar 5302](#)
- [Switching off the Drystar 5302](#)

Drystar 5302 features

The Drystar 5302 is a **dry digital tabletop printer** for producing medical diagnostic images.

It can print multiple formats (8x10", 10x12", 11x14", 14x14" and 14x17") of blue-based (Drystar DT 2B) and clear-based (Drystar DT 2C) film and offers crisp, dense grayscale images.



The Drystar 5302 is a Dicom-only network printer.

The Drystar 5302 offers the following features:

- Dry technology for printing diagnostic quality hardcopies in full daylight offers important advantages: no chemistry, no wet processing, simple cleaning procedures, no time-consuming adjustments, no darkroom and no chemical disposal costs. The consumables can be loaded in full daylight.
- With its compact design, the Drystar 5302 needs little workspace and allows easy customer access. Maintenance and service activities are reduced to a minimum.
- The direct thermal printing system provides grayscale images with high quality: 320 pixels per inch resolution, each pixel with 12 bit contrast resolution and an optical density up to 3.1 (measured with an X-Rite 310 densitometer).
- Multiple film formats (8x10", 10x12", 11x14", 14x14" and 14x17") can be used. Any combination of two film formats can be used "online". Both input trays can be adjusted for all film formats.
- The input trays of the Drystar 5302 are equipped with an RF-tag reader, which automatically traces the films used in the printer and protects the printer when detecting non-identified media.
- Number of input trays.

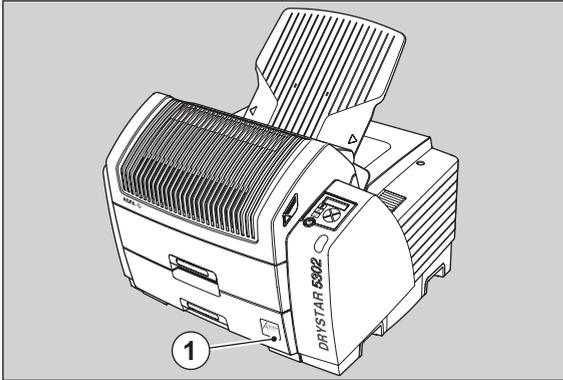
The Drystar 5302 is equipped with 2 input trays. Both input trays can use multiple formats (8x10" up to 14x17").

■ Number of output trays.

The Drystar 5302 is equipped with 1 output tray, which is suitable for the multiple formats without any adjustment.

■ Integrated A#sharp technology

A#sharp is a technology that enhances image sharpness for the Drystar 5302. An A#sharp label on the lower tray shows that the imager is equipped with this technology.



1

A#Sharp label

Network features

- The modular design offers optimal application functionality for your specific networking requirements.

In a network configuration, the Drystar 5302 is fully compatible with Agfa's diagnostic imaging systems, including the ADC Compact and ADC Quality System software, the Paxport and the entire line of Impax Review Systems, Storage Stations and Transmitting Stations. For more information, contact your Agfa representative.

- The functionality of the Drystar 5302 is completely controlled via the network.
- You can control the working of the Drystar 5302 via the local keypad or via a remote PC with a functioning web browser.

Customizable features

- Consumables.

The Drystar 5302 can handle Drystar DT 2B and Drystar DT 2C consumables, both in multiple formats (8x10" up to 14x17").

Software license information

- The Drystar 5302 uses software developed by the Apache Software Foundation (<http://www.apache.org/licenses/LICENSE>).

Safety precautions



The Drystar 5302 must only be operated according to its specifications and its intended use. Any operation not corresponding to the specifications or intended use may result in hazards, which in turn may lead to serious injuries or fatal accidents (for example electric shocks). AGFA will not assume any liability whatsoever in these cases.



All images created using any image technology can show artifacts, which could be mixed up with diagnostic relevant information. If there is any doubt that the diagnostic information could not be absolutely true, additional investigations must be performed to get a clear diagnostic.

When operating or maintaining the Drystar 5302, always observe the following safety guidelines:

- Have electrical or mechanical defects repaired by qualified personnel only!
- Do not override or disconnect the integrated safety features.
- Ventilation openings should not be covered.
- Always switch off the Drystar 5302 and disconnect the power cord from the outlet before carrying out any maintenance work.



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:

Always take into account the markings provided on the inside and outside of the printer. A brief overview of these markings and their meaning is given below.



Safety warning, indicating that the Drystar 5302 manuals should be consulted before making any connections to other equipment. The use of accessory equipment not complying with the equivalent safety requirements of this printer may lead to a reduced level of safety of the resulting system. Consideration relating to the choice of accessory equipment shall include:

- Use of the accessory equipment in the patient vicinity,
- Evidence that the safety certification of the accessory equipment has been performed in accordance with the appropriate IEC 601-1 and IEC 601-1-2 harmonized national standard.

In addition all configurations must comply with the medical electrical systems standard IEC 601-1-2. The party that makes the connections acts as system configurator and is responsible for complying with the systems standard.

If required contact your local service organization.

	<p>Caution hot: Keep hands clear from the thermal print head.</p>
	<p>In order to reduce the risk of electric shock, do not remove any covers.</p>
	<p>Type B equipment: Indicates that the Drystar 5302 complies with the limits for type B equipment.</p>
	<p>Supplementary protective earth connector: Provides a connection between the Drystar 5302 and the potential equalization bus bar of the electrical system as found in medical environments. This plug should never be unplugged before the power is turned off and the power plug has been removed.</p>
	<p>Intergrounding connector: Provides a connection between the printer and other equipment, which might exhibit minor ground potential differences. These differences may degrade the quality of communication between different equipment. Never remove connections to this terminal.</p>
	<p>Protective earth (ground): Provides a connection between the printer and the protective earth of the mains. Do not remove this connection, because this will have a negative influence on the leakage current.</p>
	<p>Power button: Note that the power cord has to be disconnected from the wall outlet in order to disconnect the unit entirely from the mains.</p>
	<p>Precautions for use in USA only: Make sure that the circuit is single-phase center-tapped, if the printer is connected to a 240 V/60 Hz source instead of a 120 V/60 Hz source.</p>

Transport after installation

Before moving the printer, always switch off the machine. The Drystar 5302 should be transported by 3 persons or if not possible with 2. Refer to the Installation manual for more information. When doing this, the stability and the structure of the tabletop have to be taken into account. The printer should not be placed on a soft surface, since this might prevent appropriate ventilation and cause overheating. The printer must only be transported with all covers closed. The appliance may not be transported continuously from one location to the other. Do not lift the printer by the output tray.

Waste disposal and environmental regulations



In most countries Drystar film is considered industrial waste and consequently it is not allowed to be disposed as household waste. Please consult your local waste disposal regulations. Agfa recommends having waste Drystar film collected by a licensed company.

After its life span, do not dispose of the Drystar 5302 without consideration of local waste disposal legislation and regulations. Please consult your local service organization.

Security precautions



CAUTION (U.S.A. only): In accordance with U.S. Law, this device can only be sold to or ordered by a licensed physician.



Printed images should be treated as patient records and should only be viewed by authorized personnel.

Safety compliance

EMC issues

- **USA:** This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the Drystar 5302 Reference manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at its own expense.
If required, contact your local service organization.
- **Canada:** This class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
- **EC:** This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Compliances

The Drystar 5302 has been tested and found to comply with the following international standards and regulations:

- the Medical Devices Directive 93/42/EEC
- CFR Part 21
- The Drystar 5302 contains an automatic QC feature that has been designed to comply with the grayscale reproduction constancy test, according to the international standard IEC 1223-2-4.

Safety standards

- IEC 60601-1 + A1 + A2
- EN 60601-1 + A1 + A2
- UL 60601-1
- CSA 22.2 No. 601.1-M90
- GB4943-2001 (for CCC-Mark)

Radio-interference regulations (interference suppression)

- FCC Rules 47 CFR part 15 subpart B
- IEC 60601-1-2
- CISPR 11, class A
- CISPR 22, class A
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 61000-4-5
- IEC 61000-4-6
- IEC 61000-3-2
- IEC 61000-3-3
- IEC 61000-4-11
- ETSI 300330
- GB9254-1998(Class A) (for CCC-Mark)
- GB17625.1-2003 (for CCC-Mark)

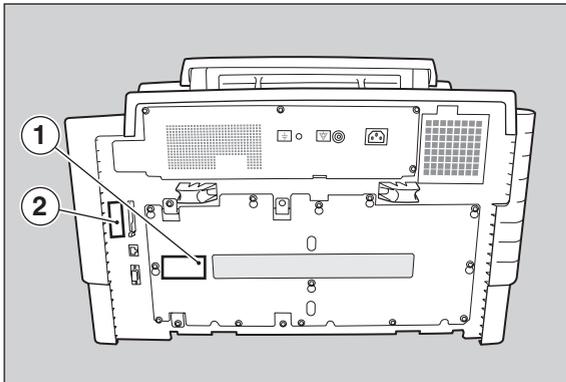
Seismic (earthquake) requirements

The printer meets the CA (Californian) requirements.

Labels



The Drystar 5302 carries the CE, TÜV, cULus and CCC labels.



1	CCC label
2	CE, TÜV and cULus label

Privacy and security

Within the health care industry, several standardization efforts are ongoing as a response to Privacy and Security legislation and regulations. The purpose of this standardization for hospitals and vendors is to enable information sharing, interoperability and to support the workflow of hospitals in a multiple vendor environment.

In order to allow hospitals to comply with HIPAA regulations (Health Insurance Portability and Accountability Act) and to meet the IHE standards (Integrated Healthcare Enterprise) some security features are included in the user interface of the Drystar 5302 (available via the web pages only: under 'Security tools'. Refer to the chapter *'Controlling the Drystar 5302 via a remote PC (with browser)'*):

- User authentication. The administrator can configure different user accounts. Each account consists of a user name and a password.
- Audit logging. This implies logging to a central log server of specific Drystar 5302 'actions', e.g. start-up/shut down, user authentication (failures), received print job ID information, etc.
- Node authentication, using certificates. Working with SSL (Secure Sockets Layer) allows secure communications over an insecure network. SSL is the security layer on top of TCP/IP.

The first two functions are available when access to the Administrator is granted (i.e. when the Administrator password has been correctly entered). To activate the SSL, please contact your Agfa representative.

Node authentication, certificates and Certification Authority

Each device - connected to a network - will receive a unique identifier: the X.509 certificate, a digital passport. Any device on the network is only allowed to communicate with another node of which it is holding the certificate in a 'communication allowed' table.

A Certification Authority (CA) is responsible for creating a certificate. The CA can be the hospital, Agfa or a third party.

This CA distributes the certificate to the hospital security responsible or service technician, who for his part:

- Imports the device certificate, created by the CA.
- Imports the certificates of all peer devices with which communication is authorized, i.e. creates the list of 'communication allowed' device certificates.

Operating modes

The Drystar 5302 can be operated in five modes: Operator mode, Key-operator mode, Service mode, Specialist mode and Administrator mode.

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)'*.

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 5302 Reference manual only. Refer to the chapter *'Advanced operation (Key-operator mode)'*.

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.

Control modes (local and remote)

You can control the working of the Drystar 5302 via the local keypad or via a networked remote PC.

The table below gives an overview of the operating modes you can access locally and/or via the remote PC.

Local	Password protected	Remote	Password protected
Operator mode	No	Operator mode	Yes
Key-operator mode	No	Key-operator mode	Yes
—	—	Service mode	Yes
—	—	Specialist mode	Yes
—	—	Administrator	Yes

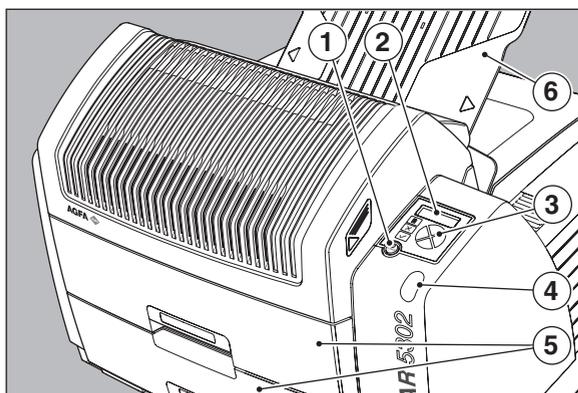
The manual describes the controlling of the Drystar 5302 via the local keypad. The menus for controlling the Drystar 5302 via a remote PC are structured in the same way and sometimes they offer even more possibilities. Refer to the chapter '[Controlling the Drystar 5302 via a remote PC \(with browser\)](#)'.

The local user interface

The Drystar 5302 interfaces with the user via the following controls:

- Power/Reset button;
- a keypad and a display;
- a status indicator LED;
- audio signals.

Overview of user interface controls



1	Power/Reset button
2	Display
3	Keypad
4	Status indicator LED
5	Film input trays
6	Film output tray



Never try to open the printer when the Drystar 5302 is printing a film. Always follow the instructions on the display!

The status indicator LED

On the right side of the display, an LED indicates the status of the Drystar 5302.

Colour / Light		Status	Action
Green	Constant	Ready (stand-by)	Proceed
	Blinking	Busy or in key-operator mode	Wait
Red	Blinking	Warning status	Check the display for messages. Refer to ' Checking the status indicator LED ' on page 177.
	Constant	Error status	

The control buttons

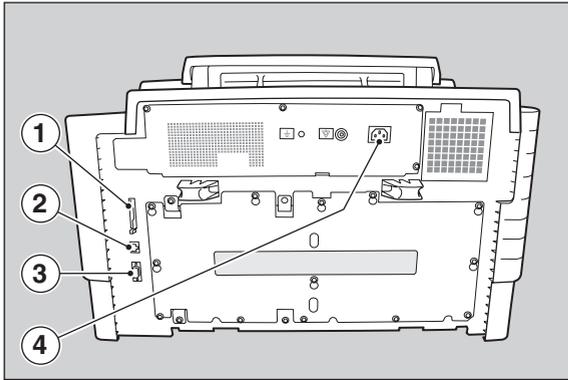
One control button has been provided:

	Power/Reset button	<ul style="list-style-type: none"> • To power on or off the printer. • To reset the printer.
---	------------------------------	--



Do NOT press the Power/Reset button without first following the procedure to stop printing when the Drystar 5302 is printing a film. Refer to '[Switching off the Drystar 5302](#)' on page 34.

Rear panel



At the rear side of the printer, one slot and three connectors are available:

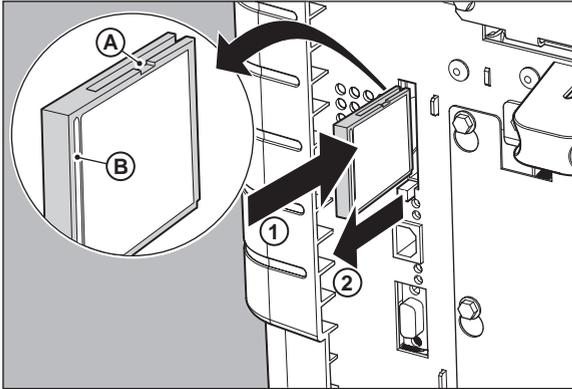
1	CF-card slot	<ul style="list-style-type: none"> To insert an external CF-card for software installation, back-up, etc.
2	Network connector	<ul style="list-style-type: none"> To connect to the hospital network.
3	Input/output connector	<ul style="list-style-type: none"> To connect a terminal PC (used by the Service engineer).
4	Power connector	<ul style="list-style-type: none"> To connect the printer power cord.

Working with Compact flash cards (CF-card)

The Drystar 5302 is equipped with an external CF-card slot, which is located at the rear side.

Inserting a CF-card

To insert a CF-card in the Drystar 5302:



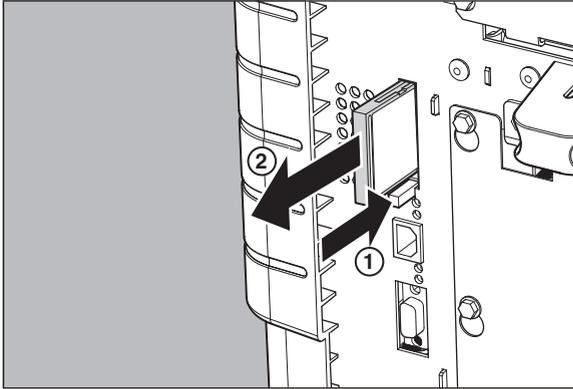
- 1 Hold the CF-card vertically with the connector holes in front of the slot and with the flat surface pointing to the left. In that case the cut-away (a) and the rim (b) are pointing to the right.
- 2 Insert the CF-card gently into the slot and push it until the unlocking lever underneath the slot comes out.



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).

Removing a CF-card

To remove a CF-card from the Drystar 5302 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.

Audio signals

The Drystar 5302 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 5302 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 5302 has rejected the key command.



Certain conditions can cause an interval beep. An interval beep accompanies an error or warning message. Refer to [“Troubleshooting checklist”](#) on page 176.

The keypad

The keypad is located below the display panel.



The Drystar 5302 keypad features the following keys:

	Key-operator key	To access the advanced functions of the key-operator mode. Refer to the chapter <i>'Advanced operation (Key-operator mode)'</i> .
	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.
	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.



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



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

The display

The Drystar 5302 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:

<pre> 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 </pre>	<p>Visible</p> <p>Reachable with Up/Down arrow keys</p>
---	---

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.

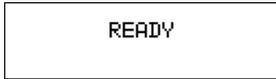
In the upper right corner, the current printer status is displayed:

- In Operator mode, two characters display the print queue status. Refer to [‘Managing the print queue’](#) on page 37.
- 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.

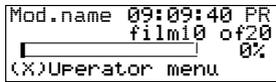
Operator mode

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 5302 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.

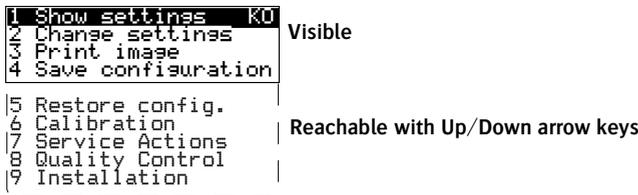


On the print queue screen the modality name defined during installation will be used to refer to the corresponding modality. In case a nickname (daily used name) has been defined during installation, this nickname will be used.

Refer to [‘Managing the print queue’](#) on page 37.

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 5302 will sound a long beep if you press a key that is not to be used at that moment.

Switching on the Drystar 5302



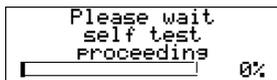
Before switching on the Drystar 5302, read the safety instructions. Refer to [‘Safety precautions’](#) on page 11.

Follow the procedure below to ensure proper start-up of the Drystar 5302 and to check that everything is working correctly.

- 1 Check that the power cord is plugged in and then switch on the printer by pressing the **Power/Reset** button.



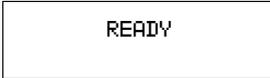
On the display, the following message is displayed. After a short while, a progress indicator will show the progress of the self-test.



- If anything goes wrong during the self-test, refer to [‘Start-up errors’](#) on page 192.

2 The printer is ready for operation:

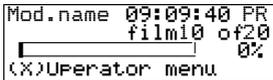
- If, on the front panel display, the READY message is shown, *the status indicator LED is constantly green.*



It takes 10 minutes (starting up of the Drystar 5302 and heating up of the thermal print head) before you can start printing. The display will inform you that the printer is warming up:



- If, on the front panel display, the print queue screen is shown, *the status indicator LED is green and blinking.*



3 Make sure that the printer is loaded with appropriate consumables.



Refer to page 44 for detailed information on loading films.



If the job status displays a warning or error indication, refer to [“Troubleshooting checklist”](#) on page 176.

Switching off the Drystar 5302

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.

- 1 Press the **Power/Reset** button to switch off the Drystar 5302.



- *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
```

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](#)
- [About Drystar 5302 consumables](#)
- [Loading films](#)

Overview of operator functions

This section focuses on the basic operating principles of the Drystar 5302. 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	Page
<i>'Managing the print queue'</i>	Jobs that have been received are put in a print queue, waiting to be printed.	37
<i>'Pausing the print queue'</i>	To pause the print queue. The printer will finish the current print job, but will not start the next print job.	39
<i>'Viewing the film count info'</i>	To view the number of films left in the trays.	40
<i>'Viewing the printer status'</i>	To view the current events.	41
<i>'Loading films'</i>	Instructions for loading new films on the printer.	44

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.



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 5302. Refer to the User manual of the acquisition modality for more information.

If jobs have been transmitted from the network to the Drystar 5302, 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 5302 is printing, the local display shows the 'print' screen:

```
Mod.name 09:09:40 PR
          film10 of20
          [ ] 0%
(%)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 39, to ['Viewing the film count info'](#) on page 40 or to ['Viewing the printer status'](#) on page 41.

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.



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 5302 is printing, you can always pause the print queue by entering the operator menu.

To pause the print queue, proceed as follows:

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

```
Mod.name 09:09:40 PR
          film10 of20
          _____ 0%
(X)Operator menu.
```

- 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 5302 is printing, you can always view the number of films left in the trays by entering the operator menu.



Do not open the input trays to view the number of loaded films while the Drystar 5302 is printing, but follow the procedure below:

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

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

```
Mod.name 09:09:40 PR
          film10 of20
          [ ] 0%
(X)Operator menu
```

- 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.



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 5302 is printing, you can always view the printer status by entering the operator menu.

To view the printer status, proceed as follows:

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

```
Mod.name 09:09:40 PR
          film10 of20
          _____ 0%
(X)Operator menu.
```

- 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:
  lowertray.empty
```

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.

About Drystar 5302 consumables

The Drystar 5302 can handle blue-transparent (Drystar DT 2B) and clear-transparent (Drystar DT 2C) films. Available film formats are 8x10", 10x12", 11x14", 14x14" and 14x17".

The printer has 2 input trays. Both trays can handle all listed film types and formats.

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

The key-operator can overrule the film settings for the input tray. Refer to [‘Changing the configuration settings’](#) on page 66.

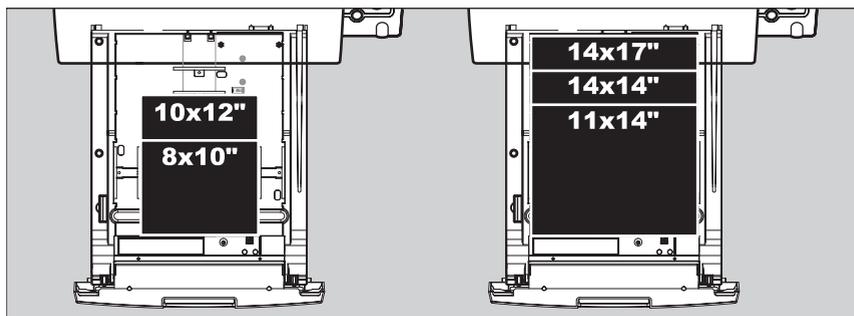
Labeling the input trays

The following film types can be used:

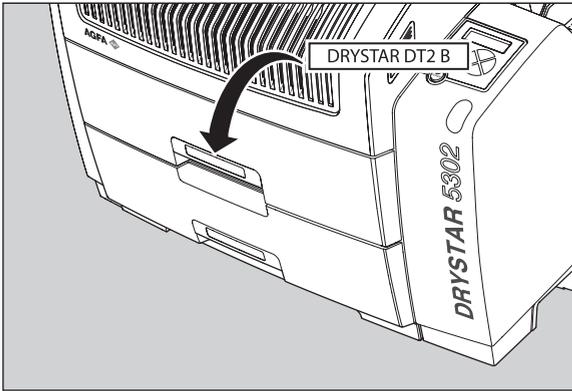
Drystar DT 2B	8x10", 10x12", 11x14", 14x14", and 14x17"
Drystar DT 2C	8x10", 10x12", 11x14", 14x14", and 14x17"



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 166 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 5302 with appropriate Drystar DT 2B and Drystar DT 2C films.

The Drystar 5302 can be loaded with 8x10", 10x12", 11x14", 14x14" and 14x17" films.



The Drystar 5302 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.



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 166 for more information.

The Drystar 5302 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.



The procedure is slightly different, depending on the fact whether the Drystar 5302 is printing/calculating or in the ready state.



When the printer is in the ready state, go to '[When the Drystar 5302 is in the ready state and an input tray is empty:](#)' on page 45.



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 5302.

When the Drystar 5302 is printing or calculating and an input tray is empty:

- 1 The display shows the following message:

```

EMPTY LOWER TRAY
Do NOT open the tray
( / ) Loading procedure
( X ) 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 46.

When the Drystar 5302 is in the ready state and an input tray is empty:

- 1 The display shows the following message:

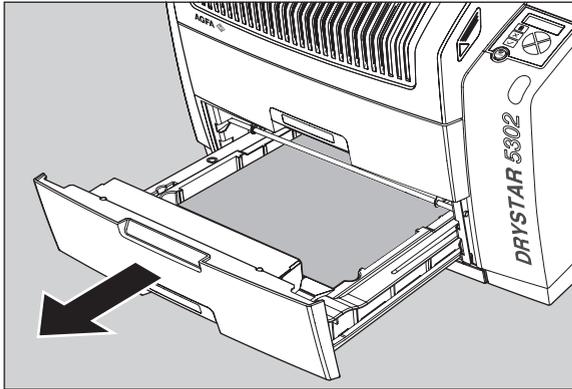
```

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

- 2 Open the lower input tray.
- 3 Load a new film pack.
Refer to [‘Film loading procedure’](#) on page 46.

Film loading procedure

- 1 Open the empty input tray.



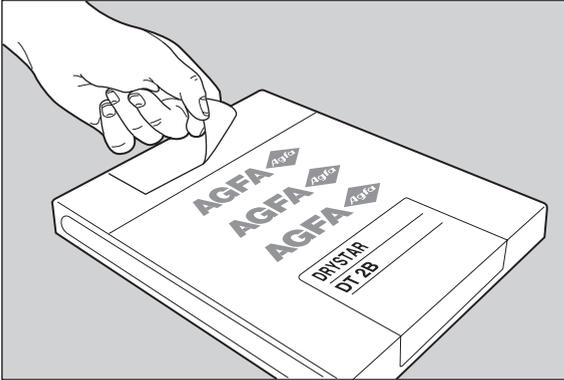
To avoid possible film jams, make sure to open input tray all the way.

- 2 The printer is ready to receive a new film when the following message appears:

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

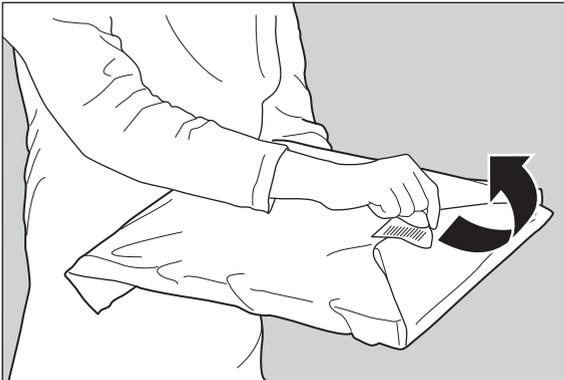
- 3 Remove the white (protective) film sheet.
- 4 Take film pack, and open it.

 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.

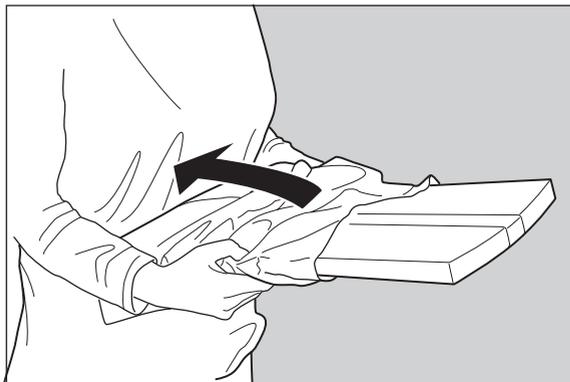


 You can put the film pack onto a table to make manipulation easier. Before you do this, make sure that the table is dust-free!

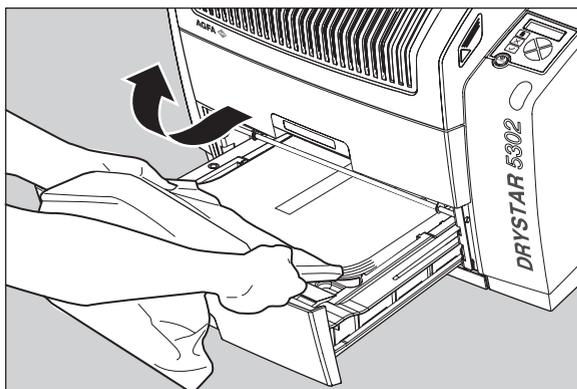
- 5 Remove the sticker from the film pack.



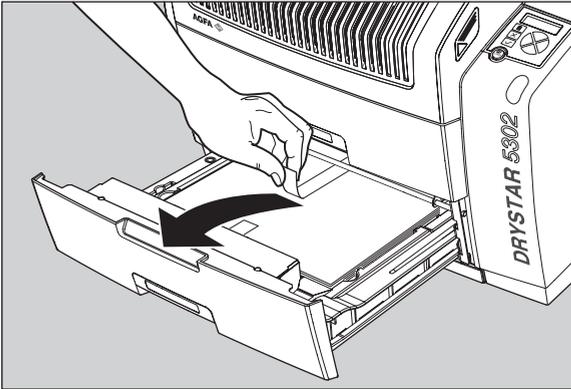
- 6 Remove the plastic film bag partially.



- 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.



Never reuse a jammed film. Refer to 'Clearing of film jams' on page 181.



The Drystar 5302 resumes printing as soon as the tray is closed.



Loading instructions are also available on the input tray cover.



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.



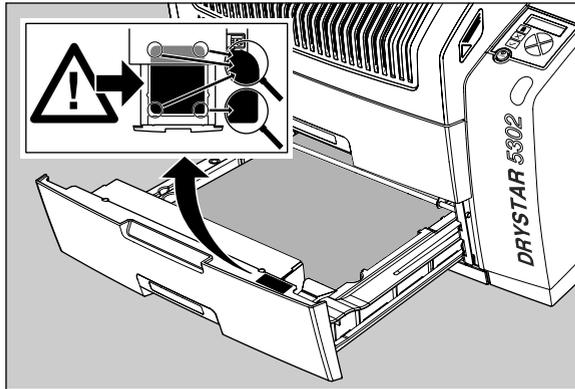
When a film sheet is inserted wrongly in the input tray, then the printer will print on the back-side (non-emulsion side). As a result, a film jam occurs.

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 181) and to check whether the loading procedure was followed correctly (refer to 'Film loading procedure' on page 46.).

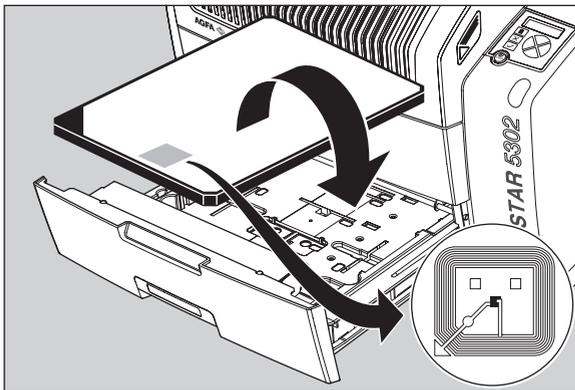
Checking the correct position of a film in the input tray



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.



Advanced operation (Key-operator mode)

This chapter gives an overview of functions for the advanced user:

- Overview of key-operator functions
- Viewing printer information
- Changing the configuration settings
- Printing images
- Saving the configuration settings
- Restoring the configuration settings
- Performing the calibration procedures
- Cleaning the print head
- Service actions
- Quality Control
- Installation

Overview of key-operator functions

The key-operator menus make it possible to use the Drystar 5302 advanced functions.

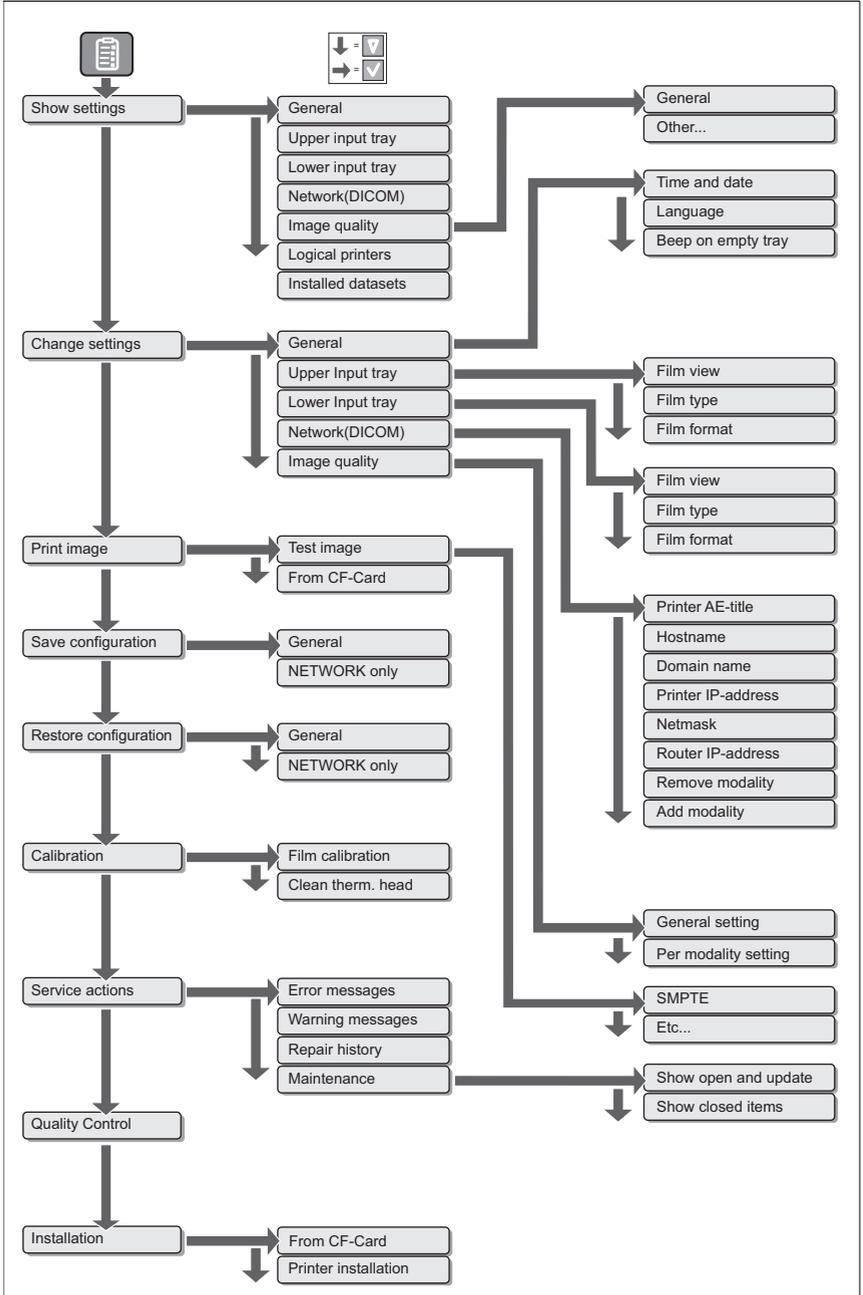
For general information on the key functions of the Drystar 5302, refer to *'The local user interface'* on page 22.

Overview

The Drystar 5302 features the following functions on the main menu level of the key-operator mode:

Menu item	Function	Page
Show settings	To consult the current settings of the printer.	56
Change settings	To change the current settings of the printer.	66
Print image	To print one of the Drystar 5302 test images. To load and print images from an external CF-card.	98
Save configuration	To make a back-up of the printer settings.	102
Restore configuration	To restore the back-up of the printer settings.	107
Calibration	To calibrate the printer.	114
Service actions	To view error, repair and maintenance data.	122
Quality Control	To perform the QC procedure.	124
Installation	To install or update the Drystar 5302 software.	137

The menu structure



Accessing the key-operator menus

- The key-operator mode functions (i.e. the main menu level) can be accessed by pressing the Key-operator key on the front panel.



After pressing the Key-operator key the main menu is displayed:



The two characters displayed in inverse video in the upper right corner indicate the current menu item (e.g. 'KO' for main Key-operator menu, 'QC' for Quality Control, etc.).

```

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
    
```



When you try to enter the key-operator mode while the Drystar 5302 is printing, it will first finish the active print job(s):

```

Stopping Printing KO
Process before
entering Key-Op mode
Please wait
    
```

Blinking



If certain mandatory site-specific data has not yet been entered, the following screen is displayed when entering the key-operator mode (refer to ['Changing the site-specific data \(via remote browser only\)'](#) on page 73):

```

Please provide site
specific information
via remote
connection (browser)
    
```

- You can scroll through the menu items by pressing the Down and Up keys and select a menu item by pressing the Confirm key. The active keys are indicated by their respective LEDs.



- At any moment you can press the Escape key on the main menu level to exit the key-operator mode. If you press this key on a lower level menu you are returned to the higher level menu. If you press this key on a data screen after entering information, all changes on that screen are lost.



- If the key-operator does not interact with the menu for a longer period (ten minutes or more), the menu will time-out and revert back to the ready state. The key-operator will receive a warning that the time-out is about to expire:

```
Time-out is      30
about to
expire...
```

Press the Confirm key to return to the key-operator menu. Otherwise, the key-operator menu will be closed.



The Drystar 5302 will sound a long beep if you press a key that is not to be used at that moment.

Viewing printer information

A number of data and parameter settings of the printer can be viewed by using the **'Show settings'** function:

Show settings	Page
General	
<i>'Viewing general information'</i>	58
Input tray	
<i>'Viewing input tray information'</i>	59
Network (DICOM)	
<i>'Viewing network (DICOM) information'</i>	60
Image quality	
<i>'Viewing general image quality information'</i>	61
<i>'Viewing image quality information for a modality'</i>	63
Logical printers	
<i>'Viewing the logical printers configuration'</i>	64
Installed datasets	
<i>'Viewing installed datasets information'</i>	65

Accessing the Show settings menu

- 1 Press the Key-operator key to enter the key-operator mode.
- 2 On the key-operator main menu, press the Confirm key to select 'Show settings'.
The Show settings menu is displayed:

```
1 General SH
2 Upper input tray
3 Lower input tray
4 Network (DICOM)
5 Image quality
6 Logical printers
7 Installed datasets
```



This menu is the starting point for viewing printer information (see next pages).

- 3 Press the Escape key to return to the key-operator main menu.
- 4 Press the Escape key again to quit the key-operator mode.

Viewing general information

- 1 Perform steps 1 and 2 of the [‘Accessing the Show settings menu’](#) procedure, on page 57.
- 2 On the Show settings menu, press the Confirm key to select ‘General’.

The ‘General’ info screen is displayed (example):

```

Serial-No:1045  [OK]
Language: English — e.g. English
Time   : 09:09
Date   : 08-AUG-05

|Install.: 07-MAR-05
|No of films after
|TPH cleaning: 189
|No of films before
|TPH cleaning: 4811
|No of copies: 4
|SW version:
| R1.8.0A03
|Beep on empty tray:
| 5 beeps
|-----|
|Site-specific info
|visible via browser
|only
|-----|

```

On the ‘General’ info screen you can see:

- the serial number of the printer,
- the language,
- the current time,
- the current date,
- the installation date,
- the number of films printed after the last print head cleaning,
- the number of films printed before the last print head cleaning,
- the total number of films printed,
- the currently installed software version,
- whether the printer should beep when an input tray is empty (No beep, 5 times, many).



More information, such as site-specific data, can be viewed via the browser only. Refer to the chapter [‘Controlling the Drystar 5302 via a remote PC \(with browser\)’](#).

- 3 Press the Confirm key to return to the Show settings menu.

Viewing input tray information



In this manual, we always will elaborate a case for the lower tray. The procedures of showing the settings are identical for the upper tray.

On the Show settings menu, press the Down key once to see the upper tray settings, twice to see the lower tray settings

- 1 Perform steps 1 and 2 of the *'Accessing the Show settings menu'* procedure, on page 57.
- 2 On the Show settings menu, press the Down key once to see the upper tray settings, twice to see the lower tray settings, followed by the Confirm key'.

The 'Input tray' screen is displayed (example):

```

Status: OK SH Status: OK, disabled or overruled
Actual settings:
  Film type:
    DT 2B
|
| Film format:
|   14x17 
|Film view:
|   Normal
|Prints current pack:
|   53
|Total prints tray:
|   4
|RF-tag info:
|  Film type:
|    DT 2B
|  Film format:
|    14x17 
|    EKL9M
|    202547906
|    82
  
```

The following information is displayed for the input tray:

- the status of the Film Identification tag (OK, disabled, overruled),
 - the actual film data, as it has been modified by the key-operator:
 - film type,
 - film format.
 - the film view (normal, back),
 - the number of prints for this film pack,
 - the total number of prints for the input tray,
 - the film data read from the film identification tag:
 - film type,
 - film format,
 - brand (ABC code),
 - order number,
 - pack number.
- 3 Press the Confirm key to return to the Show settings menu.

Viewing network (DICOM) information

- 1 Perform steps 1 and 2 of the [‘Accessing the Show settings menu’](#) procedure, on page 57.
- 2 On the Show settings menu, press the Down key three times, followed by the Confirm key to select ‘Network (DICOM)’.

The ‘Network (DICOM)’ screen is displayed (example):

```

Printer AE-title: DS
DSxxxxxxxxxxxx
Hostname:
DSxxxxxxxxxxxx

|Domain name:
|  Abcdefghijklmnop |
|Printer IP-address:
|  123.123.123.123   |
|Netmask:
|  255.255.252.0    |
|Router IP-address:
|  123.123.123.123  |
|Printer MAC Addr:
|  _XXXXXXXXXXXXXXXXX )

```

The following information on the current network settings is displayed:

- the AE-title of the Drystar 5302,
 - the hostname of the Drystar 5302,
 - the domain name,
 - the IP address of the Drystar 5302,
 - the netmask used for the Drystar 5302,
 - the IP address of the router,
 - the MAC address of the Drystar 5302.
- 3 Press the Confirm key to return to the Show settings menu.

Viewing general image quality information

- 1 Perform steps 1 and 2 of the [‘Accessing the Show settings menu’](#) procedure on page 57.
- 2 On the Show settings menu, press the Down key four times, followed by the Confirm key to select ‘Image quality’.

The following screen will appear:

```
1 General settingsSH
2 <Modality name>
3 <Modality name>
```

- 3 Press the Confirm key to select ‘General settings’.

The following screen appears:

```
1 Def. film calib.SH
2 Def. densitometer
```

- 4 Do one of the following:
 - If you select ‘Def.film calib.’ the general image quality settings are displayed. Proceed with step 5.
 - If you select ‘Def. densitometer’, the default densitometer type is displayed. Proceed with step 6.
- 5 The general image quality settings are displayed:

```
IMAGE QUALITY SH
Auto film calib:ON
  after 1 packs
Upper input tray:
-----
- Dmax result: 3.19
Lower input tray
- Dmax result: 3.2
```

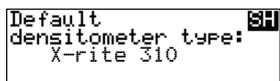
————— Status: ON or OFF

The following information is displayed:

- whether the automatic film calibration setting is set to OFF or ON,
- the number of film packs determining the automatic film calibration interval (e.g. every ‘05’ film packs) (only if film calibration setting is set to ON),
- the maximum density result value (e.g. ‘3.10’) of the last successful film calibration for the upper and lower input tray.

Proceed with step 7.

- 6 The default densitometer type is displayed:

A screenshot of a menu screen. The text reads: "Default densitometer type:" followed by "X-rite 310". To the right of the text is a small icon of a densitometer. The entire screen is enclosed in a rectangular border.

```
Default densitometer type: X-rite 310
```

- 7 Press the Confirm key to return to step 3, then press the Escape key to return to the Image quality menu (see step 2).
- 8 In the Image quality menu, press the Escape key to return to the Show settings menu.

Viewing image quality information for a modality

- 1 Perform steps 1 and 2 of the [‘Accessing the Show settings menu’](#) procedure on page 57.
- 2 On the Show settings menu, press the Down key four times, followed by the Confirm key to select ‘Image quality’.

The following screen will appear:

```
1 General settingsSH
2 <Modality name>
3 <Modality name>
```

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

The Image quality settings for the selected modality are displayed (e.g.):

```
<Modality name> SH
Look-up table:
  Kanamori
Interpolation:
  CubicBell
Smoothingt: 0.35
Maximum density:
  3.20
----- )
```

- 4 Press the Confirm key to return to the Image quality menu.
- 5 In the Image quality menu, press the Escape key to return to the Show settings menu.

Viewing the logical printers configuration

- 1 Perform steps 1 and 2 of the [‘Accessing the Show settings menu’](#) procedure on page 57.
- 2 On the Show settings menu, press the Down key five times, followed by the Confirm key to select ‘Logical printers’.

The ‘Logical printers’ screen is displayed (example):

Defined Printers: 	2 other logical printers
-DEFAULT PRINTER	e.g. DS_5302_2, DS_5302_3, ...
-2 other logical printer(s).	

This screen gives an overview of the logical printers defined in the Drystar 5302.



The logical printers information can be helpful when assigning a modality output to a particular Drystar 5302 profile. Configuring logical printers can be done via the remote webpages. Contact your local service organization for more information.

- 3 Press the Confirm key to return to the show settings menu.

Viewing installed datasets information

- 1 Perform steps 1 and 2 of the [‘Accessing the Show settings menu’](#) procedure on page 57.
- 2 On the Show settings menu, press the Down key six times, followed by the Confirm key to select ‘Installed datasets’.

The ‘Installed datasets’ screen is displayed (example):

```
Current installed SH
datasets:
Language: Vx.yz
XXXXXXXXXX: Va.bc
etc.. _ _ _ _ _
```

The following information is displayed for the installed datasets:

- the name,
- the version number.

If no datasets available, the following screen is displayed:

```
Current installed SH
datasets:
No datasets ...
```

- 3 Press the Confirm key to return to the Show settings menu.

Changing the configuration settings

A number of data and parameters settings of the printer can be viewed and changed by using the ‘**change settings**’ function.



Note that some configuration settings are only adjustable via a remote browser PC:

- Via the LOCAL keypad, you can access only the MAIN features.
- Via a REMOTE connection, you can access ALL features.

For more information about controlling the Drystar 5302 via a remote browser PC, refer to the chapter ‘[Controlling the Drystar 5302 via a remote PC \(with browser\)](#)’ on page 151.



Each time the settings have been changed, the new configuration is automatically saved on the hard disk of the printer. You will be asked to create a back-up CF-card with the new settings.

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Accessing the Change settings menu



Before you can change the settings, the 'Printer installation wizard' should be executed. If the printer has not yet been installed, the following screen is displayed:

```
Settings can      CS
only be changed
after printer
installation!
```

Proceed as follows to access the 'Change settings' menu:

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

The 'Change settings' menu is displayed:

```
1 General      CS
2 Upper input tray
3 Lower input tray
4 Network (DICOM)
5 Image quality _ _
```



This menu is the starting point for changing the Drystar 5302 settings.

- 3 Press the Escape key to return to the key-operator main menu.
- 4 Press the Escape key to quit the key-operator mode.

When the printer settings have been changed, the 'Accept changes' window is displayed:

```
Accept changes?  CS
YES(✓)          NO(X)
```

- 5 Do one of the following:
 - Press the Confirm key (YES) if you wish to accept the changed settings. Proceed with step 6.
 - Press the Escape key (NO) if you want to quit the procedure without any changes.
- 6 Each time the settings have been changed and confirmed, an automatic back-up of the old configuration is made on the hard disk.

```
Saving settings.. CS
Please wait
```

- 7 When the automatic backup is finished, you will also be asked to create a back-up of the new settings on an external CF-card.

```
UPDATE BACKUP on YES
CF-card?
YES(✓)          NO(X)
```

- 8 Do one of the following:
- If you want to save the configuration on the back-up CF-card, press the Confirm key (YES). The printer will now enter the *'General save configuration procedure'* (see page 103).
 - If you only want to save the configuration on the hard disk, press the Escape key (NO) and proceed with step 9.
- 9 Depending on the settings that has been changed, you go directly to the key-operator main menu are via the following intermediate screen:

```
New settings will NO
be active after
reset, reset now?
NOW(✓)          LATER(X)
```

Press the Confirm key to reset the printer or press the Escape key to reset later. After the reset, the new settings will be active.

Changing the general settings

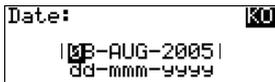
Changing the date and time

- 1 Perform steps 1 to 2 of the '[Accessing the Change settings menu](#)' procedure on page 68.
- 2 On the Change settings menu, press the Confirm key to select 'General'.
The 'General' screen is displayed:



- 3 Press the Confirm key to select 'Date & time'.

The 'Date' screen is displayed:



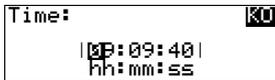
- 4 Press the up/down arrow keys to increment/decrement the numbers or the month. Press the left/right arrow keys to move through the digits.



For more info, refer to '[Data entry](#)' on page 31.

- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

If you have pressed the Confirm key, the 'Time' screen is displayed:



- 6 Press the up/down arrow keys to increment/decrement the numbers. Press the left/right arrow keys to move through the digits.



For more info, refer to '[Data entry](#)' on page 31.

- 7 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing the language

- 1 Perform steps 1 to 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68 to select the ‘General’ screen.

- 2 On the Change settings menu, press the Confirm key to select ‘General’.

The ‘General’ screen is displayed:

```

1 Date & Time    CS
2 Language
3 Beep on empty tray
4 Sitedata via browser
  
```

- 3 On the ‘General’ screen, press the Down key, followed by the Confirm key to select ‘Language’.

The ‘Language’ screen is displayed with the available languages (contact Agfa for the latest Drystar 5302 language availability status). For example:

```

1 *English      CS
2 Nederlands
3 Deutsch
  
```

The currently active language is marked with a ‘*’ on the left.



The number of displayed languages depends on the installed dataset.

- 4 Press the up/down arrow keys to select the desired language.
- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing the beep on empty tray settings

- 1 Perform steps 1 to 2 of the *'Accessing the Change settings menu'* procedure on page 68 to select the 'General' screen.

- 2 On the Change settings menu, press the Confirm key to select 'General'.

The 'General' screen is displayed:

```

1 Date & Time    CS
2 Language
3 Beep on empty tray
4 Sitedata via browser

```

- 3 On the 'General' screen, press the Down key twice, followed by the Confirm key to select 'Beep on empty tray'.

The 'Audible alarm on empty tray' screen is displayed:

```

Beep on empty tray KU
*5 beeps
No beep
While tray is empty

```

- 4 Use the Up/Down arrow keys to select the desired setting:
 - Select '5 beeps' to hear 5 consecutive beeps at the moment a tray gets empty.
 - Select 'No beep' if you do not want an audible signal to warn you that a tray is empty.
 - Select 'While tray is empty' to hear a beep the whole time a tray is empty.
- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing the site-specific data (via remote browser only)

The following site-specific data are stored in the Drystar 5302 memory:

Field	Mandatory
Site name	x
Site address (contact)	x
City	x
Tel. country code	x
Tel. number	x
Modem	
Department	x
Contact person	x
Delivery address	x
E-mail address	
Modem tel. number	
Comment	

Some of these data fields are mandatory (see table above). When they are not present, the following screen is displayed when you enter the key-operator mode:

```
Please provide site
specific information
via remote
connection (browser)
```

You can only change the site-specific data via the remote browser interface. Refer to the chapter *'Controlling the Drystar 5302 via a remote PC (with browser)'*.

Changing the input tray settings



In this manual, we always will elaborate a case for the lower tray. The procedures of changing the settings are identical for the upper tray.

On the Change settings menu, press the Down key once to change the upper tray settings, twice to change the lower tray settings.

Changing the film view

Using the following procedure you can change the film view.

- 1 Perform steps 1 and 2 of the *'Accessing the Change settings menu'* procedure on page 68.
- 2 On the Change settings menu, press the Down key once to change the upper tray settings, twice to change the lower tray settings, followed by the Confirm key.

The 'Input tray' screen is displayed:

```

1 Film view      CS
2 Film type
3 Film format
  
```

- 3 Press the Confirm key to select 'Film view'.

The 'Film view' screen is displayed:

```

1*Drystar DT 2B  CS
2 Drystar DT 2C
  
```

The currently active film view is marked with a '*':

- 4 Press the up/down arrow keys to select the film view.
- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing the film type

Using the following procedure you can overrule the film type, which is automatically read by means of the Film Identification tag on the film pack.



This procedure is only to be used exceptionally when the Film Identification tag info is incorrect.

- 1 Perform steps 1 and 2 of the *'Accessing the Change settings menu'* procedure on page 68.
- 2 On the Change settings menu, press the Down key once to change the upper tray settings, twice to change the lower tray settings, followed by the Confirm key'.

The 'Input tray' screen is displayed:

```

1 Film view      CS
2 Film type
3 Film format
  
```

- 3 Press the Down key, followed by the Confirm key to select 'Film type'.

The 'Film type' screen is displayed:

```

1*Drystar DT 2B  CS
2 Drystar DT 2C
OVERRULE to RF-tag              Blinking
  
```

The film type read by the Film Identification tag is marked with a '*'.



You can find the film type on the film packaging, e.g. 'DRYSTAR DT 2C'.



The message 'OVERRULE to RF-tag' is only visible if the film type, specified by the Film Identification tag, has been overruled.

- 4 Press the up/down arrow keys to select the film type.
- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.



The overrule settings remain active until a new film pack is loaded.

Changing the film format

Using the following procedure you can overrule the film format, which is automatically read by means of the Film Identification tag on the film pack.



This procedure is only to be used exceptionally when the Film Identification tag info is incorrect.

- 1 Perform steps 1 and 2 of the *'Accessing the Change settings menu'* procedure on page 68.
- 2 On the Change settings menu, press the Down key once to change the upper tray settings, twice to change the lower tray settings, followed by the Confirm key'.

The 'Input tray' screen is displayed:

```

1 Film view      CS
2 Film type
3 Film format
  
```

- 3 Press the Down key twice, followed by the Confirm key to select 'Film format'.

The 'Film format' screen is displayed:

```

1* 8x10
2 10x12
3 11x14
4 14x14
5 14x17
OVERRULE to RF-tag
  
```

Blinking

The film format read by the Film Identification tag is marked with a '*'.



The message 'OVERRULE to RF-tag' is only visible if the film format, specified by the Film Identification tag, has been overruled.

- 4 Press the up/down arrow keys to select the film format.

- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.



The override settings remain active until a new film pack is loaded.



If the format is changed from the previous format, the following message appears (example):

```
Please modify 
input tray for:
11x14"
```

You must modify the tray configuration. Refer to ['Drystar 5302 network configuration'](#) on page [169](#) for more information.

- 6 Press the Confirm key to continue.

Changing network (DICOM) configuration

Changing the printer AE-title

- 1 Perform steps 1 to 2 of the '[Accessing the Change settings menu](#)' procedure on page 68.
- 2 On the Change settings menu, press the Down key three times, followed by the Confirm key to select 'Network (DICOM)'.

The 'Network (DICOM)' screen is displayed:

```

1 Printer AE-titlecs
2 Hostname
3 Domain name
4 Printer IP-address
5 Netmask
6 Router IP-address
7 Remove modality
8 Add modality _ _ )
  
```

- 3 Press the Confirm key to select 'Printer AE-title'.

The 'Printer AE-title' screen is displayed:

```

Printer AE-title:  |
|  |               |
| (max. 16 char)  |
  
```

If the printer AE-title has already been assigned, it will be shown on the display.

- 4 Change the printer AE-title by means of the arrow keys. Refer to '[Data entry](#)' on page 31. The printer AE-title is limited to 16 characters.



Entries are case sensitive.

- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing the hostname

- 1 Perform steps 1 to 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68.
- 2 On the Change settings menu, press the Down key three times, followed by the Confirm key to select ‘Network (DICOM)’.

The ‘Network (DICOM)’ screen is displayed:

```

1 Printer AE-titleCS
2 Hostname
3 Domain name
4 Printer IP-address

5 Netmask
6 Router IP-address
7 Remove modality
8 Add modality _ _ )
  
```

- 3 In the ‘Network (DICOM)’ screen, press the Down key, followed by the Confirm key to select ‘Hostname’.

The ‘Hostname’ screen is displayed:

```

Hostname:      CS
|             |
| █          |
| (max. 16 char) |
  
```

If the Hostname has already been assigned, it will be shown on the display.

- 4 Change the hostname by means of the arrow keys. Refer to [‘Data entry’](#) on page 31. The hostname is limited to 16 characters.
- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing the domain name

- 1 Perform steps 1 to 2 of the *'Accessing the Change settings menu'* procedure on page 68.
- 2 On the Change settings menu, press the Down key three times, followed by the Confirm key to select 'Network (DICOM)'.

The 'Network (DICOM)' screen is displayed:

```

1 Printer AE-titlecs
2 Hostname
3 Domain name
4 Printer IP-address
|
5 Netmask
6 Router IP-address |
7 Remove modality
8 Add modality _ _ )

```

- 3 On the 'Network (DICOM)' screen, press the Down key twice, followed by the Confirm key to select 'Domain name'.

The 'Domain name' screen is displayed:

```

Domain name: [ ]
|
[ ]
(max. 255 char)

```

If the Domain name has already been assigned, it will be shown on the display.

- 4 Enter the domain name by means of the arrow keys. Refer to *'Data entry'* on page 31.
- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing the printer IP address

- 1 Perform steps 1 to 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68.
- 2 On the Change settings menu, press the Down key three times, followed by the Confirm key to select ‘Network (DICOM)’.

The ‘Network (DICOM)’ screen is displayed:

```

1 Printer AE-titles
2 Hostname
3 Domain name
4 Printer IP-address
5 Netmask
6 Router IP-address
7 Remove modality
8 Add modality _ _

```

- 3 On the ‘Network (DICOM)’ screen, press the Down key three times, followed by the Confirm key to select ‘Printer IP-Address’.

The ‘Printer IP address’ screen is displayed:

```

Printer IP-address
| 128.128.128.128 |
| (255.255.255.255) |

```

If the IP address has already been assigned, it will be shown on the display.



When no DHCP server is available and when the IP address of the printer has never been set, the printer IP address will be set to the APIPA address 169.254.10.10.

- 4 Press the up/down arrow keys to increment/decrement the numbers. Press the left/right arrow keys to move through the fields. Press the Confirm key to store the data.



Refer to ‘Data entry’ on page 31.



Note that blank spaces will be ignored (see examples on next page).

Example 1: if the IP address is 120.000.120.120, then the data entry should be as follows:

```
Printer IP-address[00]
|120.000.120.120|
(255.255.255.255)
```

Example 2: if the IP address is 120.0.120.120, then the data entry should be as follows:

```
Printer IP-address[00]
|120.0.120.120|
(255.255.255.255)
```

- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing the netmask

- 1 Perform steps 1 to 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68.
- 2 On the Change settings menu, press the Down key three times, followed by the Confirm key to select ‘Network (DICOM)’.

The ‘Network (DICOM)’ screen is displayed:

```

1 Printer AE-titles
2 Hostname
3 Domain name
4 Printer IP-address

5 Netmask
6 Router IP-address
7 Remove modality
8 Add modality _ _
  
```

- 3 On the ‘Network (DICOM)’ screen, press the Down key four times, followed by the Confirm key to select ‘Netmask’.

The ‘Netmask’ screen is displayed:

```

Netmask: [X]
|250.250.250.250|
(255.255.255.255)
  
```

If the netmask has already been assigned, it will be shown on the display.



When no DHCP server is available and when the subnet mask of the printer has never been set, the printer subnet mask will be set to the APIPA address 255.255.0.0.

- 4 Enter the netmask by means of the arrow keys. Refer to [‘Data entry’](#) on page 31.



Note that blank spaces will be ignored (see example).

Example: if the netmask is 250.250.250.0, then the data entry should be as follows:

```

Netmask: [X]
|250.250.250. 0|
(255.255.255.255)
  
```

- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing the router IP address

- 1 Perform steps 1 to 2 of the '[Accessing the Change settings menu](#)' procedure on page 68.
- 2 On the Change settings menu, press the Down key three times, followed by the Confirm key to select 'Network (DICOM)'.

The 'Network (DICOM)' screen is displayed:

```

1 Printer AE-titlecs
2 Hostname
3 Domain name
4 Printer IP-address
|5 Netmask
6 Router IP-address |
7 Remove modality
8 Add modality _ _ )

```

- 3 On the 'Network (DICOM)' screen, press the Down key five times, followed by the Confirm key to select 'Router IP address'.

The 'Router IP address' screen is displayed:

```

Router IP-address: [OK]
|120.120.120.120|
(255.255.255.255)

```

If the router IP address has already been assigned, it will be shown on the display.

- 4 Enter the router IP address by means of the arrow keys. Refer to '[Data entry](#)' on page 31.



Note that blank spaces will be ignored (see examples on next page).

Example 1: if the IP address is 120.000.120.120, then the data entry should be as follows:

```

Router IP-address: [OK]
|120.000.120.120|
(255.255.255.255)

```

Example 2: if the IP address is 120.0.120.120, then the data entry should be as follows:

```

Router IP-address: [OK]
|120. 0.120.120|
(255.255.255.255)

```

- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Removing a modality

- 1 Perform steps 1 to 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68.
- 2 On the Change settings menu, press the Down key three times, followed by the Confirm key to select ‘Network (DICOM)’.

The ‘Network (DICOM)’ screen is displayed:

```

1 Printer AE-titles
2 Hostname
3 Domain name
4 Printer IP-address

5 Netmask
6 Router IP-address
7 Remove modality
8 Add modality _ _

```

- 3 On the ‘Network (DICOM)’ screen, press the Down key six times, followed by the Confirm key to select ‘Remove modality’.

The ‘Remove modality’ screen is displayed:

```

1 <Modality name> [OK]
2 <Modality name>
3
4 etc...

```

The modality names that have been entered during the installation of the printer, are shown in the list. If no nickname (daily used modality name) has been entered, the modality AE-title is shown instead. If a nickname is also defined during installation, the nickname is used.

- 4 Select the modality you wish to remove by means of the arrow keys, and press the Confirm key.

A confirmation screen is displayed:

```

Delete modality: [OK]
<Modality name>
YES(✓)          NO(X)

```

- 5 Press the Confirm key (YES) to remove the modality from the list, or the Escape key (NO) to quit the procedure without any changes.

Adding a modality

- 1 Perform steps 1 to 2 of the *'Accessing the Change settings menu'* procedure on page 68.
- 2 On the Change settings menu, press the Down key three times, followed by the Confirm key to select 'Network (DICOM)'.

The 'Network (DICOM)' screen is displayed:

```

1 Printer AE-titlecs
2 Hostname
3 Domain name
4 Printer IP-address

|5 Netmask
6 Router IP-address |
7 Remove modality
8 Add modality _ _ )

```

- 3 On the 'Network (DICOM)' screen, press the Down key seven times, followed by the Confirm key to select 'Add modality'.
- 4 The 'Collect info' screen is displayed, asking you to gather the appropriate information on the new modality (see your System Administrator if necessary):

```

Collect info: [OK]
Daily used modality
name
Modality brand

|-Modality type
-Modality AE title |
( _ _ _ _ _ _ _ _ )

```

- 5 Press the Confirm key to continue, or the Escape key to quit the procedure without any changes.

If you press the Confirm key, the 'Enter daily used Modality name' screen is displayed:

```

Enter daily used [OK]
modality name:
  █ |
(max. 8 char)

```

- 6 Enter the daily used modality name (nickname) by means of the arrow keys. Refer to *'Data entry'* on page 31. The nickname is limited to 8 characters.

- 7 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Select modality brand name' screen is displayed:

```
Select modality  [KO]
brand name:
1 Default Profile
2 FUJIFILM
3 SIEMENS
4 PHILIPS
```

- 8 Press the up/down arrow keys to select the appropriate modality brand name.

◆ If you have selected 'Default profile', the modality AE-title will be linked with the default settings. Proceed with step 11.

- 9 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Select modality type' screen is displayed:

```
Select modality  [KO]
type:
1 Default Profile
2 MXVIEW
3 MXB00
```

- 10 Press the up/down arrow keys to select the appropriate modality type.

- 11 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Enter modality AE-title' screen is displayed.

```
Enter modality  [KO]
AE-title:
|█|
(max. 16 char)
```

- 12 Enter the modality AE-title by means of the arrow keys.

Refer to '[Data entry](#)' on page 31. The modality AE-title is limited to 16 characters.

◆ If you press the confirm key without entering a modality AE-title, the following message appears:

```
'BLANCO' modality [KO]
AE-title.
Please re-enter
modality AE-title.
```

◆ If you enter an existing modality AE-title, the following message appears:

```
Modality AE-title [KO]
is already used.
Please enter an
unique AE-title.
```

- 13** Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Select preferred FILM TYPE for' screen will appear:

```
Select preferred KO
FILM TYPE for
<modality name>
1*Drystar DT 2B
|
|2_Drystar_DT_2C_ _ _
```



You can find the film type on the film packaging, e.g. 'DRYSTAR DT 2C'.

- 14** Press the up/down key to select the preferred film type for this modality. If the current film type in the trays does not match the selected film type, the following message is displayed:

```
Preferred KO
FILM TYPE for
<Modality name>
IS CURRENTLY NOT
|
|AVAILABLE IN INPUT
|TRAY Use the
|selected film type?
|YES(v) NO(x)
|_ _ _ _ _
```

- 15** Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The data entry for the new modality is finished now.

The printer will ask you if you want to add another modality:

```
ADD other KO
modality?
|
|YES(/) NO(x)
```

- 16** If you wish to add another modality, press the Confirm key (YES). You will be taken back to step 4 to repeat the procedure.
- 17** If you do not wish to add another modality, press the Escape key (NO). The printer will return to the Network (DICOM) menu.

Changing the image quality settings

Changing general image quality settings - Film calibration

- 1 Perform steps 1 and 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68.
- 2 On the Change settings menu, press the Down key four times, followed by the Confirm key to select ‘Image quality’.

The following screen will appear:

```

1 General settings CS
2 <Modality name>
3 <Modality name>
4 <Modality name>
5 _etc... _ _ _ _

```

- 3 Press the Confirm key to select ‘General settings’.

The ‘General settings’ screen is displayed:

```

1 Def. film calib. CS
2 Def. densitometer

```

- 4 Press the Confirm key to select ‘Def. film calib.’.

```

SELECT DEFAULT  CS
FILM CALIBRATION
1*ON
  OFF

```

This setting is by default set to ON and will apply to every modality. The currently active setting is indicated with a ‘*’.



For more information on film calibration settings: refer to [‘Understanding the calibration policy’](#) on page 195.

5 Press the up/down key to select the preferred film calibration default.

When the setting is ON, the Drystar 5302 will ask you to enter the calibration frequency:



Enter the calibration frequency by means of the up/down key. Refer to [‘Data entry’](#) on page 31.



1 pack = 100 sheets

E.g., if the frequency is set to 5, this means that a film calibration is executed every 5 packs or every 500 sheets.



You can specify to perform an automatic film calibration after loading every “x” film packs.



For more information on film calibration settings: refer to [‘Understanding the calibration policy’](#) on page 195.

6 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing general image quality settings - Default densitometer

- 1 Perform steps 1 and 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68.
- 2 On the Change settings menu, press the Down key four times, followed by the Confirm key to select ‘Image quality’.

The following screen will appear:

```

1 General settings CS
2 <Modality name>
3 <Modality name>
4 <Modality name>
5 _etc... _ _ _ _

```

- 3 Press the Confirm key to select ‘General settings’.

The ‘General setting’ screen is displayed:

```

1 Def. film calib. CS
2 Def. densitometer

```

- 4 Press the Down key once, followed by the Confirm key to select ‘Def. densitometer’.

The ‘Default densitometer’ screen is displayed:

```

Select default
densitometer type: CS
1 Macbeth TR924
2 Gretag
3 X-Rite301
4 *X-Rite310
5 X-Rite331
6 X-Rite341

```

The current default densitometer is marked with an *.

- 5 Press the Up/Down arrow keys to select the default densitometer.
- 6 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.



All shown densities will vary slightly according to the densitometer selection. Refer to [‘Drystar media density response data’](#) on page 207.

Changing Image quality settings for a modality - Selecting a lookup table

- 1 Perform steps 1 and 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68.
- 2 On the Change settings menu, press the Down key four times, followed by the Confirm key to select ‘Image quality’.

The following screen will appear:

```

1 General settings CS
2 <Modality name>
3 <Modality name>
4 <Modality name>
5 etc...

```

- 3 Press the Up/Down key, followed by the Confirm key to select the modality for which you want to change the Image quality settings.

The ‘Image quality’ screen for the selected modality is displayed:

```

Default for CS
<Modality name>
1 Profile default
2 Select other

```

- 4 Do one of the following:
 - If you want to attribute the default profile, select ‘Profile default’ and press the Confirm key.
The Drystar 5302 will be loaded with these settings and return to the ‘Image quality’ main menu (see step 2).
 - If you want to add a custom profile, select ‘Select other’ and press the Confirm key. Proceed with step 5.
 - If the parameter for the selected modality has been set via a remote computer, you will not be able to change the image quality information for this modality via the local keypad. In this case the following screen will appear:

```

<Modalityname>
Parameters can only
be changed by DICOM
configuration tool.

```



In case the image quality parameters need to be changed for this modality, please use the DICOM Configuration tool in the Key-operator mode via a remote connection. For more information, refer to the chapter [‘Controlling the Drystar 5302 via a remote PC \(with browser\)’](#). Alternatively, you can also remove this modality (refer to [‘Removing a modality’](#) on page 85) and add a new modality with the same name. For this new modality new parameters can be assigned via the local keypad (refer to [‘Adding a modality’](#) on page 86).

- 5 The Drystar 5302 will continue with the 'Select for Modality' screen, allowing you to change the Look-up table, the Interpolation and the maximum density (Dmax) values manually.

```

Select for      [OK]
<Modality name>
1 Look-up table
2 Interpolation
3 Dmax
  
```

- 6 In the 'Select for Modality' screen, press the Confirm key to select 'Look-up table'.

The 'Look-up table' screen is displayed:

```

Select for      [OK]
<Modality name>
1 *Linear
2 Kanamori
3 Kanamorilike (100)
  
```

- 7 Press the up/down key to select the desired look-up table.
- 8 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

- ◆ In case Kanamorilike (100) is selected, you can change the Kanamorilike value (the range is: 75-220, the default value = 100).

An additional screen for the Kanamorilike value is displayed:

```

Select for      [OK]
<Modality name>
Kanamori like value: _____ Desired Kanamorilike value
      100
  
```

Enter the Kanamorilike value by means of the arrow keys. Refer to ['Data entry'](#) on page 31. Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Changing Image quality settings for a modality - Changing the interpolation

- 1 Perform steps 1 and 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68.
- 2 On the Change settings menu, press the Down key four times, followed by the Confirm key to select ‘Image quality’.

The following screen will appear:

```

1 General settings CS
2 <Modality name>
3 <Modality name>
4 <Modality name>
5 etc...

```

- 3 Press the Up/Down key, followed by the Confirm key to select the modality for which you want to change the Image quality settings.

The ‘Image quality’ screen for the selected modality is displayed:

```

Default for CS
<Modality name>
1 Profile default
2 Select other

```

- 4 Do one of the following:
 - If you want to attribute the default profile, select ‘Profile default’ and press the Confirm key.
The Drystar 5302 will be loaded with these settings and return to the ‘Image quality’ main menu (see step 2).
 - If you want to add a custom profile, select ‘Select other’ and press the Confirm key. Proceed with step 5.
 - If the parameter for the selected modality has been set via a remote computer, you will not be able to change the image quality information for this modality via the local keypad. In this case the following screen will appear:

```

<Modalityname>
Parameters can only
be changed by DICOM
configuration tool.

```



In case the image quality parameters need to be changed for this modality, please use the DICOM Configuration tool in the Key-operator mode via a remote connection. For more information, refer to the chapter [‘Controlling the Drystar 5302 via a remote PC \(with browser\)’](#). Alternatively, you can also remove this modality (refer to [‘Removing a modality’](#) on page 85) and add a new modality with the same name. For this new modality new parameters can be assigned via the local keypad (refer to [‘Adding a modality’](#) on page 86).

- 5 The Drystar 5302 will continue with the ‘Select for Modality’ screen, allowing you to change the Look-up table, the Interpolation and the maximum density (Dmax) values manually.

```
Select for      [OK]
{Modality name>
1 Look-up table
2 Interpolation
3 Dmax
```

- 6 In the ‘Select for Modality’ screen, press the Down key, followed by the Confirm key to select ‘Interpolation’.

The ‘Interpolation’ screen is displayed:

```
Select for      [OK]
{Modality name>
1*Replication
2 Linear
3 Cubic Hi-res
4 CubicBel
5 None
```

- 7 Press the up/down key to select the desired interpolation setting for this modality.

- ◆ If you select “Cubic Hi-Res” the following screen will appear, allowing you to adjust the smoothing factor:

```
Select absolute [OK]
smoothing factor:
(advised = -0.7)
| - 2.50|
```

Enter the smoothing factor value by means of the arrow keys. Refer to ‘Data entry’ on page 31 (valid range [-5.00, 0.00]).

- ◆ If you select “CubicBell”, the following screen will appear, allowing you to adjust the smoothing factor:

```
Select absolute [OK]
smoothing factor:
(advised = 0.9)
| 0.35|
```

Enter the smoothing factor value by means of the arrow keys. Refer to ‘Data entry’ on page 31 (valid range [0.10, 1.00]).

- 8 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.



The user should be aware that the interpolation values differ when the A#Sharp feature is deactivated. The A#Sharp feature, which is a technology that enhances the image sharpness, is active by default. For more information about (de)activating the A#Sharp feature, refer to the Drystar 5302 Service manual.

Changing Image quality settings for a modality - Changing the maximum density (Dmax)

- 1 Perform steps 1 and 2 of the [‘Accessing the Change settings menu’](#) procedure on page 68.
- 2 On the Change settings menu, press the Down key four times, followed by the Confirm key to select ‘Image quality’.

The following screen will appear:

```

1 General settings CS
2 <Modality name>
3 <Modality name>
4 <Modality name>
5 etc...

```

- 3 Press the Up/Down key, followed by the Confirm key to select the modality for which you want to change the Image quality settings.

The ‘Image quality’ screen for the selected modality is displayed:

```

Default for CS
<Modality name>
1 Profile default
2 Select other

```

- 4 Do one of the following:
 - If you want to attribute the default profile, select ‘Profile default’ and press the Confirm key.
The Drystar 5302 will be loaded with these settings and return to the ‘Image quality’ main menu (see step 2).
 - If you want to add a custom profile, select ‘Select other’ and press the Confirm key. Proceed with step 5.
 - If the parameter for the selected modality has been set via a remote computer, you will not be able to change the image quality information for this modality via the local keypad. In this case the following screen will appear:

```

<Modalityname>
Parameters can only
be changed by DICOM
configuration tool.

```



In case the image quality parameters need to be changed for this modality, please use the DICOM Configuration tool in the Key-operator mode via a remote connection. For more information, refer to the chapter [‘Controlling the Drystar 5302 via a remote PC \(with browser\)’](#). Alternatively, you can also remove this modality (refer to [‘Removing a modality’](#) on page 85) and add a new modality with the same name. For this new modality new parameters can be assigned via the local keypad (refer to [‘Adding a modality’](#) on page 86).

- 5 The Drystar 5302 will continue with the 'Select for Modality' screen, allowing you to change the Look-up table, the Interpolation and the maximum density (Dmax) values manually.

```

Select for      [OK]
<Modality name>
1 Look-up table
2 Interpolation
|3 Dmax _ _ _ _

```

- 6 In the 'Select for Modality' screen, press the Down key twice, followed by the Confirm key to select 'Dmax'.

The 'Dmax (maximum density)' screen is displayed:

```

Select Dmax for [OK]
<Modality name>
2.80
2.85
|
|*3.10
| 3.15
|
| 3.40 _ _ _ _

```

All maximum densities are selectable starting from 2.80 to 3.40 in steps of 0.05 units. The activated setting is marked with a "*".



The maximum density will be limited to the maximum density of the media.

- 7 Press the up/down key to select the desired maximum density setting for this modality.
- 8 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

Printing images

A number of 'test' images can be printed, either from an external CF-card or from the hard disk:

Print image	Page
Test image	
<i>'Printing test images'</i>	99
From CF-card	
<i>'Printing files from an external CF-card'</i>	100

Accessing the print images menu

- 1 Press the Key-operator key to enter the key-operator mode.
- 2 On the key-operator main menu, press the Down key twice followed by the Confirm key to select 'Print image'.

The 'Print image' menu is displayed:

```

1 Test image  PI
2 From CF-card

```



This menu is the starting point for test image printing.

- 3 Press the Escape key to return to the key-operator main menu.
- 4 Press the Escape key to quit the key-operator mode.

Printing test images

Test images are useful for checking the print quality. The Drystar 5302 offers a number of built-in test images stored on the hard disk.

- 1 Perform steps 1 to 2 of the [‘Accessing the print images menu’](#) procedure on page 98 to select the ‘Print image’ screen.

- 2 On the Print image menu, press the Confirm key to select ‘Test image’.

The ‘Select test image’ screen is displayed:

```
Select test image [F1]
1 SMPTE_KAN.zip
2 SMPTE_LIN.zip
3 SMPTE_1300.zip
4 TPA.zip _ _ _ _
```

- 3 Press the up/down arrow keys to select the desired test image, followed by the Confirm key.

The ‘Number of copies’ screen is displayed:

```
Number of copies [F1]
| 1 |————— Number of desired copies
```

- 4 Press the arrow keys to increment/decrement the number. followed by the Confirm key to confirm the number of copies.



For more info, refer to [‘Data entry’](#) on page 31.

- 5 Define the tray for printing.

The ‘Select tray’ screen appears:

```
select tray [F1]
1.Upper tray
2.Lower tray
```

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

The ‘Queuing file’ screen will be shown to indicate to the operator that the printing action is accepted and in process:

```
QUEUING FILE [F1]
<filename>
Please wait
```

After about five seconds this screen will disappear.



If you try to print another image, the following message will appear:

```
Please retry after
current print action
has finished.
```

Wait until one or more print jobs have finished before launching a new one.

Printing files from an external CF-card

TIFF images stored on an external CF-card can be printed using the 'Print from CF-card' function.



LZW compressed images are allowed.

- 1 Perform steps 1 to 2 of the '[Accessing the print images menu](#)' procedure on page 98 to select the 'Print image' screen.
- 2 On the Print image menu, press the Down key, followed by the Confirm key to select 'From CF-card'.

The 'Print from Compact Flash Card' screen is displayed:

```
Print from
CF-card
Please insert card
```

- 3 Insert the CF-card containing the TIFF file(s) you want to print.



Refer to '[Inserting a CF-card](#)' on page 25.

The 'Select image' screen is displayed:

```
Select image
1 SMPTE.tif
2 IPA.tif
3 Test.tif
```

- Press the up/down arrow keys to select the desired image file, followed by the Confirm key.

The 'Number of copies' screen is displayed:



- Press the arrow keys to increment/decrement the number, followed by the Confirm key to confirm the number of copies.



For more info, refer to 'Data entry' on page 31.

- Define the tray for printing.

The 'Select tray' screen appears:



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

The 'Queuing file' screen will be shown to indicate to the operator that the printing action is accepted and in process:



After about five seconds the following screen appears:



- Remove the CF-card and press the Confirm key to continue.

The print job is stored in the print queue.

Saving the configuration settings

The save configuration menu allows you to save of all printer settings or to save only the network setting:

Save configuration	Page
General	
<i>'General save configuration procedure'</i>	<i>103</i>
Network only	
<i>'Network only save configuration procedure'</i>	<i>105</i>

Accessing the save configuration menu

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

The 'Save configuration' screen appears:



This menu is the starting point for saving printer settings.

- 3 Press the Escape key to return to the key-operator main menu.
- 4 Press the Escape key to quit the key-operator mode.

General save configuration procedure

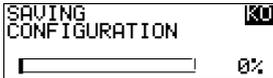
Each time the settings have been changed and confirmed, an automatic back-up of the old configuration is made on the hard disk. You will also be asked to create a back-up on an external CF-card.



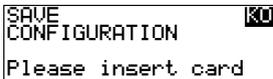
It is also possible (and recommended) to regularly make a back-up of the printer settings to ensure safe restoring of the values when required.

- 1 Perform steps 1 to 2 of the [‘Accessing the save configuration menu’](#) procedure on page 103 to select the ‘Save configuration’ screen.
- 2 On the Save configuration menu, press the Confirm key to select ‘General’.

The following screen appears:



The printer settings are saved automatically to the hard disk. When 100% is reached, the following ‘Save configuration’ screen is displayed and the printer will ask you to insert a CF-card:

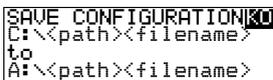


- 3 Insert a CF-card.



Refer to [‘Inserting a CF-card’](#) on page 25.

The printer saves the configuration on the external CF-card:



When the writing of the save set is finished, the printer will ask you to remove the CF-card:



4 Remove the CF-card.



Refer to *'Removing a CF-card'* on page 26.

As soon as the CF-card has been removed, the following screen is displayed:

```
Please note that  BAC_<save_set_name>
was written to the
CF-card as backup.
```



The <save set name > is preceded by the characters "BAC". BAC stands for General backup.

- 5 Label the CF-card with the BAC_<save_set_name> and press the Confirm key. The program will return to the Save configuration screen (see *'Accessing the save configuration menu'* on page 102).

Network only save configuration procedure

- 1 Perform steps 1 to 2 of the [‘Accessing the save configuration menu’](#) procedure on page 103 to select the ‘Save configuration’ screen.
- 2 On the Save configuration menu, press the Down key, followed by the Confirm key to select ‘Network only’.

The following screen appears:

```

Please enter network name: [ ] [OK]
[ ] e.g. hospital_site1
(max. 16 char)
  
```



A blank network name or a network name with spacings is not allowed.

- 3 Press the Confirm key to confirm the network name.

The network settings are temporary saved on the hard disk.

```

SAVE NETWORK [OK]
[ ] 0%
  
```

When 100% is reached, the following ‘Save network’ screen is displayed and the printer will ask you to insert a CF-card:

```

SAVE NETWORK [OK]
Please insert card
  
```

- 4 Insert a CF-card.



Refer to [‘Inserting a CF-card’](#) on page 25.

The printer saves the network settings on the external CF-card:

```

SAVE NETWORK [OK]
C:\<path><filename>
to
A:\<path><filename>
  
```

When the writing of the save set is finished, the printer will ask you to remove the CF-card:

```

SAVE NETWORK [OK]
Please remove card
  
```

5 Remove the CF-card.



Refer to [‘Removing a CF-card’](#) on page 26.

As soon as the CF-card has been removed, the following screen is displayed:

```
Please note that  _____ NWS_<save_set_name>
was written to the
CF-card as backup.
```



The <save set name > is preceded by the characters “NWS”. NWS stands for Network only.

- 6 Label the CF-card with the NWS_<save_set_name> and press the Confirm key. The program will return to the Save configuration screen (see [‘Accessing the save configuration menu’](#) on page 102).

Restoring the configuration settings

The restore configuration menu allows you to restore all configuration settings of the printer or to restore only the network setting:

Restore configuration	Page
General	
‘Restoring the printer settings’	108
Network only	
‘Restoring the network settings’	112

Accessing the restore configuration menu

- 1 Press the Key-operator key to enter the key-operator mode.
- 2 On the key-operator main menu, press the Down key four times, followed by the Confirm key to select ‘Restore configuration’.

The ‘Restore configuration’ screen appears:



This menu is the starting point for restoring printer settings.

- 3 Press the Escape key to return to the key-operator main menu.
- 4 Press the Escape key to quit the key-operator mode.

Restoring the printer settings

When necessary, you can restore the configuration settings of the printer. The following functions are available for restoring a back-up copy of the configuration files:

- *‘Restoring printer settings from an external CF-card’* (page 108)
- *‘Restoring printer settings from the hard disk’* (page 111)

Restoring printer settings from an external CF-card

- 1 Perform steps 1 to 2 of the *‘Accessing the re store configuration menu’* procedure on page 107.

- 2 On the Restore configuration menu, press the Confirm key to select ‘General’.

The following ‘Restore Configuration’ screen appears:

```
RESTORE          [OK]
CONFIGURATION:
1 From CF-card
2 From 21/04/05
```

- 3 Press the up/down arrow keys to select ‘From CF-card’ followed by the Confirm key to restore the configuration settings of the printer from a CF-card.

The printer will ask you to insert a CF-card:

```
RESTORE          [OK]
CONFIGURATION
Please insert card
```

4 Insert the CF-card, which contains a back-up of the printer settings.



Refer to 'Inserting a CF-card' on page 25.



Make sure that you insert the correct CF-card, containing the printer settings you want to restore.

- ◆ If no data are available on the CF-card, the following message is displayed:

```
RESTORE
CONFIGURATION
No dataset found!
Please remove card
```

- ◆ If multiple data are present on the CF-card, the following screens appear successively:

```
Loading data ...
Please wait
```

Afterwards, the 'Restore CF-card configuration' screen is displayed:

```
RESTORE CF-CARD  [OK]
CONFIGURATION:
1 From 02/02/05
2 From 28/01/05
3 From 25/01/05
etc....
```

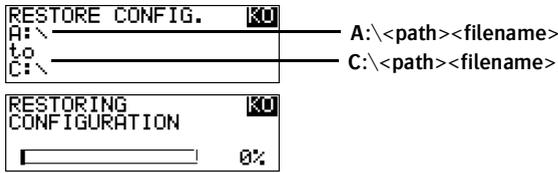
5 Press the up/down arrow keys to select the desired save set file, followed by the Confirm key.

The following confirmation screen is displayed:

```
Restore data      [OK]
from CF-card:
From 02/02/05 16:30
YES(✓)           NO(X)
```

- 6 Press the Confirm key (YES) to proceed with the selected file, or the Escape key (NO) to quit the procedure without any changes.

If you press the Confirm key, the printer will restore the configuration from the external CF-card on the hard disk and the following screens appear successively:



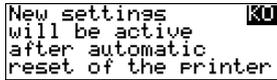
When the restoring of the save set file is finished, the printer will ask you to remove the CF-card:



- 7 Remove the CF card.

 Refer to *'Removing a CF-card'* on page 26.

As soon as the CF-card has been removed, the following screen is displayed (when necessary):



Restoring printer settings from the hard disk

- 1 Perform steps 1 to 2 of the [‘Accessing the restore configuration menu’](#) procedure on page 107.
- 2 On the Restore configuration menu, press the Confirm key to select ‘General’. The following ‘Restore Configuration’ screen appears:

```
RESTORE          [OK]
CONFIGURATION:
1 From CF-card
2 From 21/04/05
```

- 3 Press the up/down arrow keys to select the save set file from the hard disk (e.g. ‘From 21/04/05 15:34’) followed by the Confirm key to restore the configuration settings of the printer from the hard disk.

The following screen is displayed:

```
UPDATE BACKUP on [OK]
CF-card?
YES(✓)           NO(✗)
```



Before restoring the save set file, you have the opportunity to save the current configuration. Therefore, the ‘Update back-up on CF-card’ screen is displayed.

- 4 Do one of the following:
 - If you want to back up the current configuration on an external CF-card, press the Confirm key (YES). The printer will perform the [‘General save configuration procedure’](#) on page 103).
 - If you only want to restore the configurations on the printer hard disk, press the Escape key (NO) and proceed with step 5.
- 5 When the restoring of the save set file is finished, the following screen is displayed (when necessary):

```
New settings    [OK]
will be active
after automatic
reset of the printer
```

Restoring the network settings

When necessary, you can restore the network settings of the printer. You can only restore a back-up copy of the network settings from an external CF-card.

- 1 Perform steps 1 to 2 of the *'Accessing the re store configuration menu'* procedure on page 107.
- 2 On the Restore configuration menu, press the Down key, followed by the Confirm key to select 'Network only'.

The following 'Restore network' screen appears:

```
RESTORE NETWORK  [KO]
Please insert card
```

- 3 Insert the CF-card, which contains a back-up of the network settings.



Refer to *'Inserting a CF-card'* on page 25.



Make sure that you insert the correct CF-card, containing the network settings you want to restore.

◆ If no data are available on the CF-card, the following message is displayed:

```
RESTORE NETWORK  [KO]
No dataset found!
Please remove card
```

◆ If multiple data are present on the CF-card, the following screens appear successively:

```
Loading data ...
Please wait
```

Afterwards, the 'Restore network' screen is displayed:

```
RESTORE NETWORK  [KO]
1 From 05/04/05
2 From 28/03/05
etc...
```

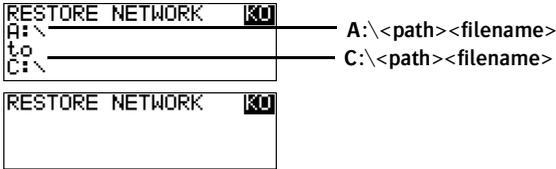
- 4 Press the up/down arrow keys to select the desired save set file, followed by the Confirm key.

The following confirmation screen is displayed:

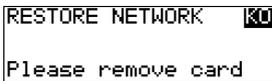
```
RESTORE NETWORK  [KO]
From CF-card
From 05/04/05 16:30
YES(/)          NO(X)
```

- 5 Press the Confirm key (YES) to proceed with the selected file, or the Escape key (NO) to quit the procedure without any changes.

If you press the Confirm key, the printer will restore the network settings from the external CF-card on the hard disk and the following screens appear successively:



When the restoring of the save set file is finished, the printer will ask you to remove the CF-card:

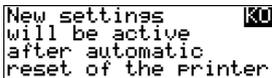


- 6 Remove the CF card.



Refer to *'Removing a CF-card'* on page 26.

As soon as the CF-card has been removed, the following screen is displayed (when necessary):



Performing the calibration procedures

Accessing the Calibration menu

- 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'.

The 'Select calibration' menu is displayed:

```
SELECT          [OK]
CALIBRATION
1 Film calibration
2 Clean therm. head
```



This menu is the starting point for calibrations.

- 3 Press the Escape key to return to the key-operator main menu.
- 4 Press the Escape key to quit the key-operator mode.

Film calibration



In this part, we always will elaborate a case for the lower tray. The procedure of film calibration is identical for the upper tray.

The film calibration combines maximum density (Dmax) and sensitometry calibration and is activated as one single procedure. Separate maximum density and sensitometry calibration steps are not required.

- 1 Perform steps 1 to 2 of the [‘Accessing the Calibration menu’](#) procedure on page 114 to select the ‘Calibration’ screen.
- 2 On the Select calibration menu, select ‘Film calibration’.

The ‘Select tray’ screen appears:

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

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

The ‘Film calibration’ screen appears:

```
LOWER INPUT TRAY: KO
FILM CALIBRATION
in progress
[ ] 0%
```

The counter indicates the progress of the calibration process. The calibration film is measured automatically by the built-in MDM (Macro Densitometer). The Drystar 5302 is being calibrated during the printing process.



If the Drystar 5302 cannot read the Film identification tag, no calibration is possible and the following message is displayed:

```
UNIDENTIFIED MEDIA KO
in input tray.
Solve incident and
retry afterwards.
```

Press the Confirm key to retry calibrating.

- 4 If the film calibration failed, the following message will appear.

```
LOWER INPUT TRAY: KO
FILM CALIBRATION
FAILED
Please retry
```

Press the Confirm key to retry return to the calibration menu.

5 When the film calibration has been completed successfully, three cases are possible:

- Calibration successful, results OK.

The obtained maximum density (Dmax (3.10)) after calibration is displayed:



- Calibration successful, but maximum density (Dmax) differs more than 2% from the target value.

The obtained maximum density (3.02) after calibration is displayed:



- Calibration successful, but the maximum density has been reached.

The obtained maximum density (2.95) after calibration is displayed:



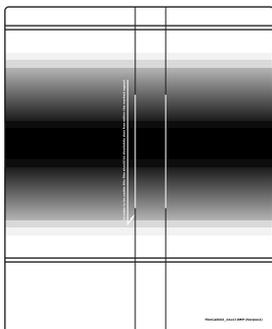
6 Press the Confirm key to return to the Calibration menu.



When the calibration process is interrupted, you will have to start the calibration procedure again. Otherwise, the old calibration parameters will be used.

7 Check the printed test film.

The test film should be similar to the image below (e.g. 14x17" film format).



The calibration film must be free of dust particles or any other artifacts. If this is not the case, clean the print head (refer to *'Cleaning the print head'* on page 118) and restart the calibration procedure.

Density response of Drystar media

Different densitometers can give different results for measuring the same density area on a Drystar film. This is due to spectral response differences between the densitometers.

The density values used in this manual are based on the Macbeth TR924 densitometer. Values measured with another densitometer can vary from these values.

It's possible to change the default densitometer. Refer to '[Changing general image quality settings - Default densitometer](#)' on page 91. You can also compare the density values from different densitometers with each other. Refer to '[Drystar media density response data](#)' on page 207.

Non-calibrated or badly calibrated densitometers can result in even larger differences.

The user has a selection of common densitometers. All shown densities will vary slightly according to the densitometer selection.

To give the user an idea of the differences between the most frequently used densitometers, you can find the measurements for an SMPTE pattern on the Drystar DT 2 B and Drystar DT 2 C films in Appendix B.

Cleaning the print head



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

To clean the print head:

- 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'.

```

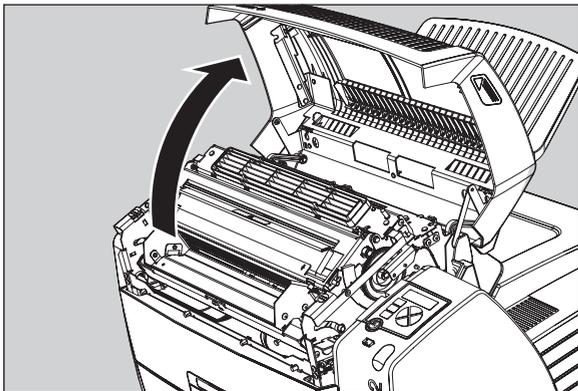
SELECT          OK
CALIBRATION
1 Film calibration
2 Clean therm. head
  
```

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

```

THERMAL HEAD   OK
CLEANING
  Open top cover
  
```

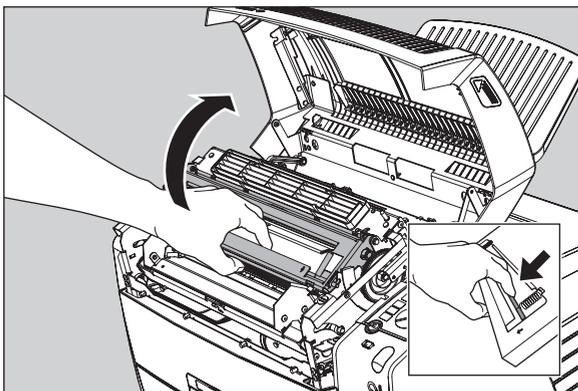
- 5 Open the top cover.



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

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

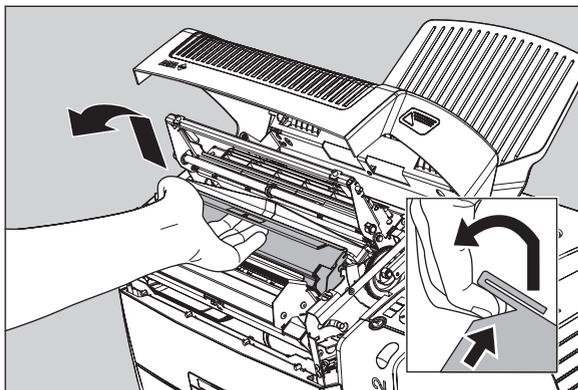
- 7 Open the hold-down bracket.



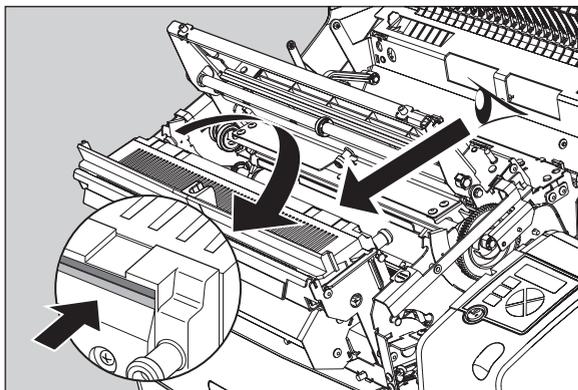
8 Open the print head unit.



The print head unit can be warm.

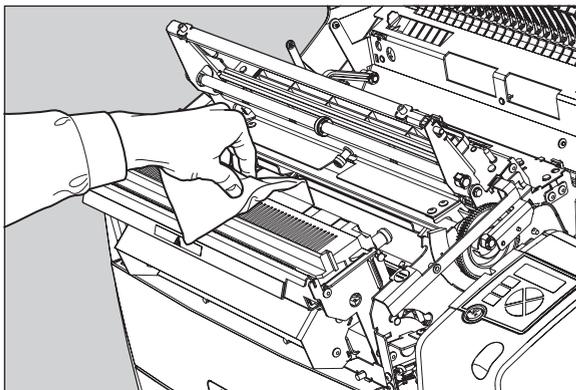


9 Locate and check on sight the print head resistor line.



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.**



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).



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.

Service actions

The Drystar 5302 is capable of assisting the Service engineer and/or hospital technician to maintain or repair the printer.

Overview of service actions

Four groups of service actions are provided by the Drystar 5302.

	Action	Purpose	Who?
1	Error messages	<ul style="list-style-type: none"> To have an overview of the errors that have occurred. 	<ul style="list-style-type: none"> Service engineer Customer (hospital technician)
2	Warning messages	<ul style="list-style-type: none"> To have an overview of the warnings that have occurred. 	<ul style="list-style-type: none"> Service engineer Customer (hospital technician)
3	Repair history	<ul style="list-style-type: none"> To have an overview of the repair operations that have been executed. 	<ul style="list-style-type: none"> Service engineer
4	Maintenance	<ul style="list-style-type: none"> To have an overview of the maintenance actions that are still open. To close a maintenance action when executed. To update a maintenance action. 	<ul style="list-style-type: none"> Service engineer



Depending on the region (country), repair and maintenance can be made available for the “customer”. Please contact the AGFA representative for details about your area.

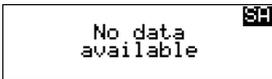
Accessing the Service actions menus

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

The following screen appears:



- 3 To consult one of the service actions, press the Up/Down arrow keys to select the desired service action, followed by the Confirm key.
 - If no data is available for the selected service action, the following screen appears:



- If data available for the selected service action, detailed screens appears.



Please contact your AGFA representative for detailed information about the various service action screens.

- 4 Press the Escape key to return to the key-operator main menu.
- 5 Press the Escape key to quit the key-operator mode.

Quality Control

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

The Drystar 5302 contains an automatic QC feature that has been designed to comply with the grayscale reproduction constancy test, according to the international standard IEC 1223-2-4.

Local Regulations may require other procedures.

The Drystar 5302 QC 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'* on page 125.
- After establishing these values, performing regular daily, weekly and annual quality tests.
Refer to *'Performing quality control (QC) tests'* on page 133.

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

The QC image (Refer to *'QC test image'* on page 126) 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 211.

Establishing the reference values and verifying image quality

After installation of a new Drystar 5302 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'* on page 128.
- Drystar 5302 image geometry. Refer to *'Establishing the image geometry reference values'* on page 131.

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'* on page 132.

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 *'Quality Control Charts'* on page 211.

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

- The type and serial number of the Drystar 5302.
- 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.



Before you can establish the daily operating levels, the Drystar 5302 must be switched on for at least 15 minutes and it must be calibrated as well.

Refer to *'Switching on the Drystar 5302'* on page 32 and *'Performing the calibration procedures'* on page 114.

QC test image

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.

The following two examples illustrate a QC test image for a different film format.



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

- QC test image for film format 14x17"

Quality Control Test Image

1
2
3

Identification

Initials: _____ Date: _____

Time: _____

↓ **Geometry test**

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

Dimension A

Dimension B

- QC test image for film format 8x10"

The image shows a dark rectangular area on the left containing three circular targets, each with a central dot and four surrounding dots. Lines connect these targets to the right-hand section of the test image. The right-hand section is a white rectangular area containing various tests and fields for data entry.

Geometry test

Daily density tests

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

Identification

Initials: _____ Date: _____
 Time: _____

Dimension A (width) and Dimension B (height) are indicated with arrows. Circled numbers 1, 2, and 3 are placed near the bottom of the test image, with lines pointing to the three circular targets in the dark area.

Establishing the daily operating reference density levels

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

- Low density
- Mid density
- High density



The densitometer of the Drystar 5302 is calibrated at installation. Authorized service personnel should recalibrate the densitometer annually or after major service or repair.

To establish the daily operating levels, proceed as follows:

- 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          KC
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.

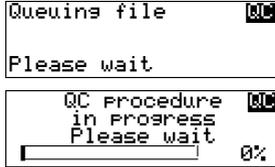
The 'Select tray' screen appears:

```

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

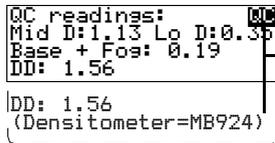
- Press the Up/Down arrow keys to select the desired tray, followed by the Confirm key.

The following screens appear successively:



The Drystar 5302 will automatically print the QC test image.

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



The density levels are displayed, e.g:
 Max D: 3.1 Hi D: 1.91
 Mid D: 1.13 Lo D: 0.35
 Base+Fog: 0.19
 DD: 1.56

The displayed values 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 this QC procedure	



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.

Refer to *'Preventive maintenance schedule'* on page 172 and *'Maintaining image quality and resolving image quality problems'* on page 194, or call your local Agfa service organization.

- 7 Record the low, mid and high density levels on Chart 1 ('Drystar 5302 Determination of Operating Levels'). Refer to '[Quality Control Charts](#)' on page [211](#).
- 8 Press the Confirm key to return to the main menu.
- 9 Repeat step [1](#) through [8](#) once a day for five consecutive days, as indicated on the Drystar 5302 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 5302 Daily Density Control Chart'). Refer to '[Quality Control Charts](#)' on page [211](#).

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](#)' on page [133](#).

Establishing the image geometry reference values

To establish the image geometry reference values, proceed as follows:

- 1 Print the QC test image or use the previously printed test image.
For an example, see *'QC test image'* on page 126.
- 2 To determine the reference values for geometry, measure the distances A and B of the geometric square on the test image.



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.

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 A_{ref} and B_{ref} on Chart 4 ('Drystar 5302 Geometric Consistency Control Chart'). Refer to *'Quality Control Charts'* on page 211.
These charts will be used for the annual quality test. For more information, refer to *'Performing the Annual QC tests'* on page 136.
- 4 Save this film for future reference.

Verifying Acceptable Spatial Resolution, Artifact Levels and Low Contrast Visibility



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.

To verify acceptable spatial resolution, artifact levels and low contrast visibility, proceed as follows:

- 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' on page 126). 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' on page 126) and the upper circle (refer to item 2 on the 'QC test image' on page 126).
- 5 Record these values at the top of Chart 3 ('Drystar 5302 Artifacts and Spatial Resolution Control Chart'). Refer to 'Quality Control Charts' on page 211.
- 6 These charts will be used for the weekly quality test. For more information, refer to 'Performing the Weekly QC tests' on page 135.



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.

Refer to 'Preventive maintenance schedule' on page 172 and 'Maintaining image quality and resolving image quality problems' on page 194, or call your local Agfa service organization.

Performing quality control (QC) tests

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



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

- 1 Turn on the Drystar 5302 and wait at least for 15 minutes. Refer to *'Switching on the Drystar 5302'* on page 32.
- 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  KU
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
```

6 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
[Progress bar] 0%
```

The Drystar 5302 will automatically print the QC test image.

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

```
QC readings: [OK]
Mid D:1.13 Lo D:0.35
Base + Fog: 0.19
DD: 1.56
DD: 1.56
(Densitometer=MB924)
```

The density levels are displayed, e.g:
 Max D: 3.1 Hi D: 1.91
 Mid D: 1.13 Lo D: 0.35
 Base+Fog: 0.19
 DD: 1.56

7 Record the low, mid and high density values on Charts 2A and 2B ('Drystar 5302 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 211.

8 Press the Confirm key to return to the main menu.



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.

For possible causes of non-compliance and the respective actions, refer to 'Preventive maintenance schedule' on page 172 and 'Maintaining image quality and resolving image quality problems' on page 194.

Performing the Weekly QC tests

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.



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.

- 1 First, print out the QC test image. Refer to *'Performing the daily QC test'* on page 133.
- 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'* on page 126). 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'* on page 126) and the upper circle (refer to item 2 on the *'QC test image'* on page 126).
- 5 Record these values on Chart 3 ('Drystar 5302 Artifacts and Spatial Resolution Control Chart').



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 5302 can be used for any further clinical imaging.

Refer to *'Preventive maintenance schedule'* on page 172 and *'Maintaining image quality and resolving image quality problems'* on page 194, or call your local Agfa service organization for assistance.

Performing the Annual QC tests

Geometric Consistency Test

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

- 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'* on page 131.



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.

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 5302 Geometric Consistency Control Chart').
- 4 Compare the measured A and B dimensions with the reference dimension values, A_{ref} and B_{ref} on Chart 4 ('Drystar 5302 Geometric Consistency Control Chart').

The differences between 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



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

Installation

Two installation operations are possible:

- install new software, or upgrade existing software from a CF-card,
- perform a complete installation procedure, using the printer installation wizard.

Installing new or upgrading existing software

It is possible to install new software or new software components.

Different software (components) can be installed:

- language files,
- modality specific files,
- LUT,
- calibration files,
- ...

The new software will be activated after the installation procedure (this may require a reset operation). The previously installed software components will be automatically removed when installing new software or new data. A copy of the previous configuration is saved (as a dataset) on the hard disk.

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

The 'Installation' screen will be displayed:

```

1 Installation      IN
   from CF-card
2 Printer
   installation
  
```

3 Press the Confirm key to select 'Installation from CF-card'.



Before the procedure starts, the system suggests you make a back-up copy of the current configuration. It is highly recommended to do this, so you can always restore it in case something should go wrong.

The following screen is displayed:

```
Before install.      [OK]
Please make backup
1 OK, make backup
2 SKIP backup
```

- If you want to back up the current configuration on an external CF-card, select 'Ok, make backup', followed by the Confirm key. The printer will perform the *'General save configuration procedure'* (See page 103. Note: the complete configuration is saved!).
- If you do not want to back up the current configuration, press the Up/Down arrow keys to select 'SKIP backup', followed by the Confirm key.

4 After the back-up is finished (or if you have chosen to skip the back-up), the system will proceed with the actual upgrade.

The 'Installation from CF-card' screen is displayed:

```
Installation        [OK]
from CF-card
Please insert card
```

5 Insert the CF-card.



Refer to 'Inserting a CF-card' on page 25.



If no data available on the CF-card, the following message is displayed:

```
INSTALLATION      [OK]
FROM CF-CARD
No dataset found!
Please remove card
```

6 If there are multiple dataset files present on the CF-card, a list is shown.

The 'Select dataset' screen is displayed:

```
Select dataset:    [OK]
Dataset xyz v1.00
Dataset abc v1.00
Dataset def v1.00
etc...  _ _ _ _ _
```

- 7 Press the up/down arrow keys to select the desired save set file, followed by the Confirm key.

The following confirmation screen is displayed:

```
Installation      [OK]
from CF-card:
<Dataset def v1.00>
YES(✓)           NO(X)
```

- 8 Press the Confirm key (YES) to proceed with the selected file, or the Escape key (NO) to quit the procedure without any changes.

The printer restores the configuration from the external CF-card:

```
Copying          [OK]
A:\_____ A:\<path><filename>
to _____
C:\_____ C:\<path><filename>
```

When the copying of the save set is finished, the printer will ask you to remove the CF-card:

```
Installation      [OK]
finished.
Please remove card
```

- 9 Remove the CF card.



Refer to '[Removing a CF-card](#)' on page 26.

As soon as the CF-card has been removed, the following screen is displayed (when necessary):

```
New settings will [OK]
be active after
reset; reset now?
NOW(✓)           LATER(X)
```

- 10 Press the Confirm key to reset the printer or press the Escape key to reset the printer later. After the reset, the new settings will be active.

Using the installation wizard

When you install the Drystar 5302, the installation wizard will guide you through the complete installation procedure.

The installation wizard consists of three steps:

- ‘[Entering the printer network settings](#)’ (page 142),
- ‘[Entering modality specific settings](#)’ (page 146),
- ‘[Saving the configuration](#)’ (page 149).

When you have entered the required data, the installation is complete.



Although the installation wizard consists of three separate steps, these steps cannot be performed separately.



To change the settings once the installation is completed, refer to ‘[Changing the configuration settings](#)’ on page 66.

Starting the installation wizard

- 1 Press the Key-operator key to enter the key-operator mode.
- 2 On the key-operator main menu, press the Down key eight times, followed by the Confirm key to select ‘Installation’.

The ‘Installation’ screen will be displayed:

```
1 Installation   IN
   from CF-card
2 Printer
   installation
```

- 3 Press the down key, followed by the Confirm key to select ‘Printer installation’.

The ‘Language’ screen is displayed with the available languages (contact Agfa for the latest Drystar 5302 language availability status). For example:

```
Select language:
1 *English
2 Nederlands
3 Deutsch
```

The currently active language is marked with a “*” on the left.



The number of displayed languages depends on the installed dataset.

- 4 Press the up/down arrow keys to select the desired language.
- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Date' screen is displayed:

```
Date: [OK]
| 08-AUG-2005 |
| dd-mmm-yyyy |
```

- 6 Press the up/down arrow keys to increment/decrement the numbers or the month. Press the left/right arrow keys to move through the digits.



For more info, refer to 'Data entry' on page 31.

- 7 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Time' screen is displayed:

```
Time: [OK]
| 09:09:40 |
| hh:mm:ss  |
```

- 8 Press the up/down arrow keys to increment/decrement the numbers. Press the left/right arrow keys to move through the digits.



For more info, refer to 'Data entry' on page 31.

- 9 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Printer installation wizard' screen will appear:

```
INSTALLATION [OK]
WIZARD will guide
you through the
procedure
```

10 Press the Confirm key to continue.

A screen with information on the sequence of the steps will appear:

```

INSTALLATION [F4]
WIZARD is divided
in 3 steps:
1 Printer network
   settings
2.Host specific
   settings
3.Save configuration )
    
```

11 Press the Confirm key to start with step 1 or press the Escape key to quit the procedure.

Entering the printer network settings

Some instruction screens will show the information you need to complete this part of the installation:

```

INSTALLATION [F4]
WIZARD
step 1: Printer
network settings
    
```

1 Press the Confirm key to continue.

```

Collect info [F4]
concerning:
Printer IP-address
Netmask
   in case of subnets
-Router IP-address
   in case of subnets
-Printer AE-title
-----
ask your network
administrator for
this information _ _ )
    
```

2 Press the Confirm key to continue.

The 'Printer IP address' screen is displayed:

```

Printer IP-address [F4]
| 192.168.168.168 |
| (255.255.255.255) |
    
```

If the IP address has already been assigned, it will be shown on the display.



When no DHCP server is available and when the IP address of the printer has never been set, the printer IP address will be set to the APIPA address 169.254.10.10.

- 3 Press the up/down arrow keys to increment/decrement the numbers. Press the left/right arrow keys to move through the fields. Press the Confirm key to store the data.



Refer to 'Data entry' on page 31.



Note that blank spaces will be ignored (see examples below).

Example 1: if the IP address is 120.000.120.120, then the data entry should be as follows:

```
Printer IP-address [OK]
|120.000.120.120|
(255.255.255.255)
```

Example 2: if the IP address is 120.0.120.120, then the data entry should be as follows:

```
Printer IP-address [OK]
|120.0.120.120|
(255.255.255.255)
```

- 4 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Netmask' screen is displayed:

```
Netmask: [OK]
|250.250.250.250|
(255.255.255.255)
```

If the netmask has already been assigned, it will be shown on the display.



When no DHCP server is available and when the subnet mask of the printer has never been set, the printer subnet mask will be set to the APIPA address 255.255.0.0.

- 5 Enter the netmask by means of the arrow keys. Refer to 'Data entry' on page 31.



Note that blank spaces will be ignored (see example).

Example: if the netmask is 250.250.250.0, then the data entry should be as follows:

```
Netmask: [OK]
|250.250.250.0|
(255.255.255.255)
```

- 6 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Router IP address' screen is displayed:

```
Router IP-address: [OK]
| 120.120.120.120 |
| (255.255.255.255) |
```

If the Router IP address has already been assigned, it will be shown on the display.

- 7 Enter the Router IP address by means of the arrow keys. Refer to '[Data entry](#)' on page 31.



Note that blank spaces will be ignored (see examples below).

Example 1: if the IP address is 120.000.120.120, then the data entry should be as follows:

```
Router IP-address: [OK]
| 120.000.120.120 |
| (255.255.255.255) |
```

Example 2: if the IP address is 120.0.120.120, then the data entry should be as follows:

```
Router IP-address: [OK]
| 120. .0.120.120 |
| (255.255.255.255) |
```

- 8 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Printer AE-title' screen is displayed:

```
Printer AE-title: [OK]
| |
| (max. 16 char) |
```

If the Printer AE-title has already been assigned, it will be shown on the display.

- 9 Change the Printer AE-title by means of the arrow keys. Refer to '[Data entry](#)' on page 31. The Printer AE-title is limited to 16 characters.



Entries are case sensitive.

- 10 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

A screen summarizing the information you have entered will appear:

```

Following data      [OK]
is entered:
Printer IP-address
123.123.123.123
-----
-Netmask:
 255.255.252.0
Router IP-address:
 10.233. 92.1
Printer AE-title:
 Drystar5302
-----
x Repeat step 1
v Go to step 2
  
```

Printer IP-address, e.g. 10.203. 93. 74

- 11 Press the Confirm key to go to step 2 of the installation wizard or press the Escape key to repeat step 1.

When you have pressed the Confirm key, the following screen will appear:

```

Step 1 is          [OK]
finished
Step 2:
Modality settings
-----
Press x to exit
the wizard. You can
continue later via
Browser or keypad.
  
```

- 12 From here on, you can use the Web browser on the remote PC to continue with the installation wizard. The data entries are the same, but the browser is easier to ‘manipulate’ than the local keypad.

Press the Escape key to exit the wizard on the local keypad.

Refer to ‘[Controlling the Drystar 5302 via a remote PC \(with browser\)](#)’ on page 151.

- 13 If you wish to continue with the installation wizard from the local keypad, press the Confirm key to continue.

Entering modality specific settings

An instruction screen shows the information you need to complete this part of the installation:

```
Collect info      [OK]
concerning the new
modalities:
-Daily used modality

| name
|-Modality brand
|-Modality type
|-Modality AE-title
|-----|
ask your network
administrator for
this information. )
```

- 1 Press the Confirm key to continue or press the Escape key to skip this step.

The 'Enter daily used Modality name' screen is displayed:

```
Enter daily used [OK]
modality name:
|
(max. 8 char)
```

- 2 Enter the daily used modality name (nickname) by means of the arrow keys. Refer to *'Data entry'* on page 31. The nickname is limited to 8 characters.
- 3 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Select modality brand name' screen is displayed:

```
Select modality [OK]
brand name:
1 Default Profile
2 FUJI
|
3 SIEMENS
4 PHILIPS )
```

- 4 Press the up/down arrow keys to select the appropriate modality brand name.
 - ◆ If you have selected 'Default profile', the modality AE-title will be linked with the default settings. Proceed with step 7.

- 5 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Select modality type' screen is displayed:

```

Select modality type: [OK]
type:
1 Default Profile
2 MXVIEW
3 MX800

```

- 6 Press the up/down arrow keys to select the appropriate modality type.
- 7 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Enter modality AE-title' screen is displayed.

```

Enter modality AE-title: [OK]
| |
| (max. 16 char) |

```

- 8 Enter the modality AE-title by means of the arrow keys.
Refer to *'Data entry'* on page 31. The modality AE-title is limited to 16 characters.
- 9 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

The 'Select preferred FILM TYPE for' screen will appear:

```

Select preferred FILM TYPE for [OK]
{modality name}
1*Drystar DT 2B
2_Drystar DT 2C _ _

```



You can find the film type on the film packaging, e.g. 'DRYSTAR DT 2C'.

- 10 Press the up/down key to select the preferred film type for this modality.
If the current film type in the trays does not match the selected film type, the following message is displayed:

```

Preferred FILM TYPE for [OK]
{Modality name}
IS CURRENTLY NOT
AVAILABLE IN INPUT
TRAY Use the
selected film type?
YES(v) NO(x)

```

- 11 Press the Confirm key to store the data, or the Escape key to quit the procedure without any changes.

A screen summarizing the information you have entered will appear:

```

Following data      [OK]
is entered:
  Daily used name:
  CTscanner

|Brand name:
| Philips
|Modality type:
| MXVIEW
|Modality AE-title:
| AE 0123456
|Preferred film type:
| Drystar DT 2B
-----
|x Repeat step 2
|v Go to step 3
-----
  
```

The data entry for the new modality is now finished.

- 12 Press the Confirm key to continue the installation wizard or press the Escape key to repeat step 2.

When you have pressed the Confirm key, the printer will ask you if you want to add another modality:

```

ADD other
modality?      [OK]
YES(✓)        NO(✗)
  
```

- If you wish to add another modality, press the Confirm key (YES). You will be taken back to step 2 to repeat the procedure.
- If you do not wish to add another modality, press the Escape key (NO). The following screen will appear:

```

Step 2 is
finished      [OK]
Step 3:
Save configuration
  
```

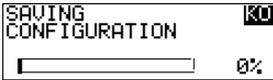
- 13 Press the Confirm key to continue.

Saving the configuration

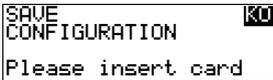


You need to complete this step, otherwise all the install data you have entered will be lost!

- 1 The printer settings are saved automatically to the hard disk.



When 100% is reached, the following 'Save configuration' screen will ask you to insert the back-up CF-card:

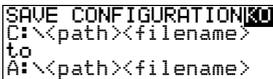


- 2 Insert a CF-card.



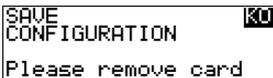
Refer to *'Inserting a CF-card'* on page 25.

As soon as the CF-card is inserted, the 'Copy' screen is displayed.



The printer saves the configuration on the external CF-card

When the writing of the save set is finished, the printer will ask you to remove the CF-card:



- 3 Remove the CF-card.



Refer to *'Removing a CF-card'* on page 26.

As soon as the CF-card has been removed, the following screen is displayed:



The *<save set name >* is preceded by the characters "BAC". BAC stands for General backup.

- 4 Label the CF-card with the BAC_<save_set_name> and press the Confirm key.
The installation is now finished, and the following screen is displayed:

```
Installation finished. OK
Please use menu:
CHANGE SETTINGS and
|CALIBRATION Option |
|for further actions |
|and to fill in the  |
|SITE-SPECIFIC DATA|
```

- 5 Press the Confirm key to accept the installation or press the Escape key to redo the installation.

Controlling the Drystar 5302 via a remote PC (with browser)

This chapter will inform you on how to control the functions of the Drystar 5302 via the browser on a remote PC.

- [Features](#)
- [Setup](#)
- [Setting up the connection](#)
- [Starting the remote session](#)

Features

- All functions that can be accessed via the local keypad and display can also be accessed via a remote PC via the network.

Brief: LOCAL corresponds with MAIN features.

- All functions that can be accessed via Remote connection are not necessarily available via the local keypad.

Brief: REMOTE corresponds with ALL features.

- This remote access allows controlling multiple printers from a networked central PC.

- The prerequisite for remote access is:

- A PC (Windows 2000 is advised),
- Browser software (preferably Microsoft Internet Explorer 6.0),
- A network adapter,
- A **cross-link Ethernet cable** (for a direct link between PC and Drystar 5302) or a **straight Ethernet cable** (for a connection via an existing network).

- Using the remote PC, you have access to five operating modes of the Drystar 5302: Operator mode, Key-operator mode, Service mode, Specialist mode, and Administrator (Security).

Depending on the operating mode, you will need a password to have access:

Need password	Local	Remote
Operator	No	Yes
Key-operator	No	Yes
Service	No access	Yes
Specialist	No access	Yes
Administrator	No access	Yes

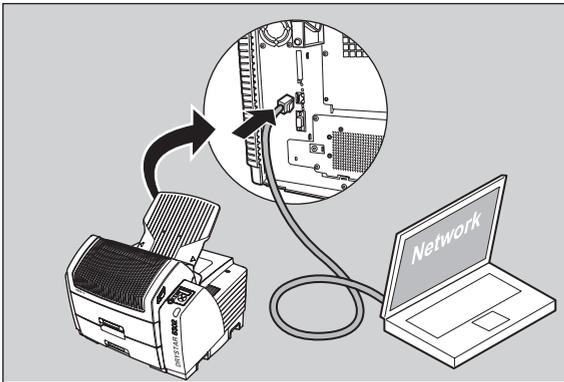
Setup

The Drystar 5302 and the PC with browser can be set up in two ways:

- using a crossed network cable, or
- using a straight network cable.

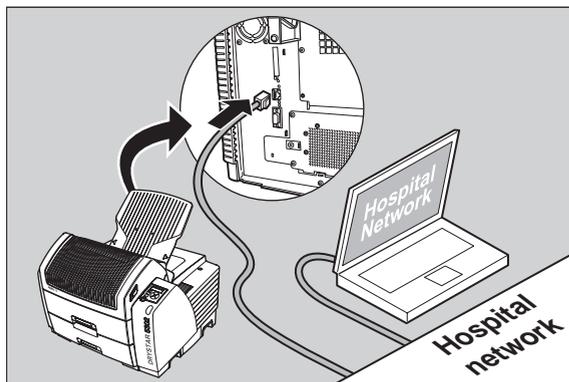
Configuration with crossed network cable

In this configuration, a crossed network UTP cable is used to connect the service PC directly to the printer.



Configuration with straight network cable

In this configuration, the PC is connected to the network with a straight network cable.



Setting up the connection

Setting up a direct link (configuration with crossed network cable)

To set up a direct link, you have to follow two procedures:

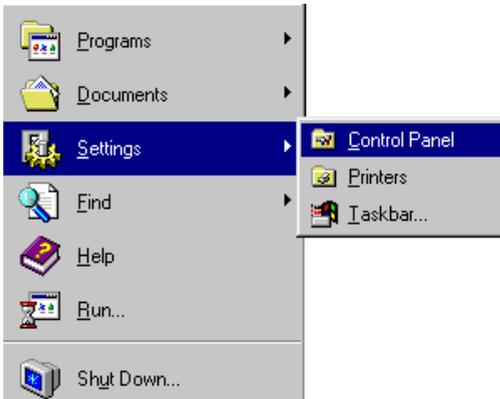
- Attribute a fixed IP address to the PC,
- Switch off all proxy setting in the browser.

When setting up a link, bare in mind the following important hints:

- Always make the physical connection first,
- Depending on the PC and/or Operating System, a reboot may be necessary in order to make the new configuration work.

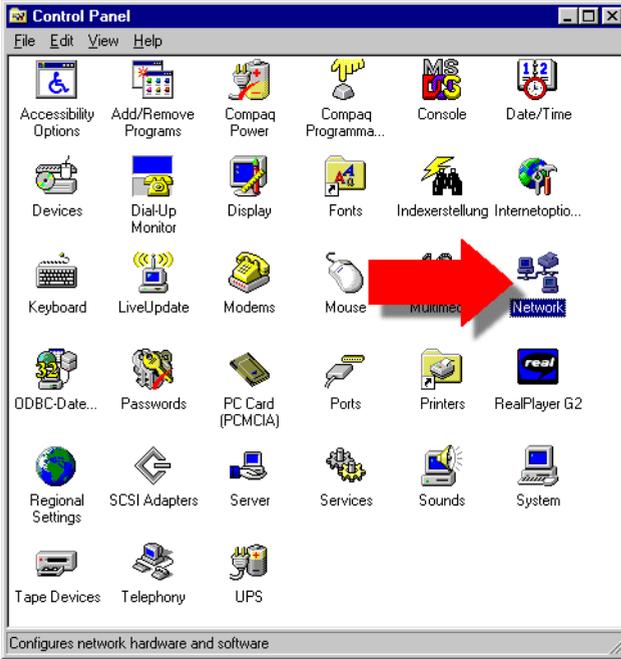
Attributing a fixed IP address to the PC

- 1 Go to Settings via the Start menu of Windows and click Control Panel.

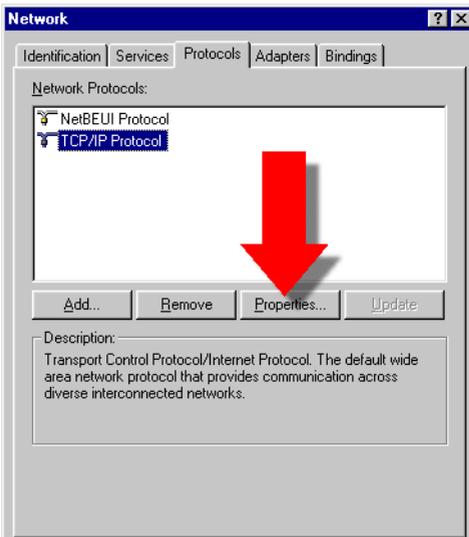


The Control Panel menu will appear.

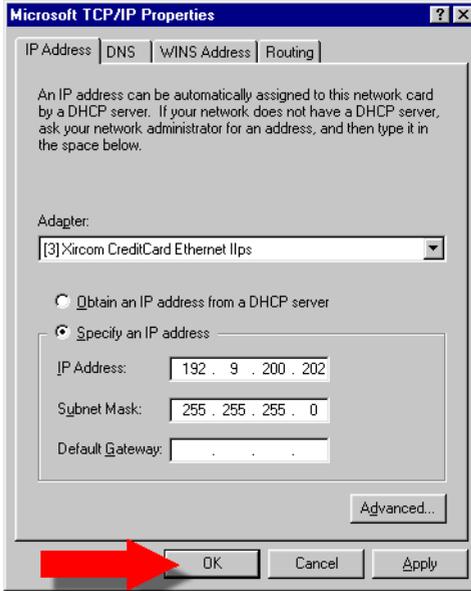
2 In the Control Panel menu, double-click Network.



3 In the Network window, select TCP/IP Protocol, select the Protocols tab, and click Properties.



4 Specify IP address and subnet mask and click OK.

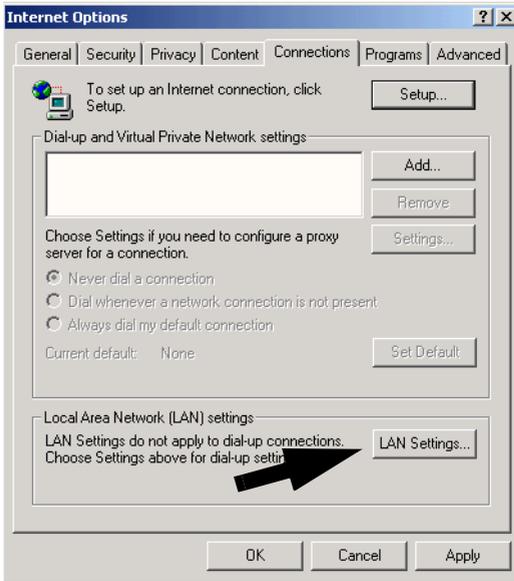


In case of APIPA assigned addresses, set the printer IP address to 169.245.10.10 and the printer subnet mask to 255.255.0.0.

Switching off the proxy settings of the browser

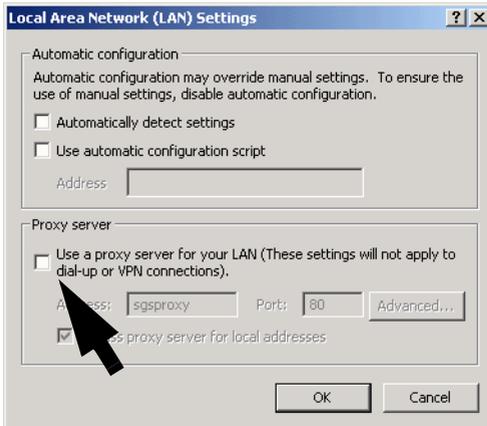
- 1 Open the browser.
- 2 In the Tools menu, click Internet Options.
The Internet Options window will appear.

- In the Internet Options window, go to the Connections tab and click LAN Settings.



The Local Area Network (LAN) Settings window will appear.

- Switch off all proxy settings of the browser and click OK.



The PC is ready to make a connection. Refer to *'Starting the remote session'* on page 160 for more information.

Setting up a link through a network (configuration with straight network cable)

Attribute a fixed and available IP address to your PC. Refer to [‘Attributing a fixed IP address to the PC’](#) on page 155.

The PC is ready to make a connection. Refer to [‘Starting the remote session’](#) on page 160 for more information.

Starting the remote session

Starting the remote session



When starting the remote session, make sure the printer is in 'Ready' mode.

To start the remote session, enter the Drystar 5302 IP address in the Address bar of the browser.

The Browser welcome page appears:



There are five access levels: Operator, Key-operator, Service Engineer, Specialist and Security (also known as administrator). Each level has its own user name and password.



A remote session disables the local keypad and display. While you work remotely, the following screen is displayed:

```
REMOTE ACCESS ACTIVE Blinking
Local keypad is
disabled during
this session.
```

Entering the operator level

To enter the operator level, a password is required.

- User name: Operator
- Password: Operator

This level enables the operator to follow print jobs and perform common tasks.

Entering the Key-operator level

To enter the Key-operator level, click Key-operator tools and enter the following user name and password:

- User name: Drystar
- Password: 5302

You now have access to the Drystar 5302 functions in the key-operator mode.



Only one session is active at one time on one printer.



Mostly, the menu structure and the browser screens are structured in the same way as the local display of the printer. Sometimes they differ slightly.





The screens are English only.



The functionality of some features is extended via remote access. For example, you can:

- print TIFF-images which are “residing” on the remote PC,*
- enter site-specific information,*
- save and restore configuration datasets on/from the remote PC.*



Do not use the Back and Forward buttons of your browser. Use the links included in the web pages instead.

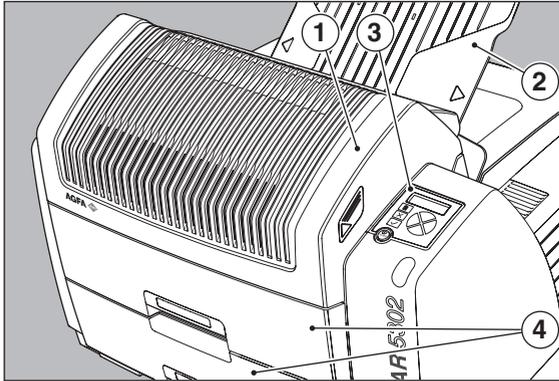
System description

In this informative chapter you will find mechanical and functional descriptions.

- [Main components](#)
- [Functional description](#)
- [Changing the film format of the trays](#)
- [Drystar 5302 network configuration](#)
- [Transport after installation](#)

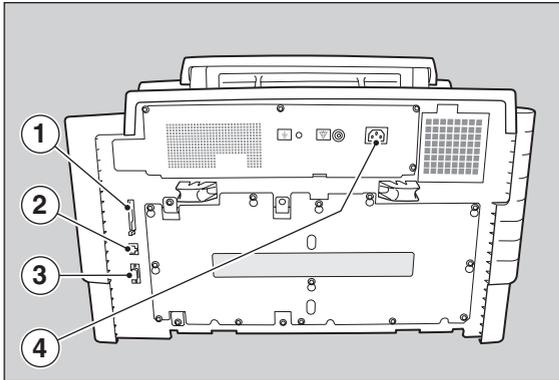
Main components

Front view



1	Top cover
2	Output tray
3	User interface (refer to page 22)
4	Input tray

Rear view



1	CF-card slot
2	Network
3	RS-232 => Service PC
4	Power connection

Functional description

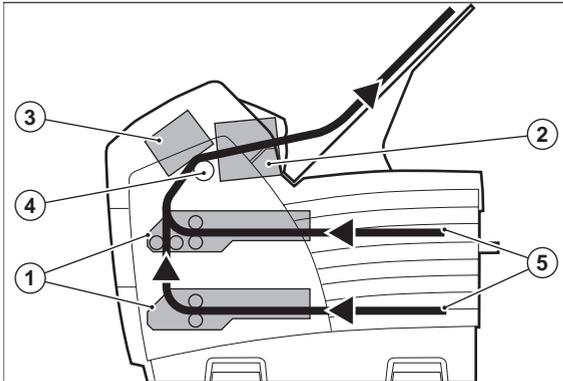
The Drystar 5302 consists of two functional blocks: a controller and a print engine.

The controller

- captures the incoming digital data and stores the image,
- composes the different images, and
- generates the appropriate print engine control signals.

The **print engine** receives the image data from the controller, drives the film through the device and produces black & white hardcopy prints.

The figure below illustrates how the film is transported through the printer.



1	Film pick up unit
2	Output module
3	Print head module
4	Drum
5	Film path

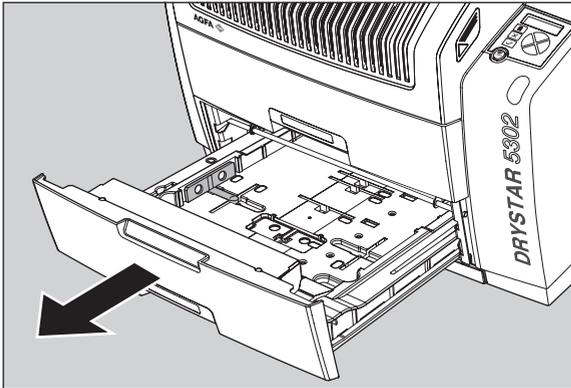
Changing the film format of the trays

The key-operator can adjust the film size setting of both input trays (8x10" up to 14x17" film sizes).

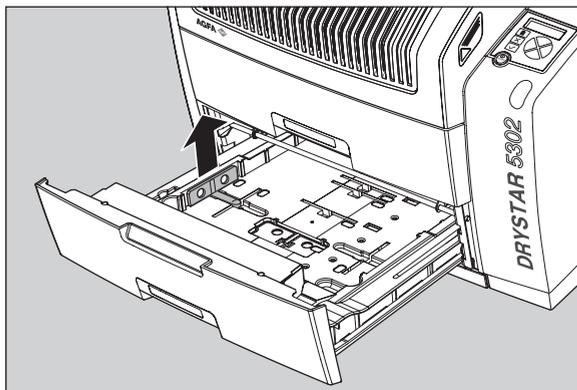
First, the key-operator has to perform a mechanical modification. After this modification, the 'film format' parameter is automatically read from the Film Identification tag when the new film pack is loaded.

Proceed as follows to perform the mechanical modification:

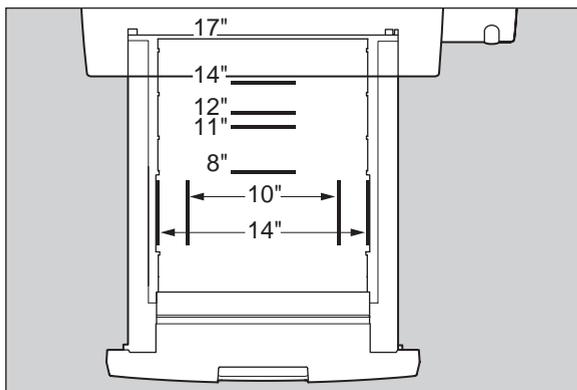
- 1 Make sure that the printer is in 'Ready' mode.
- 2 Open the input tray you want to adapt and remove eventually loaded films.



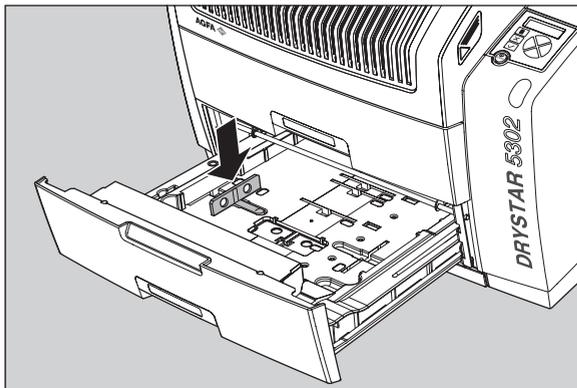
- 3 Remove the film position tab.



- 4 Locate the correct tab position for the desired film format.



- 5 Put the film position tab in place and push it down until it locks.

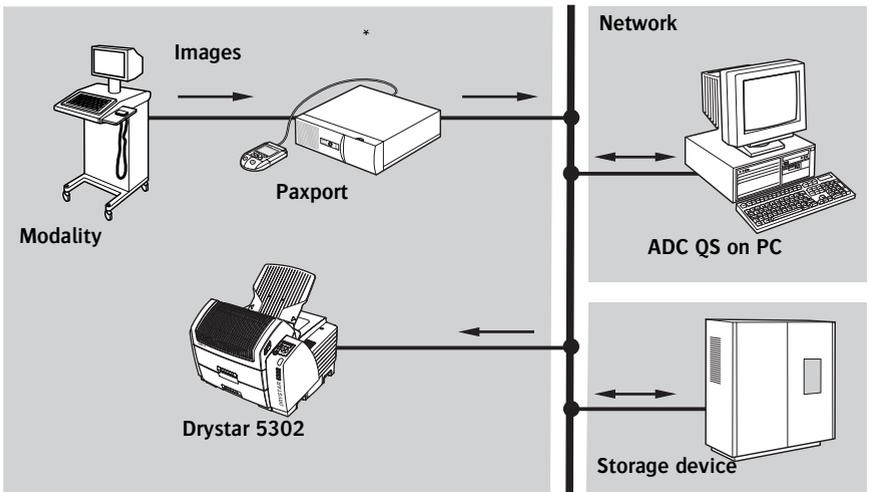


- 6 Load a new film pack. Refer to *'Loading films'* on page 44.

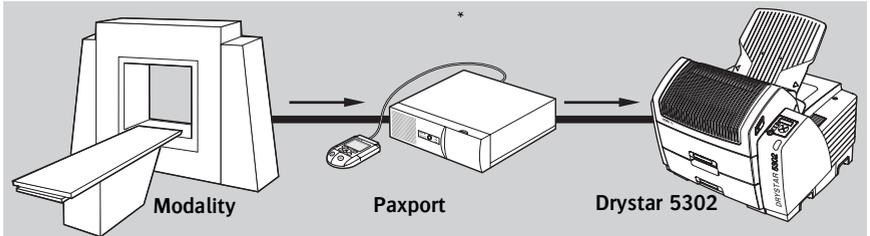
Drystar 5302 network configuration

The Drystar 5302 is a standard network printer. This means that you can just plug it into the (existing) ethernet network without any additional options or accessories. Drystar 5302 is also a native DICOM printer. Therefore the standard DICOM protocol can be used as network protocol, and again without any additional options or accessories the printer will be able to process and print the DICOM jobs.

In this network configuration the Drystar 5302 is of course fully compatible with all other AGFA imaging system components, including the CR digitizers, CR workstations, image buffer components, Paxport and the entire line of Impax stations.



Example of Drystar 5302 in a network configuration



Example of Drystar 5302 in a point-to-point configuration

* A Paxport is required if the modality is not a DICOM modality.

Transport after installation

The Drystar 5302 is quite compact, so moving the printer over a short distance - if required - can be done in a convenient way.

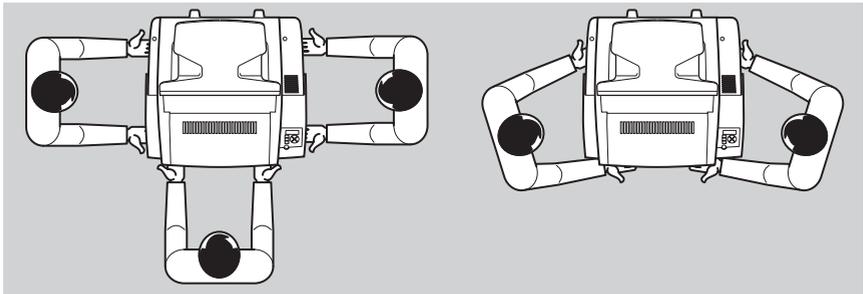


Refer to *'Safety precautions'* on page 11.



Always keep in mind the following safety guidelines:

- The Drystar 5302 should always be transported by two, preferably three persons,
- Always lift the Drystar 5302 by gripping the handles, situated at front, left and right side,
- Make sure the Drystar 5302 is placed on a stable, hard surface table.



- 1 Switch off the Drystar 5302 (refer to *'Switching off the Drystar 5302'* on page 34).
- 2 Disconnect the cables.
- 3 Move the Drystar 5302 to its destination (with 2, preferably 3 persons!).
- 4 Reconnect the cables.
- 5 Switch Drystar 5302 on (refer to *'Switching on the Drystar 5302'* on page 32).

Preventive maintenance

This chapter guides the user through maintenance and cleaning tasks which require no special skills, tools nor training:

- [Preventive maintenance schedule](#)
- [Cleaning the exterior](#)

Preventive maintenance schedule

The Drystar 5302 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?	Page
Ad hoc	<i>'Cleaning the exterior'</i>	<i>173</i>
When image quality tends to degrade. An appropriate warning message is displayed.	<i>'Cleaning the print head'</i>	<i>118</i>

Safety guidelines



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 5302 and disconnect the power cord from the outlet before carrying out any maintenance work inside the printer.



Film jam removal or cleaning the printer head can be done without switching the power off. Nevertheless, care should be taken and the 'Safety precautions' on page 11 should be respected.

Cleaning the exterior

- 1 Switch off the Drystar 5302 by following the procedure as described in *'Switching off the Drystar 5302'* on page 34.
- 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 5302'* on page 32.

Troubleshooting

This chapter serves as a guide to identify and solve possible problems you may encounter.

- [Troubleshooting checklist](#)
- [The Drystar 5302 does not print](#)
- [Clearing of film jams](#)
- [Film identification problems](#)
- [Start-up errors](#)
- [Maintaining image quality and resolving image quality problems](#)
- [Warning messages](#)
- [Maintenance messages](#)

Troubleshooting checklist

The table below lists some general problems, which can occur when working with the Drystar 5302.

- The Drystar 5302 does not print.

Action	Refer to	Page
Check the Drystar 5302	<i>'Checking the status indicator LED'</i>	177
	<i>'Checking the connections'</i>	178
	<i>'Checking the print queue'</i>	180
Remove a jammed film	<i>'Film input tray jams'</i>	182
	<i>'Film transport jams (clearing from the top)'</i>	185
	<i>'Unauthorized opening of the printer'</i>	187
Resolve error messages	<i>'Checking error messages'</i>	179
Handle CF-card errors	<i>'Checking CF-card error messages'</i>	179
Resolve film identification problems	<i>'No identification code detected'</i>	188

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

Action	Refer to	Page
Resolve film quality problems	<i>'Persistent white dots or lines appear in the transport direction'</i>	196
Resolve warning messages	<i>'Warning messages'</i>	197
Resolve maintenance messages	<i>'Maintenance messages'</i>	198



Have electrical or mechanical defects repaired by skilled personnel only!

Checking the status indicator LED

The LED on the front panel indicates the Drystar 5302 operating status. Use the following table to determine the status of your printer.

Colour	Light	Status	Receive jobs?	Printing OK?	Action
Green	Constant	Ready (stand-by)	Yes	Yes	Proceed.
	Blinking	Start-up sequence	No	No	Wait.
		Receiving jobs	Yes	Yes	
		Calculating	Yes	Yes	
		Printing	Yes	Yes	
		Calibrating	Yes	No	
		Installation	No	No	
Key-operator	Yes	No	Proceed with the activity.		
Red	Blinking	Service mode	No	No	
		Input tray empty	Yes	Yes/No	Refer to <i>'Loading films'</i> on page 44.
		Film jam	Yes	No	Refer to <i>'Clearing of film jams'</i> on page 181.
		Warning	Yes	Yes	Refer to <i>'Warning messages'</i> on page 197.
	Constant	Error status	No	No	Refer to <i>'Checking error messages'</i> on page 179.

The Drystar 5302 does not print

Reset of the printer

The Power/Reset button restarts the printer after a software failure or an error. Refer to '[Switching off the Drystar 5302](#)' on page 34.

Checking the connections



Regularly check all electrical connections. When interference occurs with other devices, consult your local service organization.

If you are unable to get the printer to respond, the problem may be caused by a fault in the connections. In this case, check that all connectors and cables are firmly attached to the printer.



Call your local service organization in case cables are disconnected. The user is not allowed to add or remove any connectors.

Checking error messages

If the Drystar 5302 is not printing your job, you should check the front panel display to see if the Drystar 5302 is indicating an error status.

The operator is notified of the situation by means of an error screen and a beep.

- If the Drystar 5302 can identify a module as the source of the error, the following message will be displayed (example):

```
ERROR in MODULE:
Code: MOD
PLEASE REPLACE
MODULE
```

- If the Drystar 5302 cannot identify the source of the error, the following message will be displayed (example):

```
NEW ERROR: E12345
<explanatory text>
```

- 1 Acknowledge the new error condition.
- 2 Contact your local service organization.

Checking CF-card error messages

If the Drystar 5302 is not printing your job, you should check the front panel display to see if the Drystar 5302 is indicating an error status.

A CF-card error can occur when the inserted CF-card is full, write protected or unreadable.

- 1 Correct the error following the error message on the screen:

```
Compact Flash error Blinking
xxx explanatory text
xxxxxxxxxxxxxxxxxxxxxxxx
```

After you have corrected the action the screen will disappear.

Checking the print queue

If no error message is displayed, you should check the print queue:

```
Mod.name 09:09:40 PR  
          film10 of20  
          [ ] 0%  
(X)Uperator menu
```

The status can be:

- printing (PR),
- calculating (CA).

A warning status, indicated by a blinking “W” in the upper right corner of the display, indicates that there is a problem that should be attended to.

Refer to *Maintenance messages*’ on page 198.

Clearing of film jams

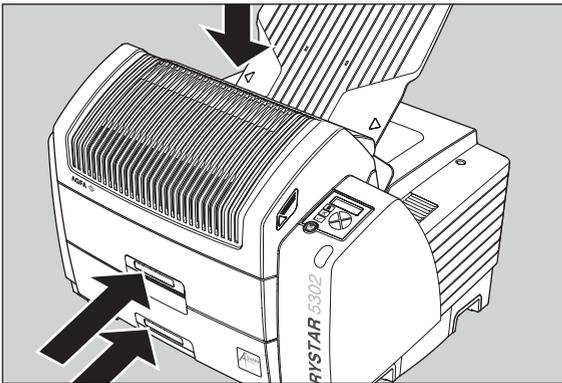
A film jam can be situated either:

- In the input tray section. Refer to *'Film input tray jams'* on page 182.
- In the top section. Refer to *'Film transport jams (clearing from the top)'* on page 185.

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 187.
- Loading films incorrectly. Refer to *'Film identification problems'* on page 188.

Overview of sections:



Film transport jams
(clearing from the
top section)

Film feed jams (clearing
from the input tray)



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 5302 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 188.

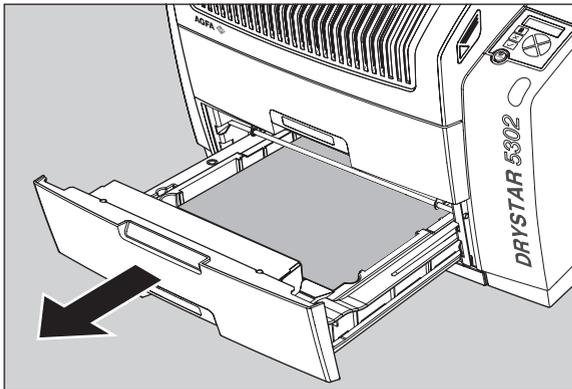
The following screen indicates that a jam occurred in the input tray.

```

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.

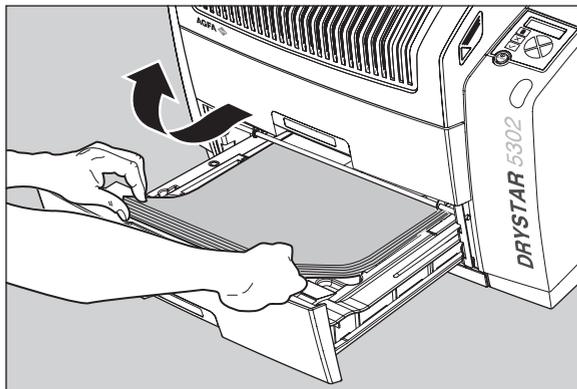


If a film is jammed, gently remove the sheet. Reposition the film stack in the film tray, making sure that all the sheets are kept correctly (refer to *'Loading films'* on page 44).

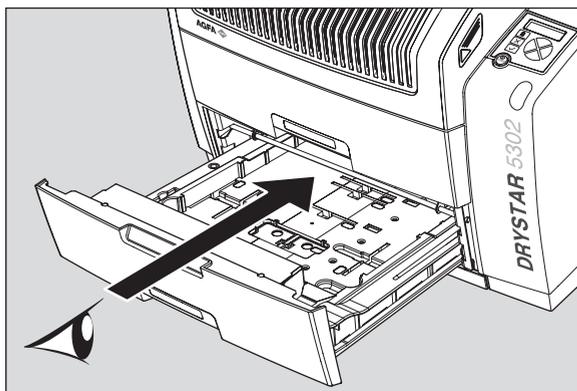


Never use force to clear the jammed film. If it is not possible to gently remove the jammed film, call your local service organization.

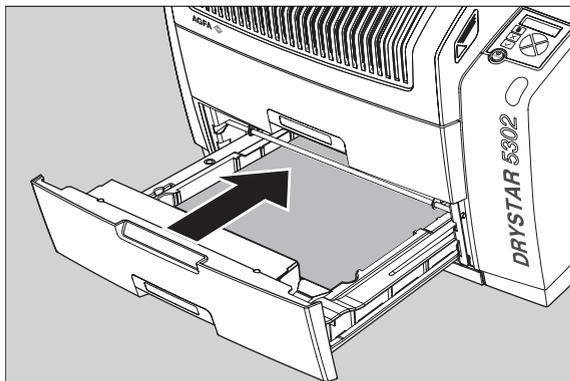
- 2 To get a clear view, it may be necessary to remove any remaining film sheets, including the protective (white) sheet.



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



- 4 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 44).
- 5 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.

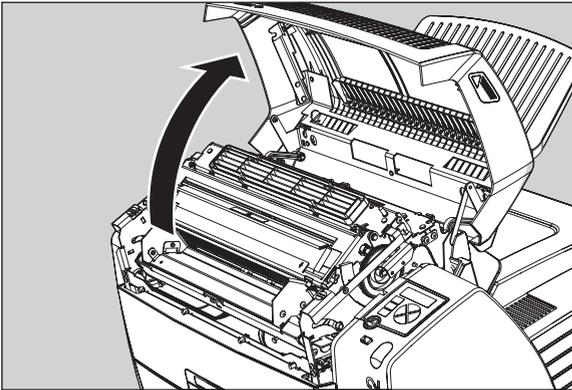


To remove a jammed film in the transport system:

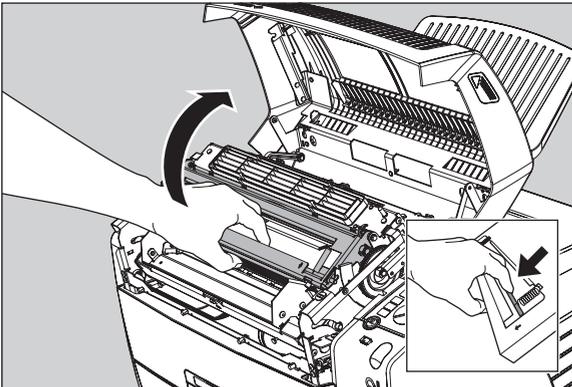


Please note that instructions for removing a film jam in the transport section are present on a sticker at the inside of the top cover.

- 1 Open the top cover.



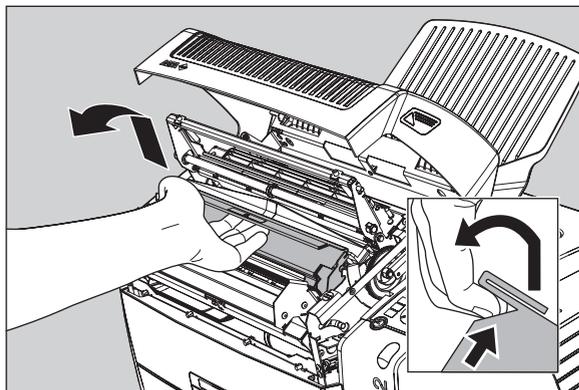
- 2 Open the hold-down bracket.



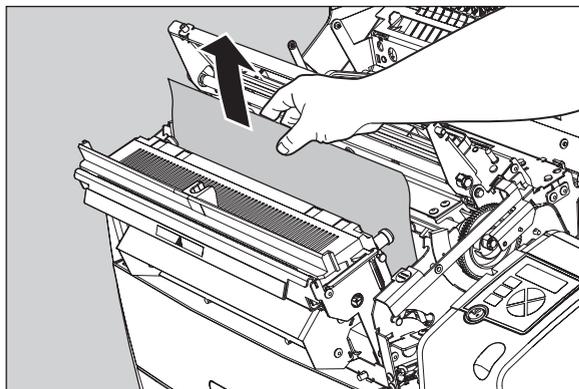
3 Open the print head unit.



The print head unit can be warm.



4 Gently remove the film sheet(s).



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.



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.



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



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
openings 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 181.
- 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 5302](#)' on page 34.
Refer to '[Loading films](#)' on page 44.

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](#)
- [Invalid content of Film Identification tag](#)
- [Film overrun from current pack](#)

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 5302 does not start printing after re-inserting a film pack, first check if this film pack is inserted correctly.

If the Drystar 5302 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 5302 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.



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

- 1 In case the Drystar 5302 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 5302 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 5302 will perform the check sequence.

3 Press the Confirm button.

- If the “Override 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 “Override 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.
  
```



In this case, press the Confirm key to initiate the loading procedure again or call your local service organization to enable the “Override 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.

Start-up errors

Error messages during the printer start-up

The table below lists the possible error messages, which can appear on the display of the control panel while the printer starts up.

Error message	Cause of error
ERROR display failure (Firmware)	<i>'Display self test failed'</i>
ERROR system failure	<i>'System self test failed'</i>
ERROR self test failure (Firmware)	<i>'Software self test failed'</i>



Contact your local service organization in case the self-test fails.



Error messages can also appear when the printer has already started up. Refer to *'Checking error messages'* on page 179.

After starting up the Drystar 5302, the printer performs a self-test. A progress indicator will show the proceeding of this self-test. During the self-test, a number of messages can appear, meaning that the self-test has failed.

Display self test failed

In case the display self test failed, following message appears:

```
ERROR
Display failure: xx
```

The code 'xx' can help the Service engineer with the troubleshooting process.

System self test failed

In case the system self test failed, following message appears:

```
ERROR
System failure
```

Software self test failed

In case the software selftest has failed, following message appears:

```
ERROR
self test failure
```

Maintaining image quality and resolving image quality problems

In general, when you observe the procedures *'Maintaining image quality and resolving image quality problems'* on page 194 and *'Quality Control'* on page 124, you should rarely encounter quality problems.

However, should any problems occur, the paragraph *'Persistent white dots or lines appear in the transport direction'* on page 196 provides some specific remedies.

Maintaining optimal image quality

Calibration is necessary to maintain optimal image quality. This is required in the following situations:

- Before initial use of a film,
- After a certain number of copies have been printed,
- After the replacement of a thermal head,
- When loading new films into the input tray.

Overview of calibration functions

Two calibration functions are provided for the Drystar 5302.

Calibration	Purpose	When?
<i>'Film calibration'</i>	<ul style="list-style-type: none"> • To measure and set the system density of the printer. • To measure and set the film sensitometry values. 	<ul style="list-style-type: none"> • Automatically after printing "x" film packs. • After an explicit action of the operator.
<i>'Cleaning the print head'</i>	To reduce irregularities on the film.	When image quality problems occur.



Before performing a calibration, read the general guidelines as described in *'Understanding the calibration policy'* on page 195.

Understanding the calibration policy

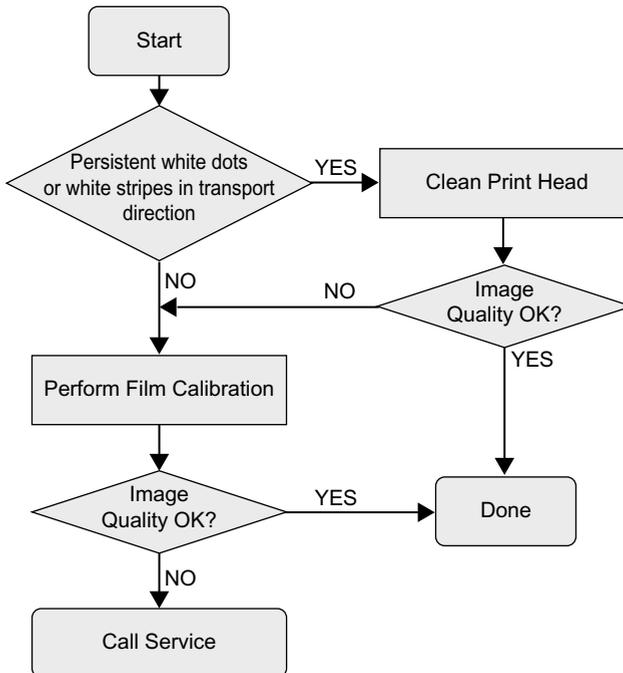
You should regularly perform a film calibration to assure an optimal image quality.

Film calibration can be initiated in 2 ways:

- Automatically, i.e. after printing every 'x' new film packs (frequency is adjustable),
- Manually, i.e. you decide for yourself when to perform a film calibration, e.g. daily, once a week or only when the image quality tends to degrade.

For setting automatic or manual film calibration, refer to '[Changing general image quality settings - Film calibration](#)' on page 89.

The following flow chart will assist you in determining the correct operation in order to maintain an optimal image quality from your printer:



Persistent white dots or lines appear in the transport direction

If fine white dots and one or more fine white lines appear in the transport direction (mostly due to dust infiltration), try the following remedies:

- 1 Clean the print head resistor line.
Refer to *'Cleaning the print head'* on page 118.
- 2 Print a few test sheets using the 'Print test image' function.
Refer to *'Printing test images'* on page 99.

If the white lines are still visible, contact your local service organization.

Warning messages

This section will inform you what to do when warning messages appear. A warning message is displayed when an event has occurred that might decrease image quality. Printing still remains possible.

The Warning screen is displayed while an audible signal is produced:

```
NEW WARNING: W12345 Blinking
<explanatory text>
```

- 1 Press the Confirm key to acknowledge the new warning condition.

As long as the warning condition has not been resolved, the other Drystar 5302 screens (except the Key-operator screens) will show a 'W' character blinking in the upper right corner (e.g. the Operator menu screen):

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

- 2 Contact your local service organization.

Maintenance messages

This section will inform you what to do when maintenance messages appear. A maintenance message is displayed whenever a maintenance action is due. Printing still remains possible.

The Maintenance screen is displayed:

```
MAINTENANCE ACTION: Blinking + beeping
Code: M12345
<explanatory text>
```

- 1 Press the Confirm key to acknowledge the new maintenance condition.

As long as the maintenance action has not been executed, the other Drystar 5302 screens (except the Key-operator screens) will show a 'M' character blinking in the upper right corner (e.g. the Operator menu screen):

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

The table below gives an overview of the maintenance messages that requires maintenance action.

M-code	Maintenance message	Action to perform
3	Replace anti-dust filter	Call service
4	Replace pick-up rollers	Call service
5	Film calibration	See <i>Film calibration</i> on page 115.

For more information, contact your local service organization.

Appendix

A

Equipment information sheet

Specifications

Product description	
Type of product	Printer
Commercial name	Drystar 5302
Original seller/manufacturer	Agfa-Gevaert N.V.
Labelling	
TÜV-, cULus-Certification Mark, CE-marking	
CCC Mark	
Dimensions	
Dimensions (approx. values in cm)	<ul style="list-style-type: none"> • Unpacked: width 72.8, length 71.5, height 67.6 • Packed: width 89, length 100, height 80
Weight	<ul style="list-style-type: none"> • 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

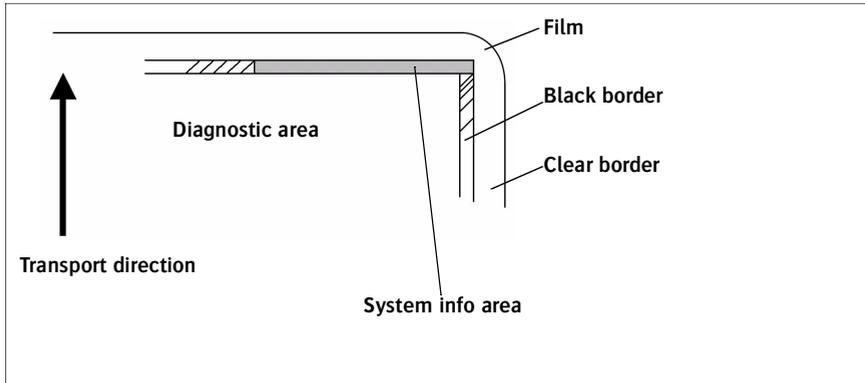
Network connectivity	
Ethernet / connectors	RJ45 twisted pair for 10/100Base-TX; Serial RS232 connection
Network protocols (TCP/IP services)	FTP, Telnet, HTTP
Image formats	DICOM (Default) TIFF
Postscript	Not available
Power consumption - heat dissipation	
During operation	250 W - 900 kJ/h
In stand-by	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% <u>Note:</u> Films may not become wet!
Atmospheric pressure	70 kPa - 106 kPa
Environmental storage conditions	
	<i>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/m ³ and 35 g/m ³
Rate of change of temperature	1°C/min
Atmospheric pressure	70 kPa - 106 kPa

Environmental transport conditions	
	<i>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
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				
8x10"	8" dimensions		10" dimensions	
	pixels	mm	pixels	mm
	2376	188.65	3070	243.76
10x12"	10" dimensions		12" dimensions	
	pixels	mm	pixels	mm
	3070	243.76	3653	290.05
11x14"	11" dimensions		14" dimensions	
	pixels	mm	pixels	mm
	3348	265.83	4358	346.03
14x14"	14" dimensions		14" dimensions	
	pixels	mm	pixels	mm
	4358	346.03	4303	341.66
14x17"	14" dimensions		17" dimensions	
	pixels	mm	pixels	mm
	4358	346.03	5232	415.42

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 5302 Service documentation.

Options and accessories

Mobile / Earthquake provisions

Not available.

Connectivity

Connectivity with Agfa equipment

- Connected via VIPS or CR QS
 - ADC Compact
 - ADC Compact Plus
 - ADC Solo
 - CR 25.0
 - CR 75.0
- ADR Thorax
- Impax
- MG3000
- Paxport
- MULTIFLEX

For more information, contact your Agfa representative.

Connectivity with non-Agfa equipment

Drystar 5302 is a Dicom printer and can therefore be connected to all modalities supporting Dicom. Although, to ensure optimal operation and image quality, Agfa has made the effort to test and release the Drystar 5302 with most of modalities on the market. For the complete list or if you want to check on a specific modality, contact your Agfa representative.

Drystar media density response data

Drystar DT 2B

dens.	MacBeth TR-924	Gretag D200-2	X-rite 301	X-rite 310	X-rite 331	X-rite 341
0%	0.22	0.16	0.18	0.23	0.19	0.19
10%	0.5	0.45	0.47	0.52	0.48	0.48
20%	0.78	0.73	0.75	0.80	0.76	0.76
30%	1.06	1.02	1.03	1.09	1.05	1.04
40%	1.35	1.30	1.31	1.38	1.33	1.33
50%	1.63	1.59	1.59	1.67	1.61	1.61
60%	1.90	1.86	1.86	1.95	1.89	1.89
70%	2.18	2.15	2.15	2.24	2.18	2.18
80%	2.47	2.44	2.43	2.53	2.47	2.47
90%	2.64	2.73	2.71	2.81	2.74	2.74
100%	3.03	3.03	2.99	3.10	3.03	3.04

Drystar DT 2C

dens.	MacBeth TR-924	Gretag D200-2	X-rite 301	X-rite 310	X-rite 331	X-rite 341
0%	0.10	0.08	0.07	0.09	0.08	0.07
10%	0.38	0.37	0.36	0.38	0.38	0.38
20%	0.65	0.64	0.64	0.66	0.65	0.65
30%	0.94	0.93	0.92	0.95	0.93	0.93
40%	1.21	1.20	1.19	1.23	1.21	1.21
50%	1.50	1.49	1.48	1.52	1.50	1.49
60%	1.77	1.77	1.76	1.81	1.79	1.77
70%	2.05	2.05	2.03	2.09	2.06	2.05
80%	2.34	2.34	2.31	2.38	2.35	2.34
90%	2.61	2.62	2.58	2.66	2.63	2.62
100%	2.90	2.92	2.86	2.95	2.92	2.92

Appendix

C

Quality Control Charts

Drystar 5302: Determination of Operating Levels

Imager Type: _____ Serial #: _____ Date _____
 Film Type: _____ Emulsion #: _____
 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')

Chart 2A

Drystar 5302 Daily Density Control Chart

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

Densitometer: _____ (default selection)

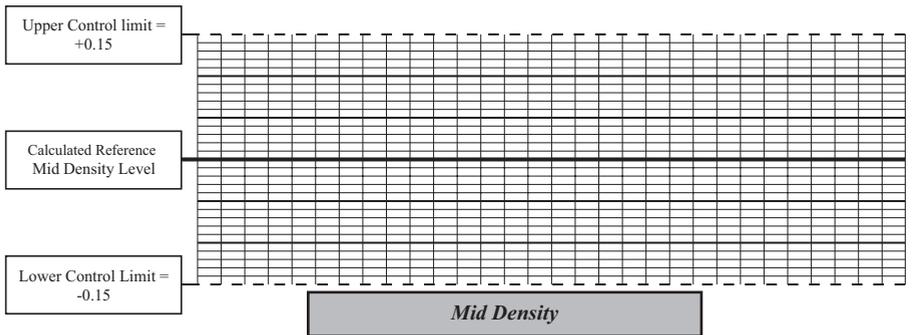
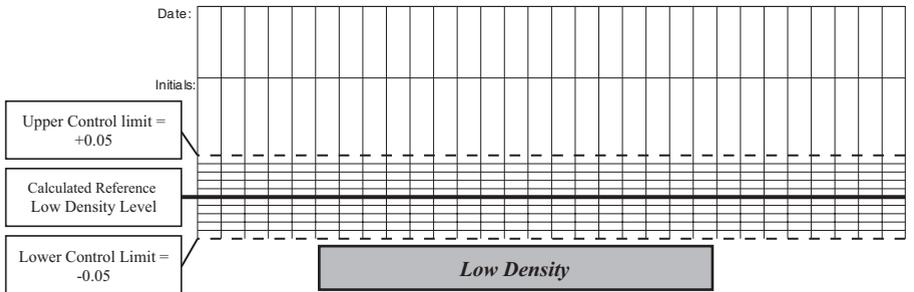


Chart 2B

Drystar 5302 Daily Density Control Chart

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

Densitometer: _____ (default selection)

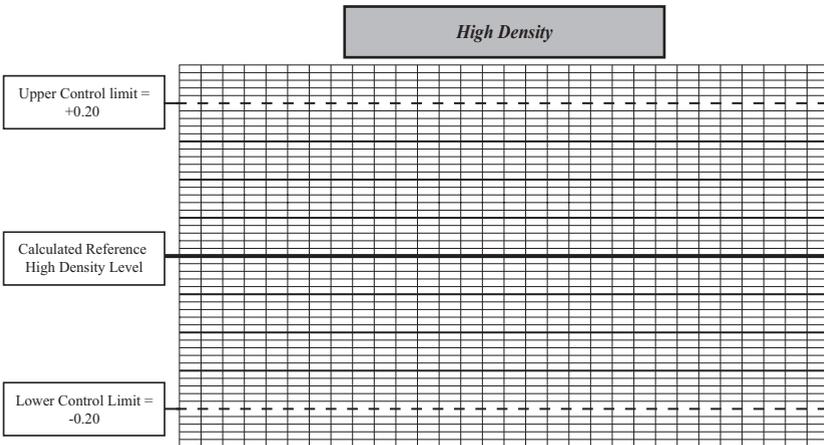


Chart 3

Drystar 5302 Artifacts and Spatial Resolution Control Chart

Test Frequency: Weekly Drystar 5302 Serial # _____

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						

Drystar 5302 Geometric Consistency Control Chart

Test Frequency: Annually or as required

Drystar 5302 Serial # _____

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}			

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Printed in Belgium

Published by Agfa-Gevaert N.V., B-2640 Mortsel-Belgium

2830A EN 20050526

