

QUANTUM 2

User Guide

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INTRODUCTION

Copyrights and trademarks

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Users must observe the copyright regulations applicable in their country. This document must not be photocopied, translated, reproduced or transmitted, in whole or in part, for any reason and by any electronic or mechanical means whatsoever without the express written consent of Evolis.

All the information contained in this document is subject to change without prior notice.

Evolis cannot be held liable for any errors that may be found in this manual, or for any loss or damage arising accidentally or as a result of dissemination or use of this manual.

All Evolis printer models, The Printer Driver and Evolis High Trust® are trademarks of Evolis. All other trademarks belong to their respective holders.

Warranty

Refer to the warranty booklet available on **www.evolis.com > Support section > Product page** to know the warranty terms, conditions and limitations.

Register your product on **www.evolis.com > Support section**.

Read this manual carefully and follow the instructions.

Comply with the instructions given in this manual to ensure a good functioning of the printer.

The manufacturer's warranty is subject to a strict compliance with cleaning and maintenance instructions, and in particular the printer cleaning cycles. Any failure to follow the maintenance and cleaning procedures voids the print head warranty.

Environmental information and end of life product

Evolis is committed to helping the environment by reducing the energy consumption of its products.

The manufacture of this product required the extraction and use of natural resources. It may contain materials that are hazardous to health and the environment. To prevent the dispersal of such materials, use existing collection systems.

For more information on collection, re-use and recycling systems, contact your local or regional waste management body.

A tutorial is available on **www.evolis.com > Support section > Product page** to take ribbons apart and facilitate recycling.

Symbols

Symbols used in this document

Video(s) of the procedure(s) available on **Evolis YouTube channel**.

Indicates that failing to take the recommended action is liable to damage the printer.

Information providing further details or depth about specific points in the main text.

Icons on the printer label or in the printer:



Evaluation for apparatus only based on altitude not exceeding 2000m, therefore it's the only operating condition applied for the equipment.
There may be some potential safety hazard if the equipment is used at altitude above 2000m.



Evaluation for apparatus only based on temperate climate condition, therefore it's the only operating condition applied for the equipment.
There may be some potential safety hazard if the equipment is used in tropical climate region.



Reminder to use existing collection facilities.

Product information

This product uses consumables and accessories available on **www.evolis.com > CONSUMABLES**.
For more information on the technical specifications of the product and all options available, go to **www.evolis.com** > **Product page**.

Certifications and declaration of conformity

The complete declaration of conformity is available on **www.evolis.com > Support section > Product page**.

- CE, CCC, VCCI, ICES, BIS, EAC, RoHS
- FCC (Evolis contact: Evolis, Rising Sun Mills, 188 Valley St., Suite 421, RI 02909 Providence, evolisnortham@evolis.com)

FCC additional information :

The company Evolis is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference's by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



This device must be professionally installed.

This equipment complies with FCC's radiation exposure limits set forth for an uncontrolled environment under the following conditions :

1. This equipment should be installed and operated such that a minimum separation distance of 20cm is maintained between the radiator (antenna) and user's/nearby person's body at all times.
2. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

ICES additional information :

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS (s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with RSS102's radiation exposure limits set forth for an uncontrolled environment under the following conditions:

1. This equipment should be installed and operated such that a minimum separation distance of 20cm is maintained between the radiator (antenna) and user's/nearby person's body at all times.
2. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Dimensions and weight

- Without hoppers: 215 x 300 x 850 mm (8.46" x 11.81" x 33.46")
- With hoppers: 567 x 300 x 850 mm (22.32" x 11.81" x 33.46")
- 21,7 kg (47.8 lbs)

Connectivity

- USB (1.0, 1.1, 2.0, 3.0)
- Ethernet TCP-IP, 10BaseT, 100BAseT (Traffic Led)

Environment conditions

- Min / Max operating temperature: 15° / 30° C (59° / 86° F)
- Humidity: 20% to 65% non-condensing
- Min / Max storage temparature: -5° / +70° C (23° / 158° F)
- Storage humidity: 20% to 70% non-condensing
- Operating ventilation: free air

Electrical information

- Power supply: 100-240 Volts AC, 50-60 Hz, 2 A
- Printer: 24 Volts DC, 6.25 A

PRODUCT PRESENTATION

Unpacking

When receiving the printer, print a technical test card to make sure that the printer operates properly.

The printer is shipped in a packaging designed to prevent damage in transit. If visible damage is noticed when unpacking the product, contact the shipper and immediately inform your reseller, to know the procedure to follow.

The full original packaging (outer box, inner wedges and protective bags) is required in the event that the printer is returned. Keep the packaging somewhere clean and dry. If the printer is returned without its original packaging and components are damaged during transit, these components are no longer covered by the warranty. You will be charged for new packaging for shipping the printer back to you.

If any of the accessories is missing, contact your reseller.

Use only the power supply unit and USB cable supplied with the product.

The printer must be placed in a dry location, protected from dust and drafts but well-ventilated.

Make sure to keep the printer on a flat surface able to bear its weight.

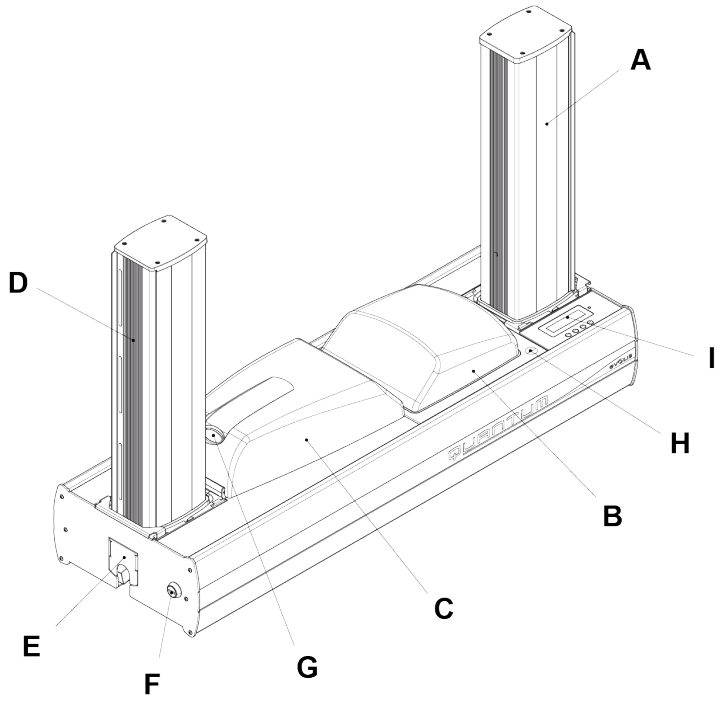
A step by step tutorial to install the product is available on **www.evolis.com > Support section > Product page (Install my product)**.

Accessories supplied with your printer:

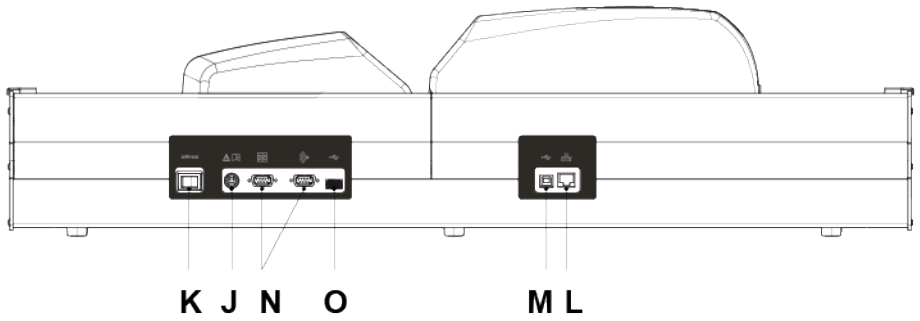
- Power supply unit - VP ELECTRONIQUE Type PAC150M or PROTEK POWER Type PUP150N-14
- Mains power cable.
- USB interface cable.
- Installation and documentation CD-ROM.
- Starter cleaning kit.
- Quick installation guide.
- Warranty notice.
- Compliance statement documentation.

- Quick installation guide with a URL to download the printer driver
- Presentation leaflet for cardPressoID-ALL card designing software

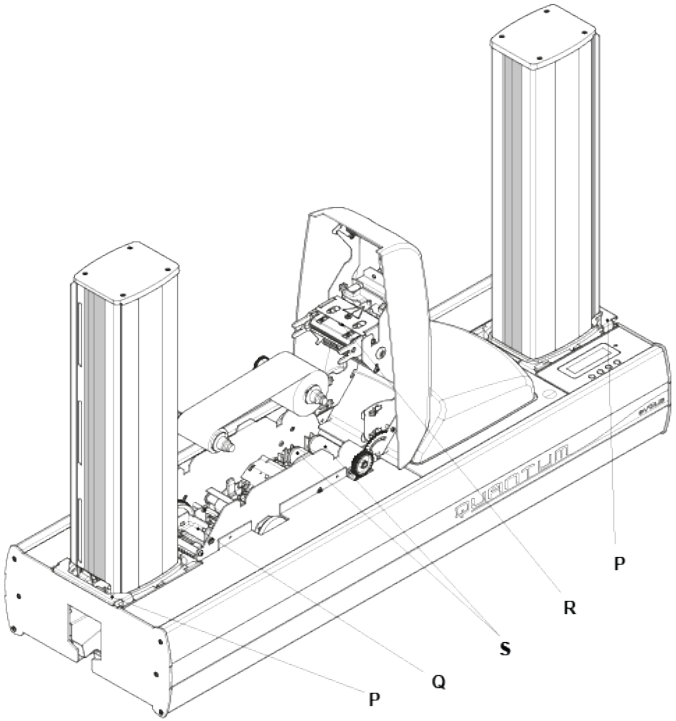
Product Description



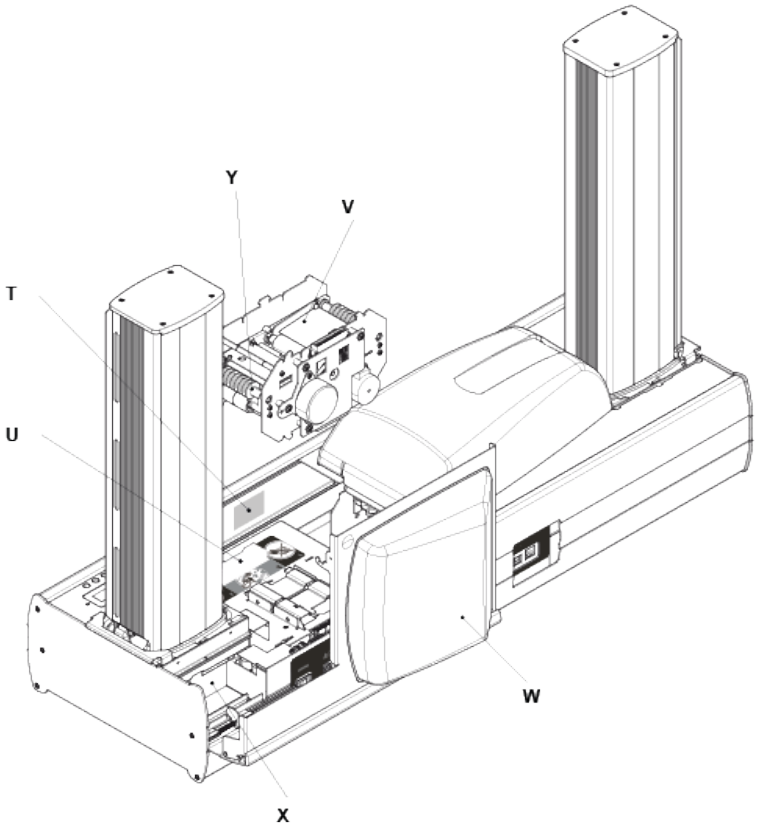
A. Card input feeder
B. Encoding module
C. Printing module
D. Output stack
E. Reject hopper (20 x 0.76 mm or 30 mil cards)
F. Centralize locking (option)
G. Cover opening button (printing module)
H. Cover opening button (encoding module)
I. LCD control panel



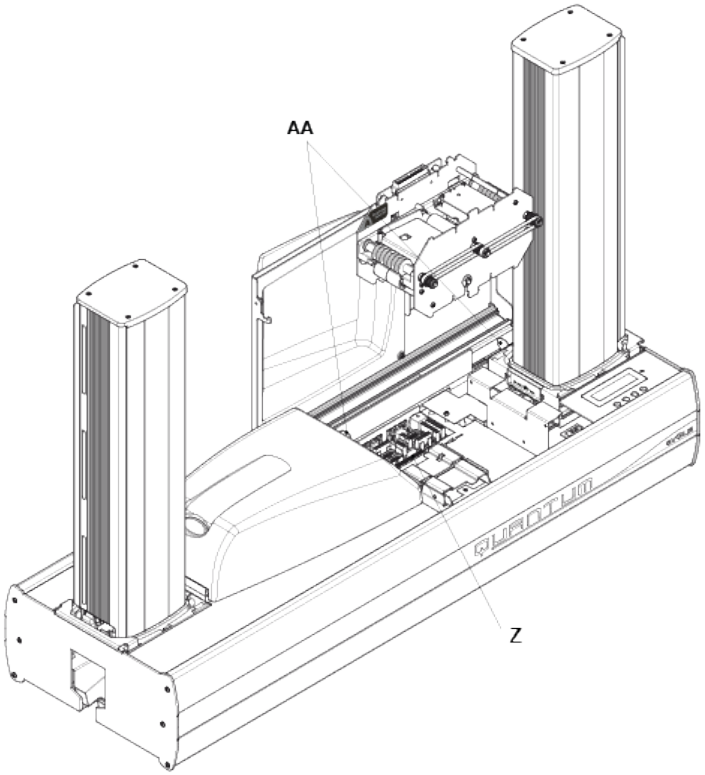
J. Power cable socket
K. On-off switch
L. Ethernet socket
M. Computer USB socket
N. DB9 connectors
O. Peripheral USB socket



P. Card input feeder and output stack release buttons
Q. Card turnover area
R. Thermal print head
S. Cleaning rollers



T. Serial number label
U. Reversible module release button
V. Reversible encoding module
W. Removable cover
X. Encoder fixing support
Y. Antenna fixing support



Z. Encoder connection zone
AA. Cover release button

INSTALLATION

Install the equipment on a flat surface able to bear its weight.
Install the printer where the airflow is not obstructed to ensure the proper function of the fans and cooling of the printer.

Video(s) of the procedure(s) available on **Evolis YouTube channel**.

Connecting the printer power supply

The printer must be connected to a properly protected and earthed electrical installation.

- FI: Laite on liitettävä suojamaadoitus koskettimilla varustettuun pistorasiaan.
- NO: Apparatet må tilkoples jordet stikkontakt.
- SE: Apparaten skall anslutas till jordat uttag.
- DK: Printeren skal tilsluttes til en korrekt beskyttet og jordforbundet el-installtion.

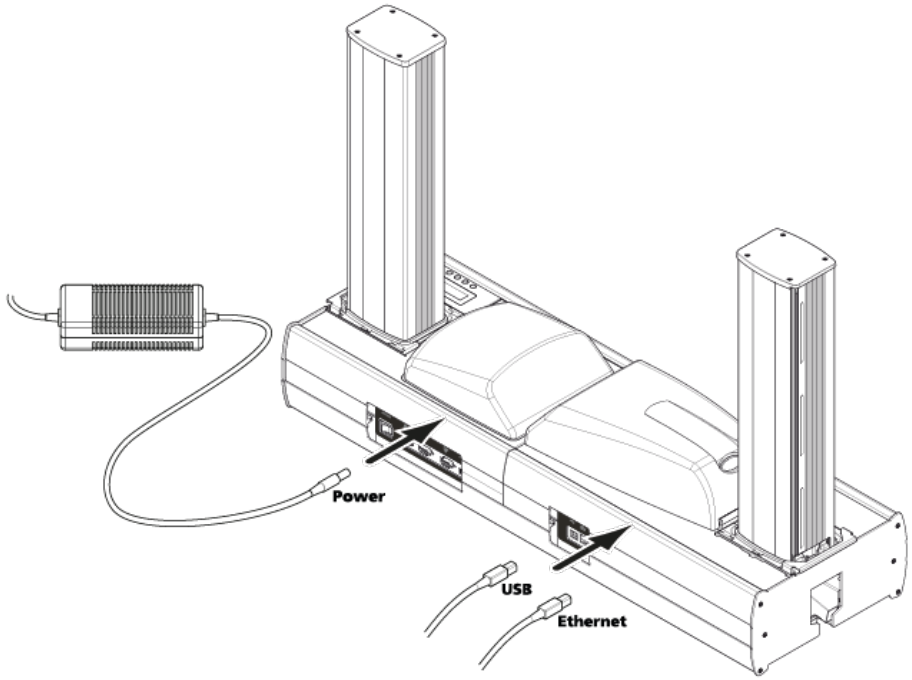
Before attempting any maintenance, always ensure that the power switch is in the OFF position and that the power cable is unplugged.
For your personal safety, ensure that both remain easy to access, especially in the event of an emergency.
Under no circumstances should you connect the USB data cable before installation of the printer driver is complete.

1. Connect the power cable to the power supply unit.
2. Plug the power supply unit connector into the printer.
3. Plug the end of the power cable into an earthed power socket.
4. Power up the printer by switching the switch to ON.
5. The display on the control panel lights up and the message:
   _ INITIALISATION _ is displayed.

Once the start-up sequence has finished, the screen displays:

_ READY _ and the LED is a steady green light.

Should this not be the case, the installation has not been carried out correctly. Check the installation.



Connecting to a network (option)

Contact your System and Network Administrator before connecting to or changing the settings for your local area network.

Changing the printer's basic settings without prior knowledge of the layout of the LAN in question or without genuine technical knowledge may result in a malfunction of the printer, and may even extend to more widespread failure of all or part of the LAN.

For further details, contact your reseller to obtain the Network Installation Guide.

Evolis printers fitted with a TCP/IP network interface have an embedded http server.

The printer is, by default, configured in DHCP mode (Dynamic Host Configuration Protocol), which means that its IP address is supplied by the network.

Evolis printers can be fitted with a TCP/IP network connection.

The network administrator can configure the printer in order to comply with the constraints imposed by the corporate LAN:

- Printer connected in a subnet, in DHCP
- Printer connected in a subnet with fixed IP address, and WINS resolution
- Printer connected in a subnet with fixed IP address, and no WINS resolution

The printer may be identified on the network in two ways:

- By its Hostname (NETBIOS)
- By its IP address

The Network connection wizard automatically detects all the Evolis printers installed.

The following settings can be configured:

- Printer IP address
- Subnet mask
- Gateway
- WINS server

Installing ID-ALL

Quantum 2 is supplied with a Starter ID-ALL license. This edition can be upgraded to other editions to benefit from more features. For more information about the other editions, see **www.evolis.com > Product page**.

Evolis printers can also be used from different applications with a Print feature to print content. Set the document size to **CR80 (85.6x53.98mm with 1mm margin)** when required and select the printer name before launching a print job.

For more information about the use of ID-ALL, see **cardPresso Help Center** or go to **Help > Help guide / Technotes** in ID-ALL.
If any issue occurs, see the **ID-ALL articles on the Evolis Knowledge Base** or **cardPresso Help Center**.

Thanks to the cardPresso server, the license supplied with the printer is activated through the detection of the printer's serial number.
The computer must be connected to Internet for the license to be activated and detected.
Make sure that the USB cable of the printer is connected to the computer before installing the card design software.

1. Go to **www.cardpresso.com > Solutions > ID-ALL > Latest versions** to download the latest version of the installation file for ID-ALL (.exe for Windows and .pkg for macOS).
2. Double click on the downloaded file to launch the installation wizard.
3. Follow the on-screen instructions.
    - Click on **Next** to install ID-ALL.
    - Click on **Evaluate** to open the software without installing it (to test the software for example)
4. Once the software is installed, the **Account and license** window is displayed.
    a. In the **License information** section, select your printer in the drop-down list.
    b. Click on **Activate**.

Installing The Printer Driver

Installation procedure

Make sure the printer is disconnected from the computer before installing The Printer Driver.

All versions of Windows require the user to have administrator rights to install the driver.

When installing The Printer Driver in macOS environment, an adapter may be required. Make sure to connect the adapter to the computer first and then connect the USB cable of the printer for the printer to be detected.

It is possible to select Standard or Minimal installation: **Standard installation** is recommended as it includes notification and supervision features.

In case of a **network installation**, the printer driver must be installed in **Minimal installation**.

1. Download the Driver/Premium Suite file (.exe for Windows and .pkg for macOS) on **www.evolis.com** > **Support section** > **Product page**.
2. Double click on the installation file to launch the installation program and follow the instructions.
3. At the end of the installation, restart the computer, if requested.
4. Connect the printer to the computer with the USB cable.

Ribbon

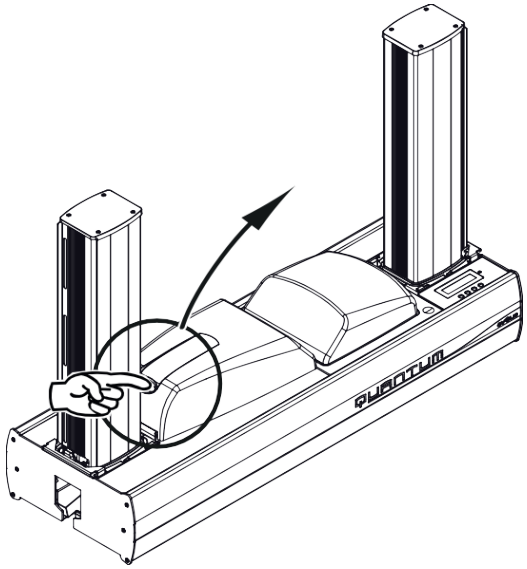
Only use Evolis High Trust® consumables. These consumables bring you printing quality and reliability, maximizing the life span of the print head. The use of consumables other than Evolis High Trust® may lead to a bad printing quality and a dysfunction of the equipment.

See this **Knowledge Base article** to identify an Evolis High Trust® ribbon.

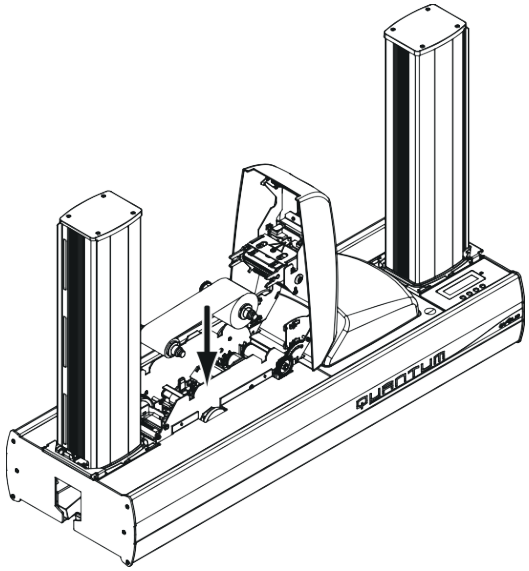
Only use consumables compatible with the equipment. Refer to the **Consumables compatibility chart** and contact your reseller for more information.

A tutorial is available on **www.evolis.com** > **Support section** > **Product page** to take ribbons apart and facilitate recycling.

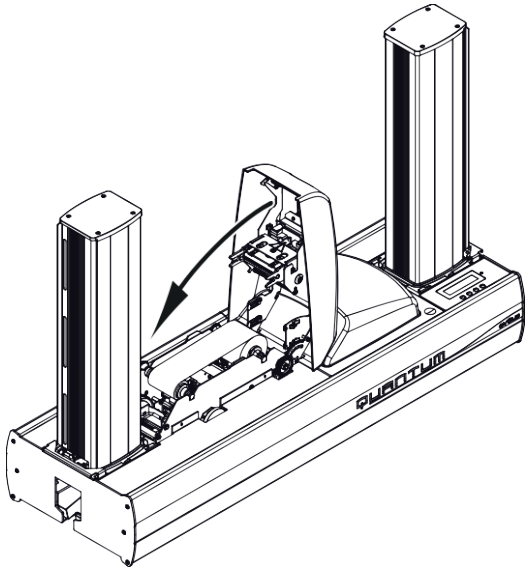
Fitting the Ribbon



1. Open the printing module cover



2. Insert the ribbon as shown



3. Close the cover and press until a click is heard

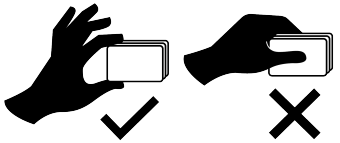
Printer configuration

Once the printer and the printer driver are installed and the printer is connected to the computer, the type of ribbon installed in the printer must be configured in the printer driver.

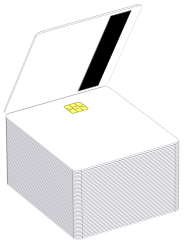
- Open the printer driver and access the printer properties.
- Go to **Graphics tab** > **Ribbon**.
- Select the ribbon type installed in the printer in the drop-down list.
- Click on **OK** to validate the configuration.

Cards

For optimum quality, the cards used must be ISO 7810 certified.
Use only the card types recommended by Evolis.
Do not touch the printable surface of the cards to preserve print quality.
Do not use cards that are damaged, folded, embossed or dropped on the floor.
Keep your cards protected from dust.

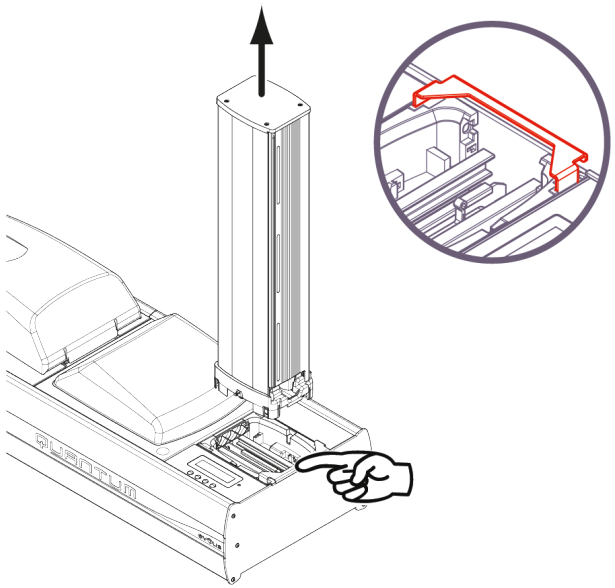


Smartcards used for **magnetic encoding** must be inserted with the **stripe facing down**.
Smartcards used for **contact encoding** must be inserted with the **chip facing upwards**.

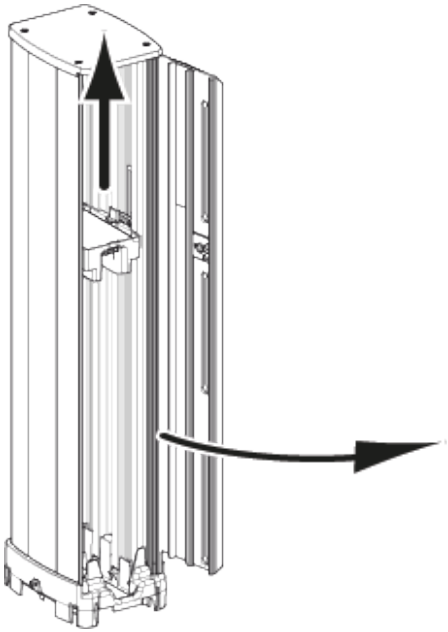


The printer accepts cards between 0.76 mm and 1 mm thick (30 to 40 mil). There is no adjustment to do.

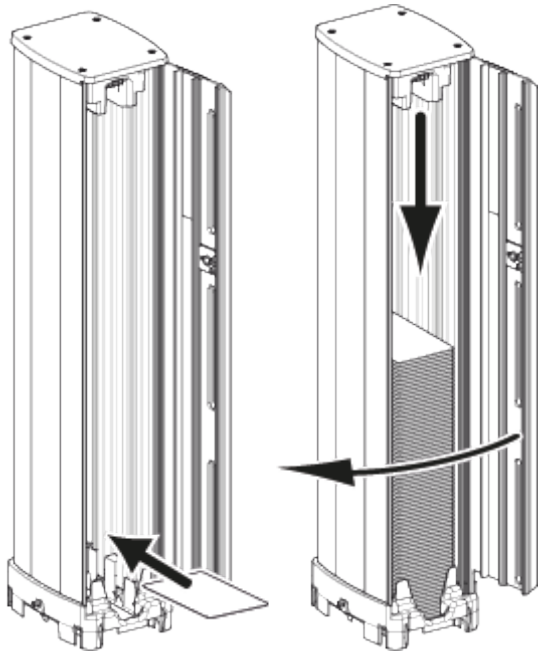
Loading the cards



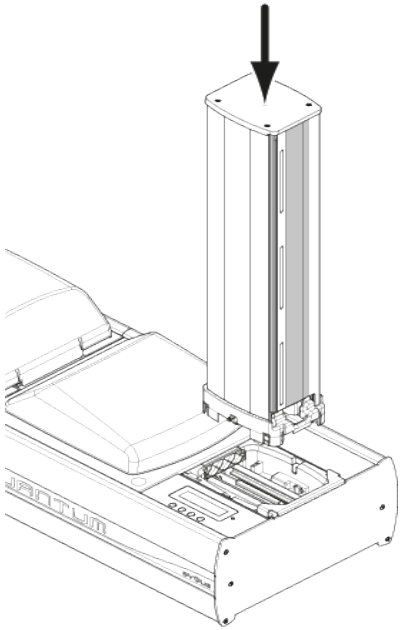
1. Remove the card feeder by pressing the release button.



2. Open the feeder door and lift the weight to feeder height. This will be held by a magnet.



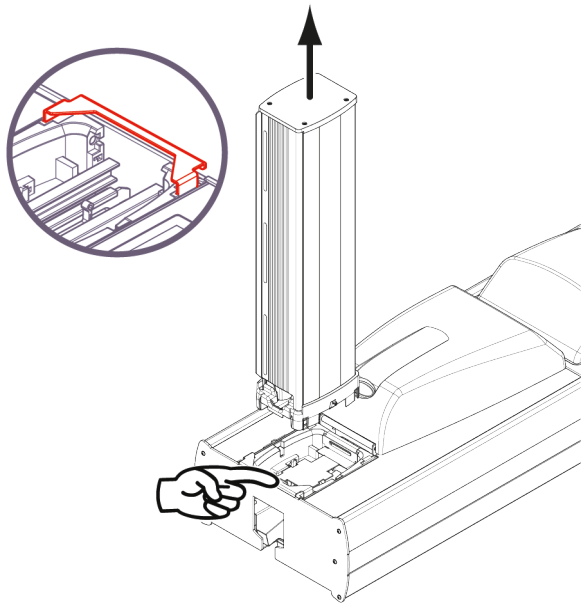
3. Insert the cards. lower the weight. Close the feeder door again.



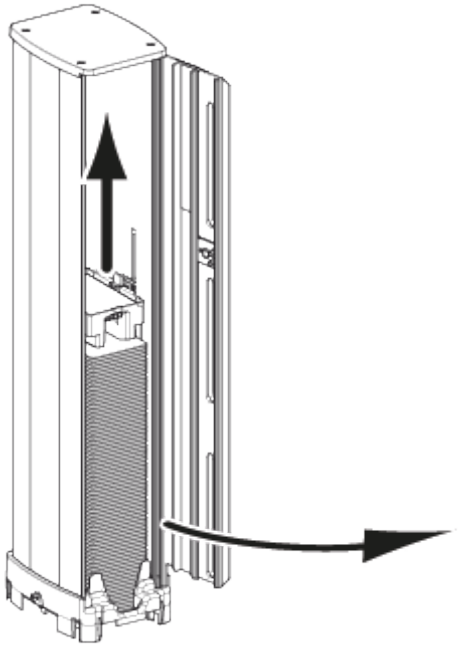
4. Put the feeder back in the printer (door facing the outside).
Click confirms correct insertion.

Removing printed cards

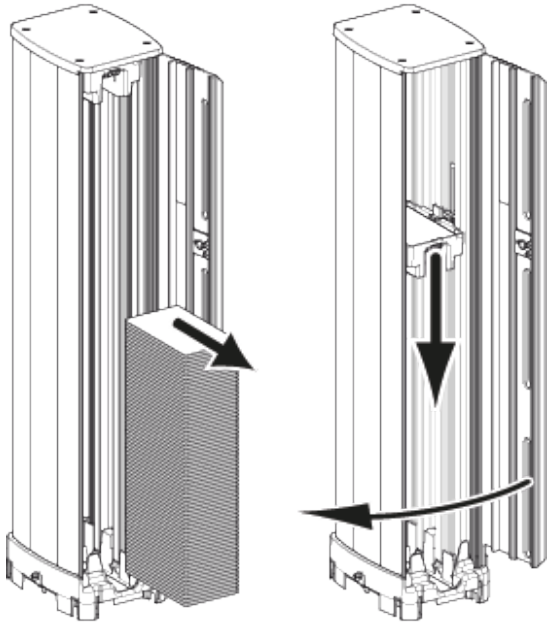
Once the print cycle is complete and / or encoding done, cards are delivered into the output stack found on the left of the device. The output stack has a capacity of 500 cards in 0.76 mm (30 mil).



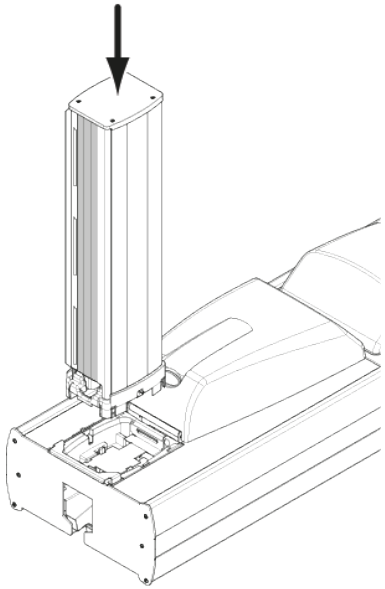
1. Remove the card output stack by pressing the release button.



2. Open the output stack door and lift the weight to output stack height. This will be held by a magnet.



3. Remove the cards, lower the weight.
Close the output stack door again.

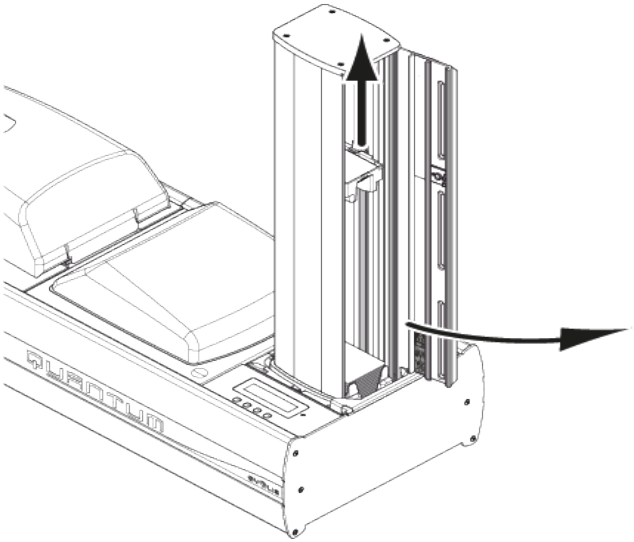


4. Put the output stack back in the printer (door facing the outside).
The click confirms correct insertion.

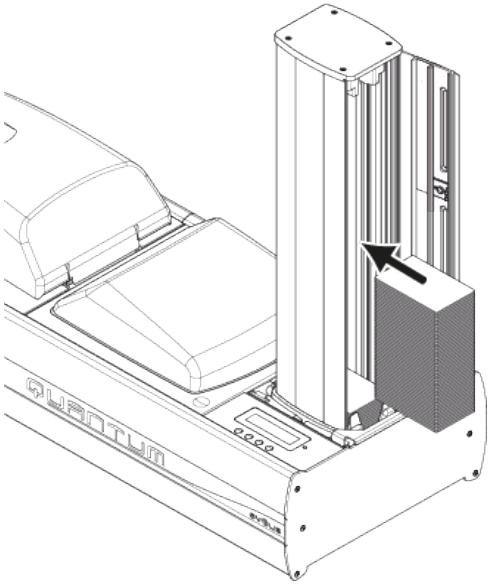
It is possible to eject a printed card into the reject hopper rather than into the output stack. ***"Printer Menu" on page 41***
To eject a card into the reject hopper, press the 2 outside buttons on the control panel simultaneously.
The following message appears: 'Next card ejected into reject hopper'. You then have one minute to start your printing.
If you press the 2 outside buttons on the control panel for longer (4s) and you then release it, you can set the 'Quantity of Cards' to be ejected into the reject hopper: up to 20 cards MAX.

Loading and removing cards, with the printer in operation

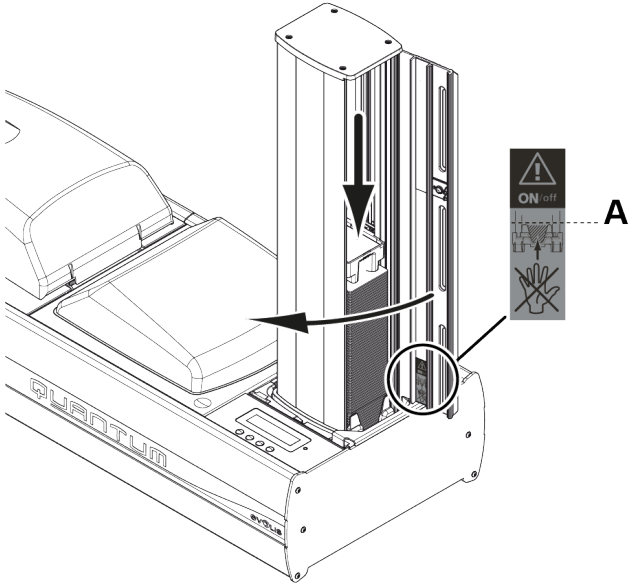
It is possible to reload the cards into the feeder positioned on the standard printer (without central locking), when this is in operation.



1. Open the feeder door.
2. Lift the weight and fix it to the magnet.



3. Insert the cards into the feeder by packet.



4. Lower the weight onto the cards that have been inserted.
5. Close the feeder door.

Similarly, it is possible to remove the personalized cards from the output stack in place in the printer when this is executing a job.

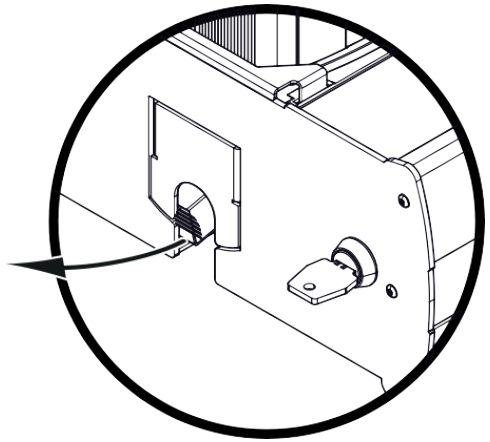
Take care not to insert or remove cards under the level marked A.

Reject hopper management

The printer is equipped with a reject hopper with a capacity of 20 cards.
When the reject hopper is full, the message **REJECT HOPPER FULL** is displayed on the control panel.
To empty the reject hopper on a printer with centralized locking:

1. Open the reject hopper by raising the door.
2. Remove the cards found, and close the reject hopper door again.

Empty the reject hopper regularly, such as whenever the ribbon is changed or during routine maintenance.
For the standard version (without central locking), it is sufficient just to remove the cards present in the reject hopper.



PRINT SETTINGS AND PRINTING

Managing the print settings

Before using your printer, it is essential to check and / or change the default print driver settings:

- Ribbon type
- Card type
- Finish, treatment
- ...

You will find more detailed information about the cards recommended by Evolis in the Evolis High Trust® list of consumables.

Pay attention to the settings defined under the print driver Properties and do not hesitate to contact your Evolis reseller for any advice and assistance needed before making any changes.

The following print settings are accessible:

- From the **Start** (Windows logo) button found bottom-left on the Windows task bar, select Peripherals and printers.
- Select your printer and double click.
- From the **printer**menu, select **Properties**.
- The first properties configuration screen for the equipment then appears.

The main tabs used to define the settings are “**Graphics**” and “**Tools**”.

Graphics tab

- Ribbon type
- Front / back printing
- The card loading method

- Card orientation, portrait or landscape
- Number of copies
- Advanced options

Tools tab

- Magnetic encoding option configuration and testing
- Printing a test card
- Cleaning the printer
- Printing a technical test card
- Dialogue interface with the printer



It is recommended to print a test card when first using the printer, and keep it. This card records information such as the model and serial number which you could be asked to provide if you call technical support.

Starting with ID-ALL

Quantum 2 is supplied with a Starter ID-ALL license. This edition can be upgraded to other editions to benefit from more features. For more information about the other editions, see **www.evolis.com > Product page**.

Evolis printers can also be used from different applications with a Print feature to print content. Set the document size to **CR80 (85.6x53.98mm with 1mm margin)** when required and select the printer name before launching a print job.

For more information about the use of ID-ALL, see **cardPresso Help Center** or go to **Help > Help guide / Technotes** in ID-ALL.

If any issue occurs, see the **ID-ALL articles on the Evolis Knowledge Base** or **cardPresso Help Center**.

1. Open ID-ALL.
2. Click on **Blank Card >** to create a document from a blank card and select features (magnetic stripe, encoding chip, etc.) or click on **Use template >** to create a card from a pre-designed template.
3. Put the cursor on a card model and click on **Use this card type** / **Use this template**.

   The card design window is displayed.
4. Click on the **Add database** button to link an external database if needed.
5. Drag and drop a column title on the card to create an item on the card and link it to the column.
6. Customize the card design by adding or modifying items (logo, illustration, identification photo, texts, barcode, etc.).
7. Click on the print icon.

ENCODING MODULE

General

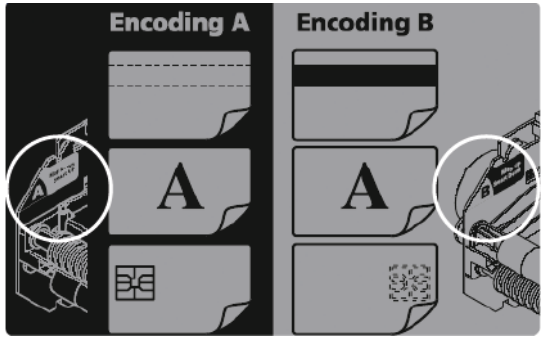
Quantum 2 is equipped with a multi-function, detachable and reversible encoding module.

The location of the encoding module is shown by the label stuck on it.

Position A = factory configuration = smartcard contact in upper position and magnetic stripe encoder in lower position.

Position B = magnetic stripe encoder in upper position and smartcard contact station in lower position.

Lastly, the encoding module has a dedicated motherboard fitted with a number of connectors enabling contact and contactless smart card encoders to be mounted.



An attachment support found on the back of the printer can be used to fit such encoders inside the device.

⚠ Before attempting any work on the encoding module, it is essential to turn the machine off and unplug the power cable.

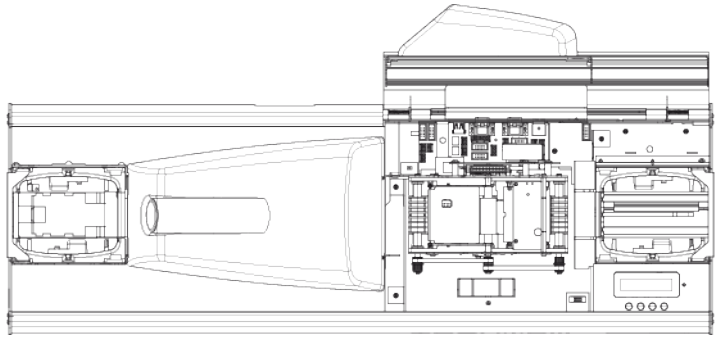
Functional Characteristics

The encoding unit comprises:

- A fixed electronic component, fitted under the mechanical component
- A motorized assembly including connection sockets, a magnetic stripe read-write head, a smartcard contact station along with a location for detachable antennas or encoders, with or without integrated antenna.

In its basic configuration, the module comprises:

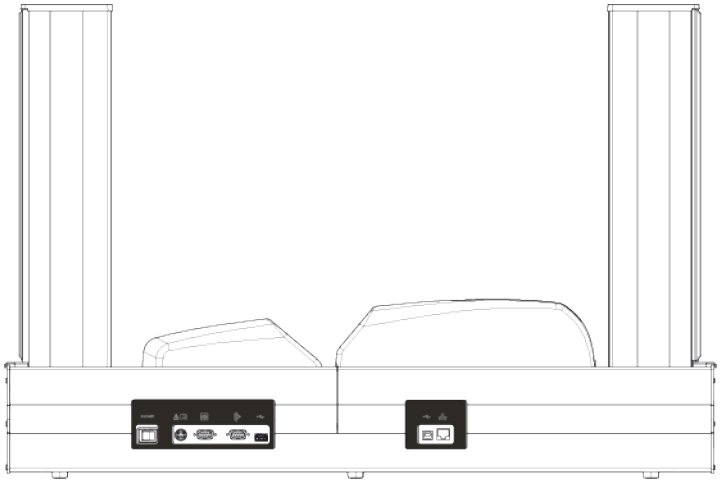
- An encoding unit turning mechanism,
- An ISO 7811 magnetic encoding unit, 3 tracks, HICO / LOCO,
- An ISO 7816-2 smartcard contact station,
- An antenna support attachment,
- 2 x internal USB ports for connecting a contact smartcard encoder and a contactless smartcard encoder,
- 2 x RS232 serial ports (including one also supporting TTL) for connecting a contact smartcard encoder and a contactless smartcard encoder,
- Internal power supply sockets enabling the encoders to be supplied with power directly,
- 2 x DB9 female connectors mounted on the external connection panel for direct connection of encoders or smartcard station to the computer,
- One linking connector between the motherboard and the reversible encoding unit.



Available Options

On request this module may be fitted with:

- JIS2 (Japan) magnetic encoding unit in place of the ISO encoder,
- Contact and/or contactless smartcard encoder (list of available encoders on request).



Options installed on site:

While observing safety rules and making sure of the quality of assembly and electrical connections, any user can consequently adapt their Quantum 2 to customization work on a case-by-case basis and so, for example, convert a Mifare encoder into a device used to handle HID Prox cards.

Such adjustments can only be carried out by well-informed users. Ensure that instructions and advice relating to the assembly and dis-assembly of an encoder are strictly observed to adhere to user safety guidelines, and protect the integrity of the Quantum 2 printer.

Turning The Encoding Module

Turning the encoding module should only be done after turning the machine off and unplugging the mains power cable.

1. Open the encoding module cover.
2. With one hand, press the button to release the encoding module and with the other, lift it up vertically.
3. Turn the encoding module around (180°).
4. Put it back in the machine.
5. The module should click into place.
6. Close the cover again.
7. Turn the printer on again using the ON/OFF button.

Replacing The Encoding Module

Despite the attention paid to the manufacture and quality of our products, the need to replace the encoding module may arise over the lifetime of the machine.

The module can be replaced by the user with no tools needed, simply by following the instructions very carefully.

Before doing anything else, contact your Evolis reseller in order to check the advisability of replacing the encoding module. The reseller will supply a new encoding module if need be.

Under these circumstances, the following procedure will need to be scrupulously carried out, in order to keep very high quality encoding, copying the properties and settings for the replacement module into the printer.

To replace the encoding module, proceed as follows:

Replacing the encoding module should only be done after turning the machine off and unplugging the mains power cable.
If the encoding module kit number is not entered correctly, machine malfunctions may occur and the warranty may be voided.

1. Open the encoding module cover.
2. Remove the encoding module found inside the machine.
3. Take the new encoding module, and note the code shown on the label stuck on it (bottom right of the front side when the module is in position A).
   You will be asked for this code subsequently.
4. Fit the new encoding module in its housing, in position A.
5. Close the cover.
6. Power up the printer and check that it is properly connected to a computer on which the printer's print driver is installed.
7. Under the print driver's Properties, click on the "Tools" tab.
8. In the "Printer dialogue" section, enter the following command: Pmn;x
   where x = the encoding module kit code number that you noted in Step 3.
   For example, if the encoding module kit number is: 89012700009321234567, the command to be entered is: Pmn;89012700009321234567

Magnetic Stripe Encoding

The Evolis magnetic encoder encodes the stripes in a single pass then runs a data check.

Configurable as high coercivity (HICO) or low coercivity (LOCO) by a simple click in the Windows print driver, Evolis magnetic encoders are however shipped with a default setting of high coercivity (HICO).

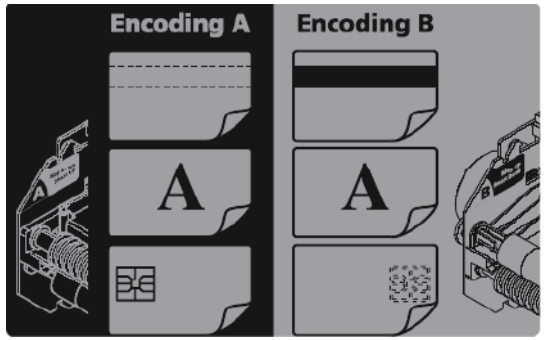
Card positioning

Magnetic stripe cards must be placed in the card feeder to match the configuration selected for the encoding module, in position A or in position B.

Position A = magnetic stripe encoder in the lower position = cards loaded with the magnetic stripe downwards

Position B = magnetic stripe encoder in the upper position = cards loaded with the magnetic stripe uppermost

"Cards" on page 21



Configuring the Windows print driver

When first installing the Windows print driver, the magnetic encoder functions need to be configured. The magnetic encoder functions are found in the print driver's **Tools** dialogue box by clicking on the **Encoding Settings** button.

Magnetic Encoder dialogue box

The Magnetic Encoder dialogue box opens when the **Encoding Settings** button is selected.

Track format is used to select the desired ISO standard for each magnetic strip. See the table in this Appendix for information regarding ISO 7811 standards.

Coercivity sets the magnetic encoding to high (HICO) or low (LOCO) coercivity. A magnetic stripe that is encoded in high coercivity is more resistant to external disturbance than a magnetic stripe encoded using low coercivity.

Direct encoding is used to directly encode one or more magnetic stripes from this window simply by selecting them and entering the data to be encoded. Click on the "Execute encoding" button to run the encoding cycle.

Automatic detection permits encoding of magnetic stripe cards from applications under Windows (such as Word for example). A text field enclosed within "| " and "| " characters (or other character which the user can define) will be interpreted as an encoding command by the print driver.

Cleaning the magnetic encoder

The magnetic encoder head requires regular maintenance in order to ensure the integrity of the data encoded onto cards. Cleaning of the magnetic encoder is carried out when the printer runs a cleaning sequence with pre-impregnated cards.

"Maintenance" on page 46

Repeatedly running the cleaning card through the printer cleans the card feed rollers, the cleaning roller, the print head and the magnetic encoder read-write head.

If, in between two printer cleaning runs, the read-write process fails with more than one card, it is recommended to run a printer cleaning sequence manually.

"Maintenance" on page 46

ISO 7811 magnetic encoding standards

Stripe number	Separator	Density (dpi[1])	Character set[2]	Number of characters[3]
STRIPE 1	^	210	Alphanumeric (ASCII 32-95)	79
STRIPE 2	=	75	Numeric (ASCII 48-62)	40
STRIPE 3	=	210	Numeric (ASCII 48-62)	107

1 Dots per inch

2 Except for the “?” character

3 Including the Start, Stop and LRC characters. These characters are handled automatically by the magnetic encoder.



For more information and assistance on magnetic encoding module, contact your Evolis reseller.

A stripe card can be encoded with the card design software supplied with the printer or **Evolis SDK** and the SDK of the encoder.

Contact encoding of smartcards



Use only smartcards compliant with the **ISO 7816-2 standard**.

Printing over the chip may cause permanent damage to the chip.

Smartcards must be placed in the card feeder with the **contact chip facing up**.

Encoding cannot be performed with an Ethernet connection.

To make contact with the station, the smartcard is positioned on it and is mechanically pushed into it. The chip programming sequence is always done before printing the card.

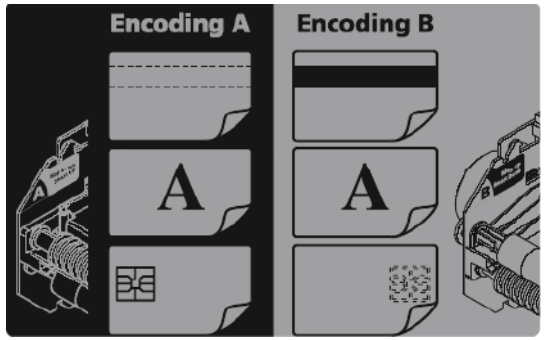
Card positioning

Contact smartcards must be placed in the card feeder to match the configuration selected for the encoding module, in position A or in position B.

Position A = smartcard contact station in upper position = cards loaded with chip uppermost

Position B = smartcard contact station in lower position = cards loaded with chip downwards

"Cards" on page 21



Command sequence for positioning the smartcard

A sequence of commands must be sent via the printer's interface to insert a card into the printer then position it under the station and establish contact.

The command sequence is as follows:

Sending the "Sis" sequence:

- A card is moved from the feeder towards the contact station and stops under it.
- The card is pushed upwards to make contact with the Station.
- The printer connects the contact station to the DB9 connector.
- The chip is programmed via the computer's serial interface and the external coupler.

For more information and assistance on encoding a contact smartcard, contact your Evolis reseller.

A smartcard can be encoded with the card design software supplied with the printer or **Evolis SDK** and the SDK of the encoder.

Evolis printers may be equipped with an encoding device for contactless smartcards (RFID).

This consists of an encoding module and sometimes a detachable antenna.

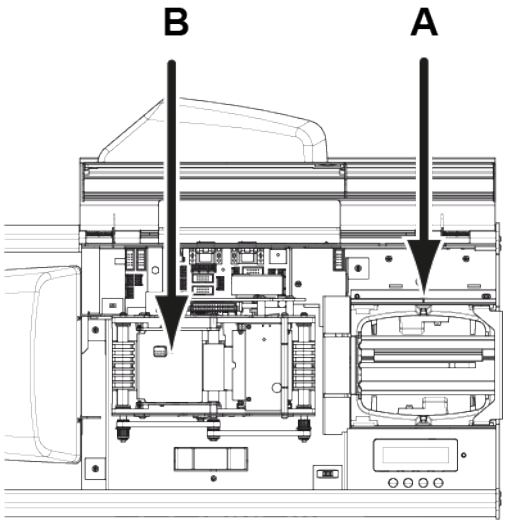
Quantum 2 is fitted as standard with an encoder support (A), and an antenna support (B), cf. diagrams opposite.

Integrating such a module must be carried out by a specialist.

The Evolis product catalog also has printers equipped with a built-in encoder for contactless chips.

Depending on the model, these encoders connect to the PC via an RS-232 interface (DB-9 socket) or a USB interface.

There is a very wide variety of contactless cards, and each card has specific technical properties associated with an equally specific type of encoder. Contact your reseller for more information.



Location of the antenna / encoder with built-in antenna

With a specific command, the card is positioned close to the antenna such that the card lies within its radio range.

Reading data from or writing data to the card can then start.

The encoding sequence for a chip is always carried out before the card is printed.

Card positioning

There are no restrictions on card positioning when encoding in contactless mode (except for cards comprising other encoding technologies: magnetic and / or contact smartcards).

If the cards used are fitted with mini-antennae, contact your card supplier for further information about where such mini-antennae are located within the card. Position the card as close as possible to the encoder's antenna to ensure optimum encoding.

Command sequence for positioning the contactless smartcard

A sequence of commands must be sent via the printer's interface to insert a card in the printer then position it close to the antenna to establish radio communication between the card and the encoder.

The command sequence is as follows:

Sending the "Sic" sequence:

- A card is moved from the feeder towards the antenna and is positioned close to it.
- The chip is programmed via the computer's serial (or USB) interface connecting the built-in encoder to the computer.



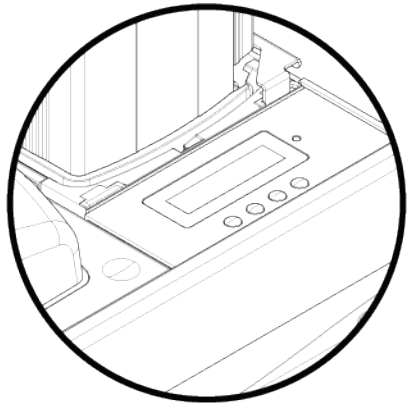
For more information and assistance on encoding a contactless smartcard or on the configuration of the card present signal, contact your Evolis reseller.

A smartcard can be encoded with the card design software supplied with the printer or **Evolis SDK** and the SDK of the encoder.

INTERACTING WITH THE PRINTER

Printer Menu

The Quantum 2 printer has an LCD display combined with a light-emitting diode (LED) enabling the operator to see the operating condition of the equipment and make adjustments to the most common settings.



The control panel comprises 3 units:

- One LCD unit with 2 lines, each of 16 characters, back-lit for better readability
- Four navigation buttons used to move around the menu, and confirm or cancel selections
- 1 two-color LED: green for normal operation, red in the event of a warning requiring the operator's attention

When idle, after a short phase when the printer is turned on, the control panel shows the following status:

Line 1 = printing module status = READY

Line 2 = encoding module status = READY A or READY B (the letter A or B corresponding to the encoding module position)

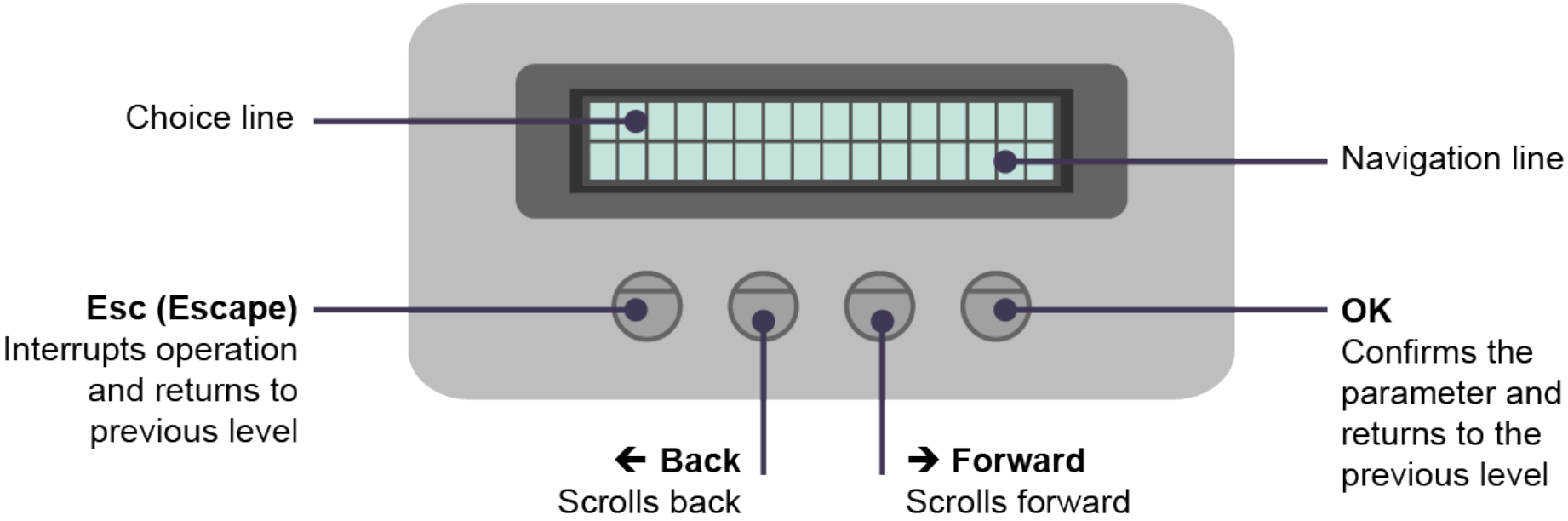
When running, the information shown varies:

- Upper line - Printing module status
- Lower line - Encoding module status
- Steady green LED - Pending
- Flashing green LED - Data transfer with the PC or printing in progress
- Fixed or flashing red LED, warning or error message display

In the event of operator intervention activating the menu, the LCD unit is converted into a dialogue and configuration support interface.

The lower line of the display unit is used to show the function of the control panel buttons at any time within a context-based menu.

Generally speaking, unless otherwise indicated, navigation works as follows:


Choice line
Navigation line
Esc (Escape)
Interrupts operation and returns to previous level
OK
Confirms the parameter and returns to the previous level
← **Back**
Scrolls back
→ **Forward**
Scrolls forward

Warnings and Error messages

Although the Evolis printer was designed to work independently, keeping user involvement to a minimum, it may nonetheless prove useful to gain some familiarity with the main warnings.

LCD display	Description	Required action	
Initialisation...	Startup in progress.	No	
Ready	The printer is ready to receive your data.	No	
Printer Cover Open	The printer cover is open.	Yes	Close the cover again. The printer starts up.
Feeder Empty	The card feeder is empty.	Yes	Put cards into the feeder.
Output hopper Full	The card output hopper is full.	Yes	Empty the output hopper.
No Feeder	The card feeder is absent or is not correctly installed.	Yes	Check that the feeder is in place.
No Output hopper	The output hopper is absent or is not correctly installed.	Yes	Check that the output hopper is in place.
Feeder Almost Empty	The feeder is about 90% empty.	No	
Output hopper Almost Full	The output hopper is about 90% full.	No	
No Encoding Module	The encoding module is absent or is not correctly inserted.	Yes	Check that the encoder module is in place.
Ribbon error	No ribbon in the printer. The ribbon is finished. The ribbon is not correctly fitted. The ribbon is torn.	Yes	Check the condition of the ribbon in the printer. If you have a print job in progress, this restarts with a new card.
Cleaning Required	The printer may be cleaned.	Yes	***"Maintenance" on page 46*** ***"Maintenance" on page 46***

LCD display	Description	Required action	
Mandatory Cleaning	The printer must be cleaned.	Yes	***"Maintenance" on page 46***
Reject hopper full	The hopper containing the rejected cards is full.	Yes	***"Maintenance" on page 46***
Print Head Error	The printer has detected a problem with the print head. Print jobs are interrupted.	Yes	Contact your Evolis reseller for assistance.
Mechanical Error	The printer has detected a card transport problem in the printing module or turnover area.	Yes	Open the equipment cover and remove the ribbon. Remove the jammed card carefully taking care not to damage the printer and its components. Replace the ribbon, close the covers. The printer starts working again. If the problem persists, contact your Evolis reseller for assistance.
Magnetic Error	The magnetic stripe is facing the wrong direction in the feeder. The encoding type is incorrectly configured (HICO or LOCO). The encoded data does not comply with ISO 7811 standards or with the predefined settings in the print driver properties.	Yes	***"Encoding Module" on page 31*** Press the control button for one second. The printer will restart the magnetic encoding cycle with a new card. If the problem persists, contact your Evolis reseller for assistance.
Cooling...	Cooling of the current printing module.	No	
Printing...	Printing in progress.	No	
Encoding...	Encoding in progress.	No	
Downloading...	Loading Firmware in progress. To permit correct execution of this operation do not disconnect the printer or the PC.	No	
Restarting...	The printer is restarting following firmware loading.	No	

LCD display	Description	Required action
Waiting...	Waiting for the end of processing.	No
Cleaning...	Cleaning procedure execution in progress.	No
Processing...	The printer is receiving data.	No

MAINTENANCE

Comply with the instructions given below to ensure a good functioning of the printer.

The manufacturer's warranty is subject to a strict compliance with the routine servicing and maintenance instructions, and in particular the printer cleaning cycles.

Any failure to follow the maintenance and servicing procedures described in this section voids the print head warranty.

Evolis declines any liability where there has been a failure to carry out required maintenance on the printer.

The print head is a wearing part and a sensitive printer component. Its useful life can be reduced by the presence of dust, liquids or solids in the printer's immediate environment, on the print head or on the cards. Users must take all necessary precautions to insert only clean cards, free of dust deposits or foreign bodies, into the machine.

The frequency and quality of cleaning are decisive factors enabling users to extend the print head's useful life and to ensure excellent print quality.

In addition, the use of Evolis High Trust® consumables ensures that the printer operates properly. Use of non-Evolis High Trust® consumables may affect the quality and reliability of print jobs, and even affect the printer's operation. The manufacturer's warranty does not cover physical damage or quality problems caused by the use of non-Evolis High Trust® ribbons.

Evolis provides replacement parts and consumables that you can refer to on **www.evolis.com**.

Regular cleaning

The print head warranty is directly linked to the regular cleaning of the printer.

Failure to perform this cleaning at the required times leads to the invalidity of the print head warranty.

The printer is fitted with a cleaning warning system, which is triggered after a certain number of cards have been inserted. Proceed with the regular cleaning of the printer as soon as the warning is triggered. If you continue to run the printer despite the warning and if the warning light remains lit, the print head warranty is void because of failure to comply with contractual maintenance obligations.

When cleaning the print head:

- Avoid any contact between the print head and any metal or sharp objects. This could permanently damage the print head.
- Avoid touching the print head directly with your fingers, as this could affect print quality or permanently damage the print head.

Recommended cleaning cycle: Every time the ribbon is changed. For more information, refer to the **Cleaning kit safety datasheet** (**www.evolis.com > Consumables**).

Mandatory cleaning cycle: When the cleaning warning is triggered.

Servicing accessories: Adhesive cleaning card with 2 adhesive-free zones and cleaning swab impregnated with isopropyl alcohol.

Cleaning cycles can be launched from the LCD touchscreen (for printers equipped with an LCD touchscreen). Refer to the corresponding user guide available on **www.evolis.com > Support section > Product page**.

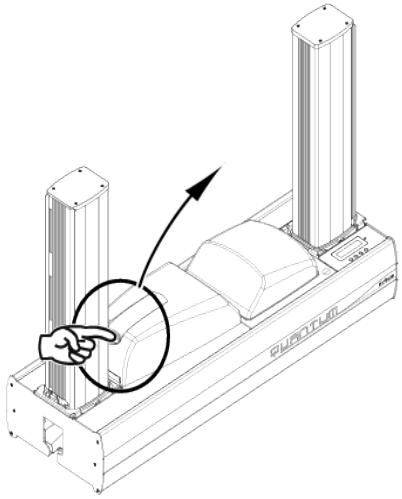
When the cleaning cycle is over, wait 2 minutes before using the printer to let the alcohol evaporate.

Video(s) of the procedure(s) available on **Evolis YouTube channel**.

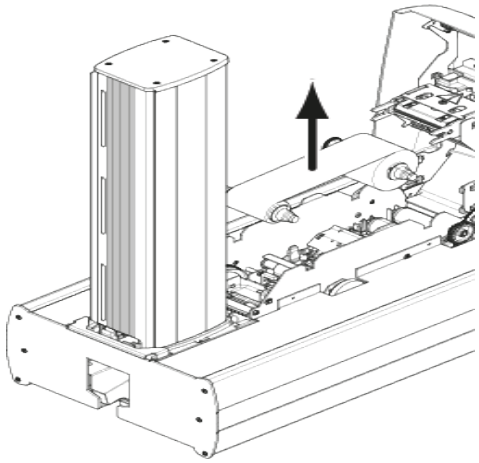
Printer	Cleaning required after: (warning light flashing)	Number of cards remaining before warranty voided: (warning light flashing)	Warranty invalid after: (warning light steady)
Quantum 2	900 cards	700 cards	1600 cards

Follow the procedure below:

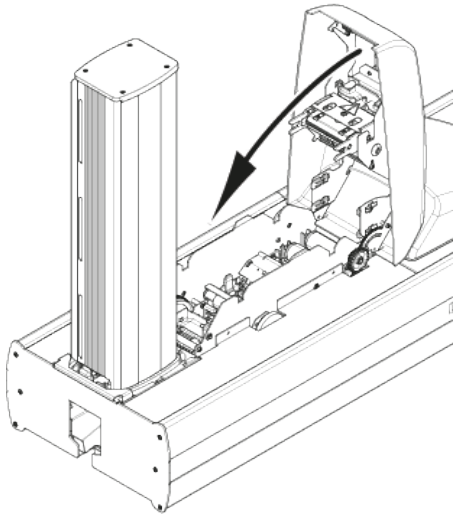
Repeatedly running the cleaning card through the printer cleans the feed rollers, the cleaning rollers and the print and magnetic head.



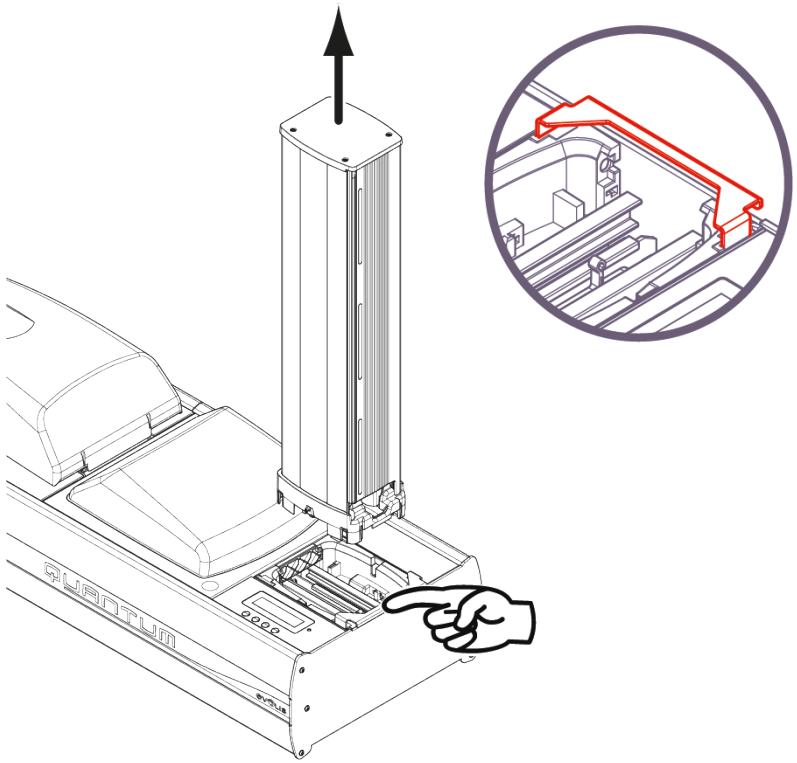
1. Open the cover and remove any ribbon.



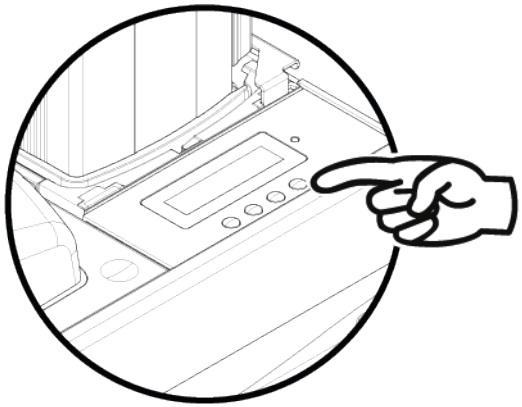
2. Remove the ribbon found inside



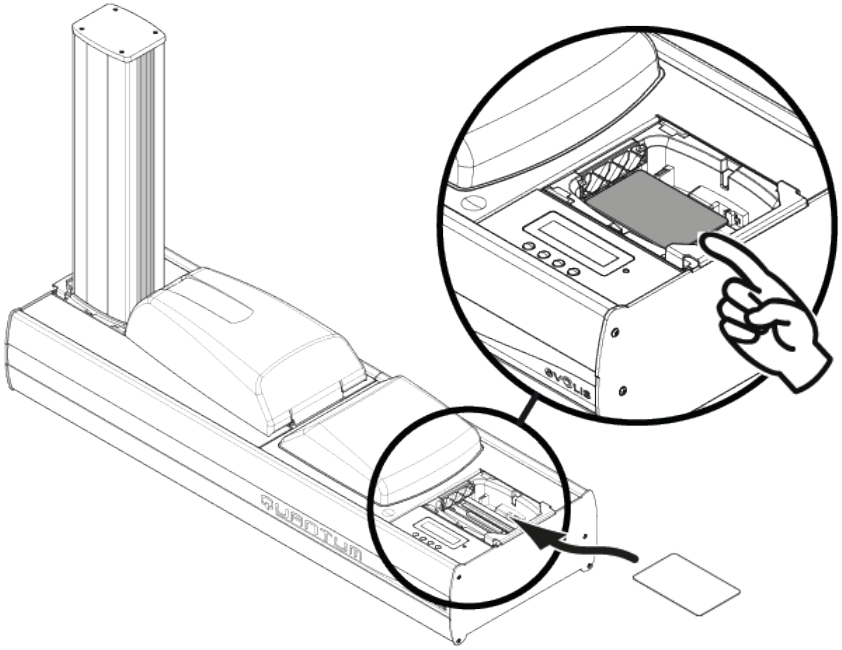
3. Close the cover.



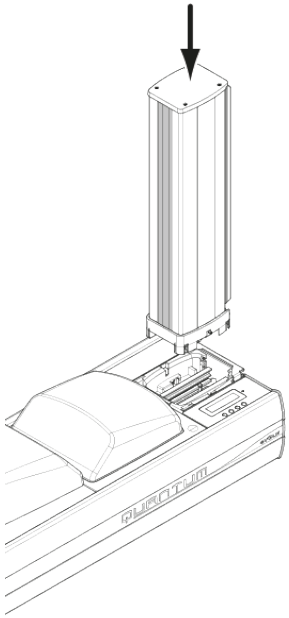
4. Remove the feeder from the printer as shown.



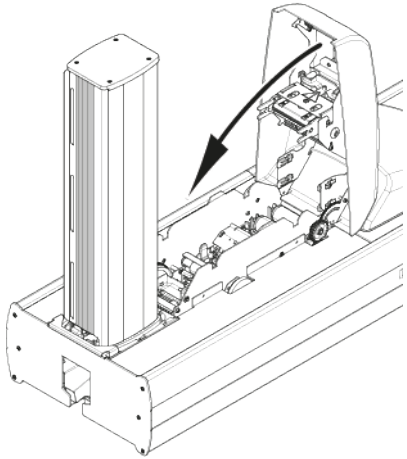
5. Obtain a new cleaning card supplied by Evolis and open the menu on the LCD display by pressing the keys. Select the ‘Cleaning menu’ and confirm with ‘OK’.



6. Insert the cleaning card manually and push it into the machine.
   This will load automatically.
   Cleaning starts, the display indicates '**Cleaning**'.
   The cleaning card will be automatically ejected into the reject hopper.



7. Replace the feeder in the printer.



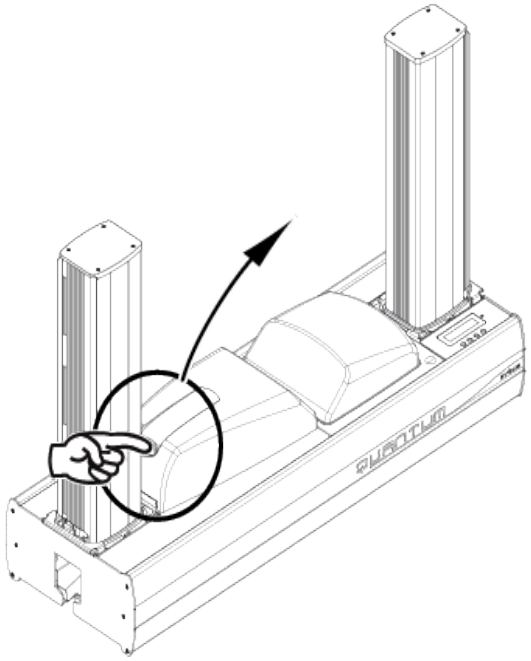
8. Replace the ribbon and close the cover.

Wait for 2 minutes after cleaning before using your printer.

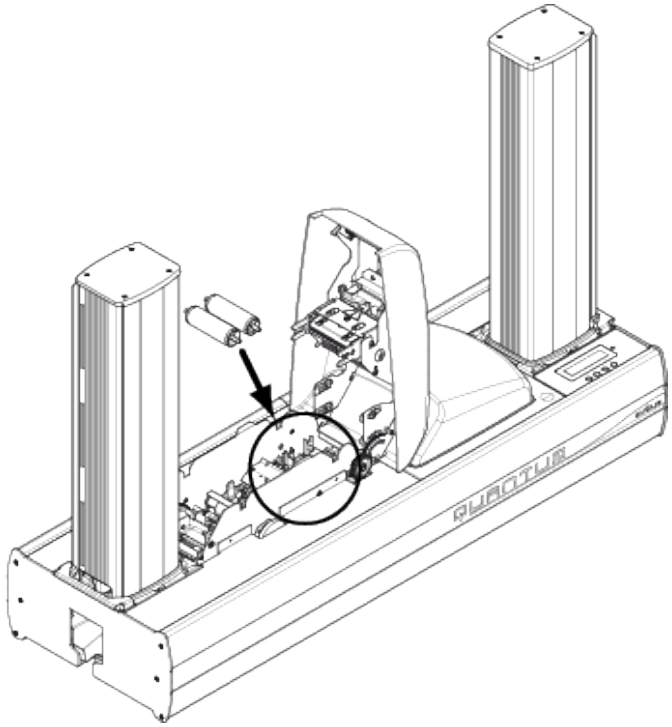
Cleaning the cleaning rollers

In addition to routine printer cleaning, we suggest that you clean the cleaning rollers using the special wipes available from Evolis. These rollers remove any dust or particles from the cards before printing.

Recommended cleaning cycle: whenever the ribbon is changed.
Servicing accessory: cleaning wipe



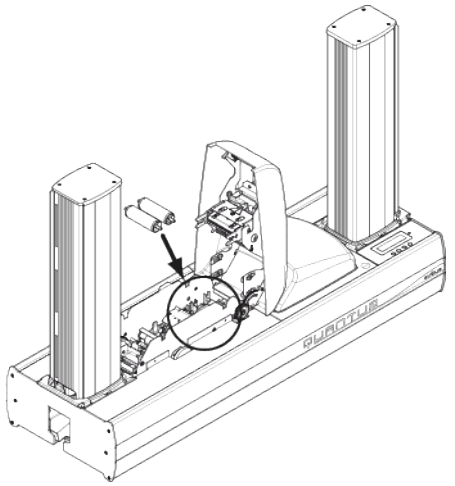
1. Open the cover and remove any ribbon.



2. Remove the cleaning rollers



3. Rub the wipe gently over the surface of the roller.



4. When it has dried, put the cleaning roller back in the printer.

Wait for 2 minutes after cleaning before using your printer.

Cleaning the print head

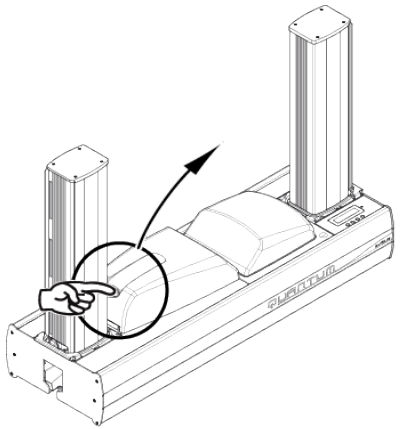
Recommended cleaning cycle: whenever the ribbon is changed.
Servicing accessory: Special swab impregnated with isopropyl alcohol.

Unplug the printer from its power supply before cleaning the print head. Follow the cleaning cycles scrupulously.
Avoid any contact between the print head and any metal or sharp objects.
Avoid touching the print head directly with your fingers, as this could affect print quality or permanently damage the print head.
Protect the print head and its components from any discharge of static electricity.

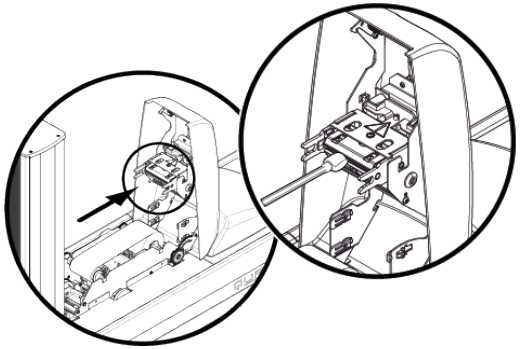
The print head is cleaned in the course of the printer's regular cleaning procedure (***"Regular cleaning" on page 47***).
To maintain print quality and to absorb surplus ink on the print head, It is recommended to regularly clean the print head (whenever the ribbon is changed).



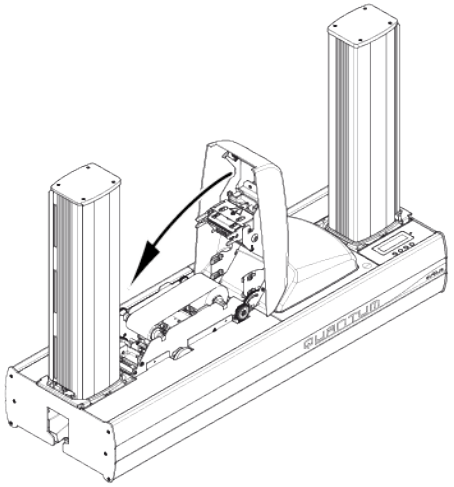
1. Take an Evolis High Trust® swab and press the middle of the tube until the end of the swab is impregnated with alcohol.



2. Open the cover and locate the print head.



3. Gently rub the swab from left to right along the print head for a few seconds.



4. Close the cover.

Wait for 2 minutes after cleaning before using your printer.

HELP

Diagnostic help

Printing a technical test card

When receiving the printer, print a technical test card to make sure that the printer operates properly.

When printing a technical test card:

1. Wait for any current print jobs to finish.
2. Make sure that a ribbon is installed and that there is a blank card in the feeder.
3. Enter the display menu by pressing one of the keys.
4. Press the key to scroll through the menu selections until the SERVICE selection is displayed, then confirm with OK.
5. Press the key to scroll through the menu until the TEST CARD menu is displayed, then confirm with OK.
6. The Self-test selection will be displayed. Confirm with OK to start printing the test card.
7. The test card will be printed in a few seconds.
8. It will provide you with information such as the printer model and serial number.
9. The printed card will be ejected into the reject hopper.

The following information is available on the technical test card:

- Printer model
- Serial numbers (Printer and print head),
- Firmware version,
- Cleaning operations,
- etc.

These information may be required by a reseller or technical support for assistance.

Troubleshooting

Do not attempt to use tools or other items to repair your printer in the event of problems, in case major damage is caused.

Printing issues

No printing

Printer driver

- Make sure that there is a printer driver for the printer in the Windows configuration.
- Make sure the printer driver is up-to-date.
- Make sure that the printer is selected as the default printer.

Printer power supply

- Make sure the power supply unit supplied with the printer is being used.
- Make sure that the power cable is correctly connected to the printer and to a functional electrical socket. (***"Installation" on page 15***)
- Make sure that the printer is ON and that the power button  is lit.

USB cable

- Make sure that the USB cable connects the printer to the computer.

Ribbon

- Make sure that the ribbon is fitted correctly and that the cover is closed

Cards

- Make sure that there are cards in the card feeder.
- Make sure that no cards are jammed in the printer. ***"Jammed cards" on page 69***

Blank card ejected

Ribbon

- The ribbon may be finished
    - Replace the ribbon.
- The ribbon may be incorrectly installed
    - Re-install the ribbon.
- The ribbon may be cut or torn
    - Repair the ribbon

If the problem persists, contact your reseller.

Print head

- The print head may be damaged
    - Try and print a technical test card.
    - If the card is not printed, contact your reseller for assistance.

Poor printing quality

Small blemishes on the card



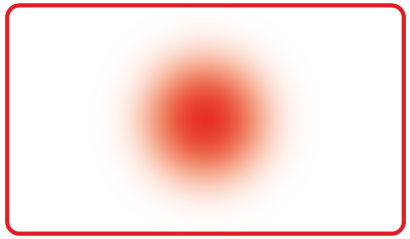
- **Cards**
  - Cards may be dirty
    - Use new cards.
    - Store the cards protected from dust.
- **Cleaning**
  - The cleaning roller or the print head may be clogged
    - Launch a regular cleaning cycle (***"Maintenance" on page 46***)

Horizontal white lines



- **Ribbon**
  - The ribbon is not correctly fitted
    - Re-install the ribbon
    - Make sure there are no wrinkles on the surface of the ribbon
- **Print head**
  - The print head may be clogged
    - Launch a regular cleaning cycle (***"Maintenance" on page 46***)
  - The print head may be damaged
    - Contact your reseller for assistance and replace the print head (***"Replacing the print head" on page 66***)

Blurred image



- **Ribbon**
  - The ribbon is not correctly fitted
    - re-install the ribbon
  - The ribbon is not correctly synchronized
    - Open and close the printer cover
- **Cards**
  - Make sure that the thickness of the cards used matches the technical specifications available on **www.evolis.com> Product page**.
- **Cleaning**
  - The printer and the cleaning roller may be clogged
    - Launch a regular cleaning cycle (***"Maintenance" on page 46***).

If the problem persists, contact your reseller.

Partial or incorrect printing

USB cable

- If irregular characters are printed, make sure the USB cable supplied with the printer is being used.
- Try using another cable of the same type.

Cards



We recommend buying cards from an Evolis reseller. Use of non-Evolis High Trust® cards may affect print quality and may damage the print head.

- Cards may be dirty
  - Use new cards.
  - Store the cards protected from dust.

Ribbon

- Make sure the ribbon is correctly fitted in the printer and moves correctly.

Cleaning

- The printer may be dirty
  - Launch a regular cleaning cycle.(***"Maintenance" on page 46***)

Print head

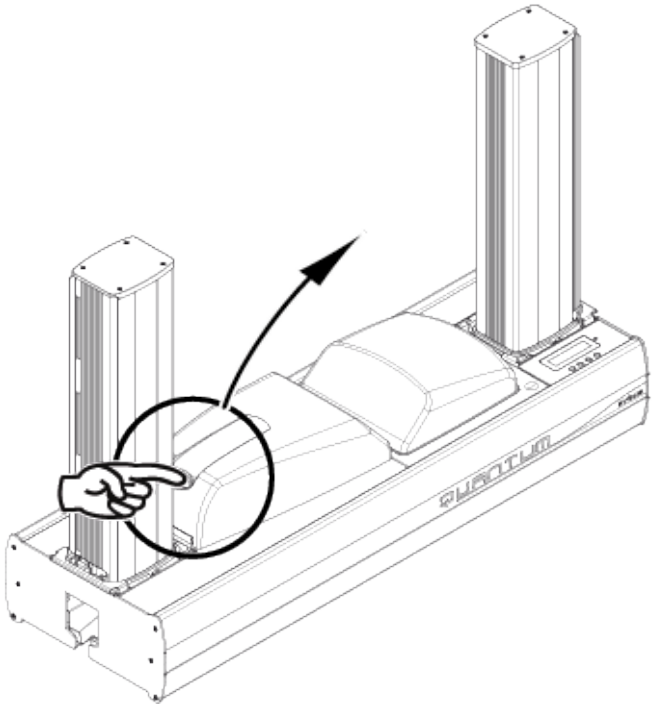
- The print head may be dirty
  - Launch a regular cleaning cycle. (***"Maintenance" on page 46***)
- The print head may be damaged
  - Contact your reseller for assistance and replace the print head (***"Replacing the print head" on page 66***)

If the problem persists, contact your reseller.

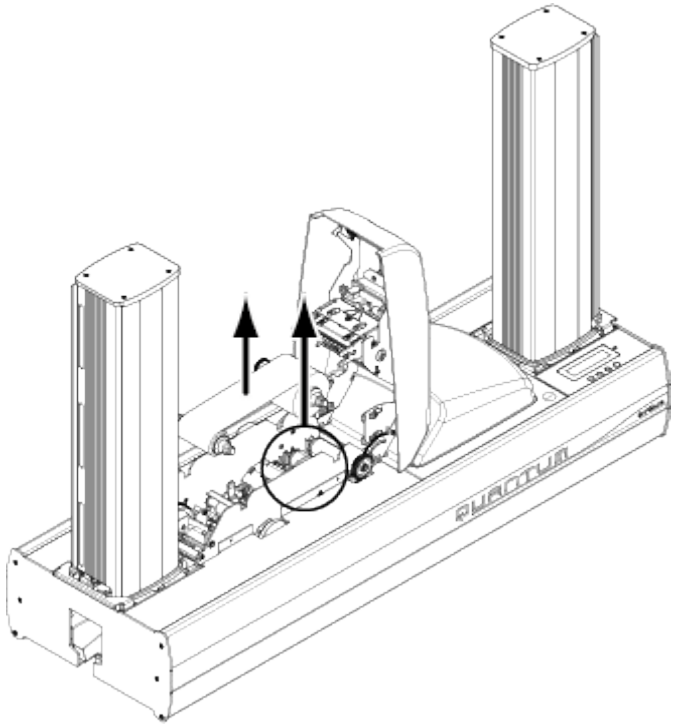
Replacing the cleaning rollers

Should your cleaning rollers start to work less effectively despite regular maintenance, it is advisable to replace them in order to avoid dirt accumulating on the print head, resulting in permanent damage. ***"Maintenance" on page 46***

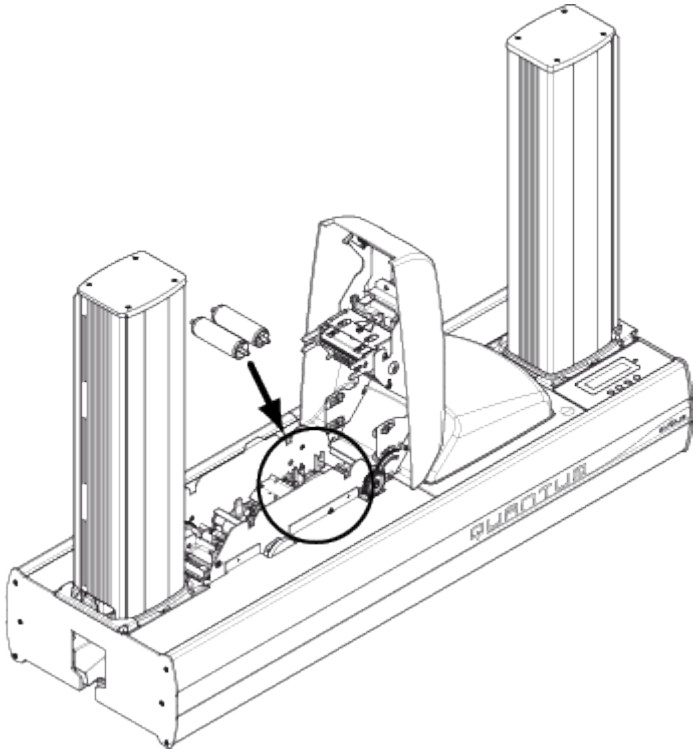
The cleaning rollers are available as a consumable from your Evolis reseller.



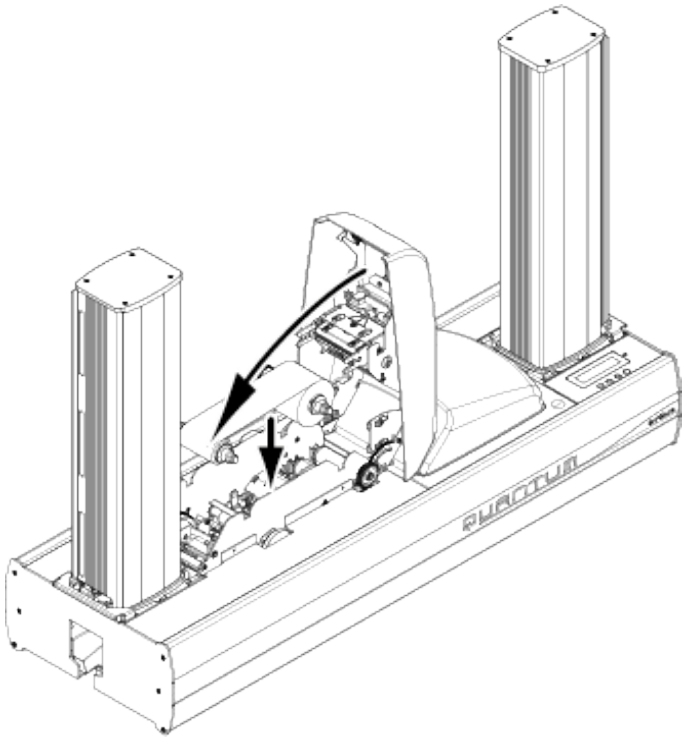
1. Open the printer cover.



2. Remove the ribbon if any then locate the cleaning roller and release it from its housing.



3. Fit the new roller in the printer, ensuring that it is correctly positioned in the housing.



4. Put the ribbon back, then close the printer cover.

Replacing the print head

The print head is a sensitive component of the printer. It determines the print quality. A regular cleaning and an environment free from dust or other particles ensure a lengthy useful life.

Before replacing the print head, contact your Evolis reseller. The reseller can give advise and supply a new print head if necessary.

Unplug the printer before replacing the print head.

Avoid any contact between the print head and any metal or sharp objects. This could damage the print head.

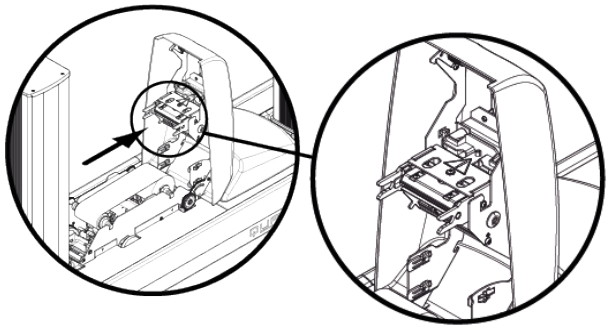
Avoid touching the print head directly with your fingers. This could affect print quality or damage the print head.

Before doing anything else, please contact your Evolis reseller in order to check the advisability of replacing the print head. The dealer will supply a new print head if need be.

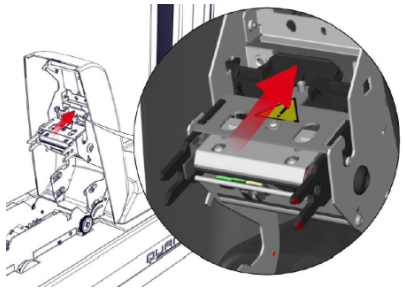
If the print head kit number is not entered correctly, printer malfunctions may occur and the warranty may be voided.

Cleaning is absolutely necessary after changing the print head. No print jobs can be run until the cleaning operation has finished.

Step 1: Removing the defective print head



1. Open the printer cover and locate the print head.

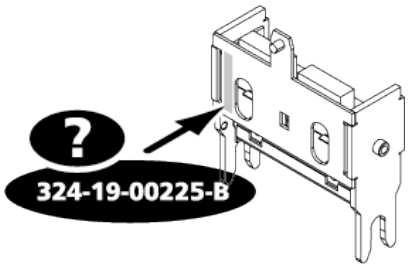


2. Press on the pressure plate located behind the print head and pull the print head as shown to free the lugs from the holding fork. Remove the lugs from their slots.

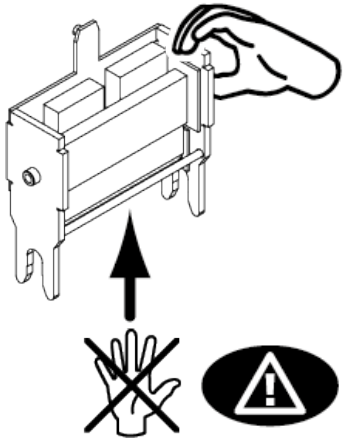


3. Tilt the head downwards and disconnect the connector linked to the cable. Avoid forcing the mechanism.

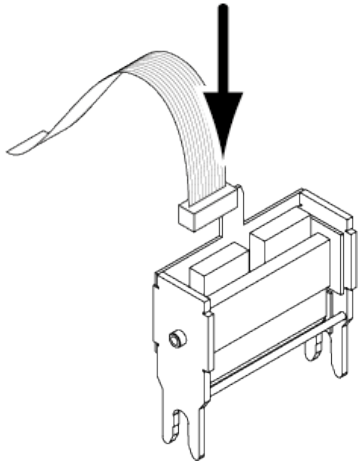
Step 2: Installing a new print head



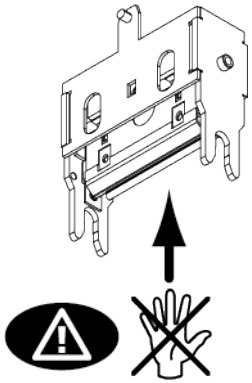
1. Note the code shown on the white label stuck on the print head. You will be asked for this code in Step 3.



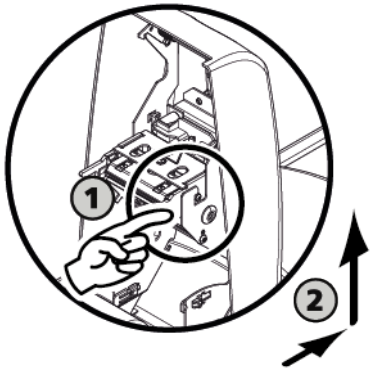
2. Pick up the new print head and turn it towards you, with the white connector visible.



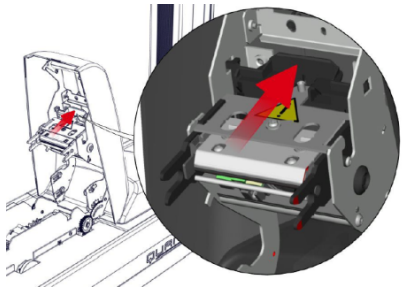
3. Connect the cable into its socket, making sure it is the right way round. Do not use any force, as this part is relatively fragile.



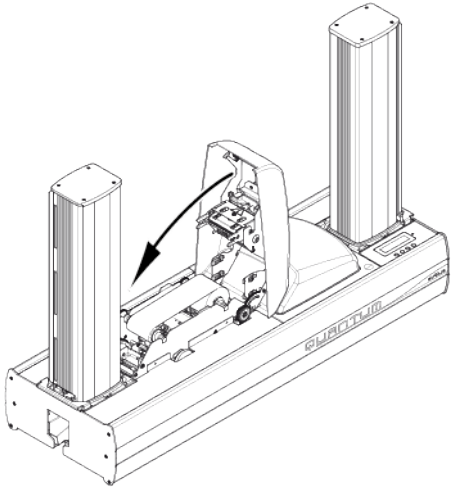
4. Turn the head so that the logo is visible (be careful), the connector can no longer be seen.



5. Insert the head vertically between the two guides so that the fork lugs are held within the slot.



6. The head is back in position



7. Close the cover. The print head is now fitted.

Step 3: Configuring the new print head

- Power up the printer and check that it is properly connected to a computer on which the printer's print driver is installed.
- In the print driver's Properties, click on the "**Tools**" tab.
- In the "Printer dialogue" section, enter the following command: Pkn;x

where x = the print head kit code number that you noted in Step 2.

Step 4: Cleaning the new print head

On your printer's control panel – CLEANING – is shown.
Clean the cleaning rollers and put the ribbon and cards back in place.
Once cleaning has been carried out, the printer is ready to be used.

Jammed cards

Removing a jammed card



Do not power off the printer, as this cancels pending print jobs in the printer's memory.

The mechanical error signal is ON and printing is interrupted.

1. Open the printer cover and remove the ribbon.
2. Press and hold the power button to activate the card feed rollers.
3. If the card is still stuck inside the printer, slide it manually towards the printer output. If there is more than one card, always push the top one first.
4. Put the ribbon back in place and close the printer cover.

Preventing jammed cards

- Make sure that the card thickness selector is correctly adjusted.
- Make sure that the thickness of the cards used matches the technical specifications available on **www.evolis.com** > **Product page**.
- Make sure that the cards are flat. Keep them in an horizontal position.
- Make sure that the cards are not stuck together. Shuffle the cards before loading them.

Updating the printer driver

Update the printer driver in these cases:

- Printing or communication problems with the printer,
- To benefit from new features available with new versions,
- If you received a notification from the driver or your reseller advising you to update your driver.

1. Download the Driver/Premium Suite file (.exe for Windows and .pkg for macOS) on **www.evolis.com > Support section > Product page**.
2. Decompress the downloaded package.
3. Double click on the installation file and follow the instructions of the installation program.

Updating the firmware

Update the printer firmware in these cases:

- Printing or communication problems with the printer,
- If you received a notification from the driver or your reseller advising you to update your driver

Firmware updates are only required in case of an issue or malfunction.

An update of the firmware that is not properly performed may result in a malfunctioning printer.

Interrupting the transfer between computer and printer during the download phase (powering off the printer or computer, unplugging a cable) would make it impossible to restart the printer. If such an incident occurs, contact your Evolis reseller to replace the printer's processing board.

In case of problems during the update of the firmware, contact your Evolis reseller who can provide a new installation file for the firmware.

The update of the firmware is performed from the printer driver or from the update notification.

1. Download the firmware file (.firm) on **www.evolis.com > Support section > Product page**.
2. Follow the instructions and select the file .firm that was just downloaded.
3. The operation may take up to 1 minute. When the firmware is installed, the printer restarts. The update is complete and the printer is ready.

If the printer is not showing a **Ready** status, the update was not performed correctly or the printer is not working properly. Check the connection cables and run a new update.

Technical support

Evolis provides assistance to their users in case of difficulties using or configuring a printer.

Evolis support section

Information on using and troubleshooting Evolis printers is available on **www.evolis.com > Support section**.

- Latest versions of firmware
- Latest versions of print drivers
- Latest versions of user manuals
- Videos on using and maintaining printers
- A knowledge Base

Evolis partner network

For unresolved technical problems, contact your Evolis reseller.

If you do not know any Evolis resellers, contact us to have the contact information of the nearest Evolis reseller.

When calling an Evolis reseller, make sure to be close to the computer connected to the printer and to provide the following information:

- Printer model and serial number
- The version of the operating system (computer)
- A description of the incident
- A description of what was performed to try and resolve the incident

Identify what matters

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