User Manual

Laminator L201

Table of contents

1 General information

Product description

See specification!

Symbols and conventions

The following symbols and conventions are applied in this user manual.

The symbol indicates important information, which must be observed. A failure to do so may lead to injuries.

The symbol indicates parts of the device that are hot and should not be touched.

Good advice or information regarding important working steps.

Framed text corresponds with a key on the Printer's control panel.

Intended use

The device is constructed in accordance with the latest engineering practice and per the recognised safety regulations. Nevertheless, danger to the life and limb of the user or third parties or damage to the device and other property may occur when using it.

The device must be operated exclusively when in a technically faultless condition, as intended, with an awareness of safety and potential hazards, and in accordance with the operating manual.

The device is intended exclusively for laminating suitable materials. Any other use or any use exceeding this is considered unintended use. The manufacturer shall not be liable for any damage that results from misuse. The operator is solely responsible for the resultant risk.

Safety instructions

The device is designed for an AC mains supply from 100 V to 240 V. It must be connected exclusively to sockets with a grounded conductor contact.

The device must be operated exclusively in a dry environment and must not be exposed to any moisture (spray, mist, etc.).

Do not operate the device in potentially explosive atmospheres.

Do not operate the device in close proximity to high voltage lines.

If the device is operated with an open cover then it is essential to ensure that clothing, hair, jewellery and similar personal effects cannot come into contact with the exposed, rotating parts.

The device or parts of it may become hot during lamination. Do not touch during operation and allow to cool prior to changing the film if necessary.

Risk of crushing when locking the heated rollers or closing the cover.

Only execute the actions described in this user manual. Further work must be carried out exclusively by trained personnel or service technicians.

Unprofessional intervention or modifications to the device may endanger

When opening the housing cover a risk of death exists due to live parts.

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Environmental information

The device comprises materials that can be reused when processed by specialist recycling companies. The optimum design of the laminator facilitates a straightforward separation of the recyclable materials. Label the device as scrap and dispose of it in accordance with the legal regulations.

2 Connection and commissioning

Device overview
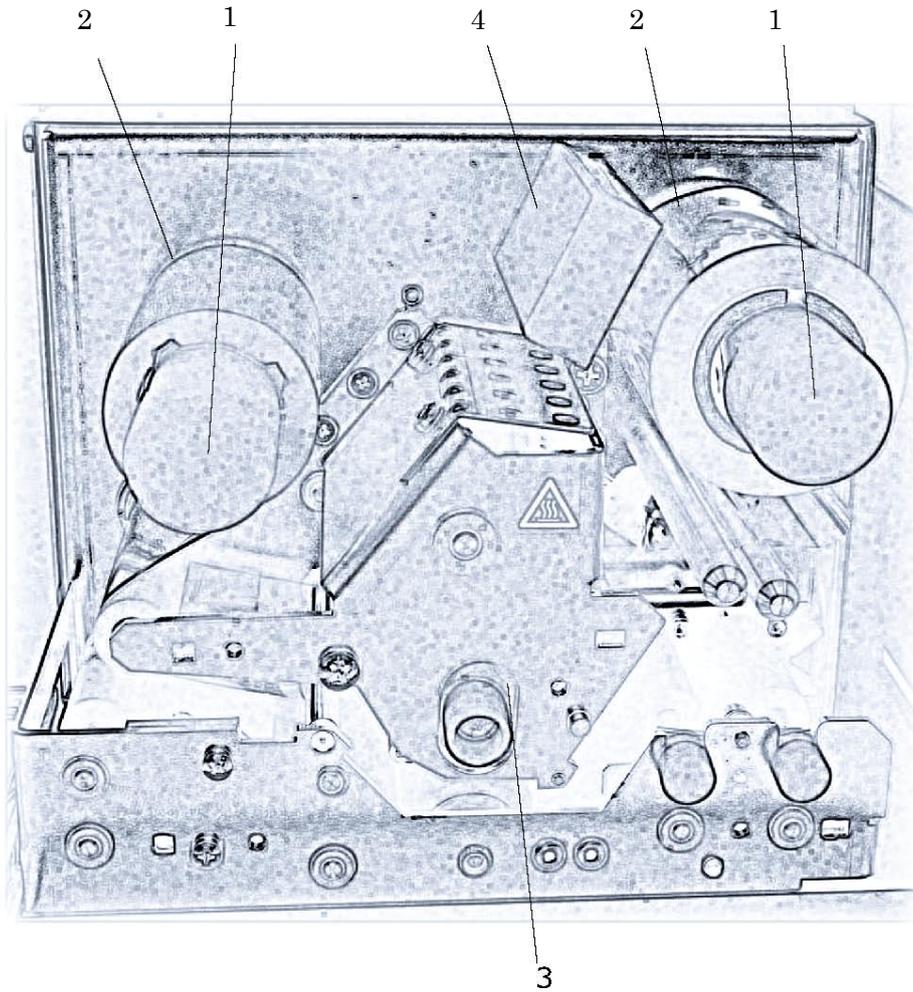
1 Carrier roller

2 Spacer ring

3 Heated roller

4 RFID module

Unpacking and setting up the device

- Remove the device from its packaging and place on a level surface.
- Check the laminator for transport damage.
- Check delivery for completeness.

Scope of supply:
- Laminator
- Power adapter
- Mains cable

Store original packaging for subsequent transportation.

Connecting the device

RS232-Interface   24V connection jack   Mains switch
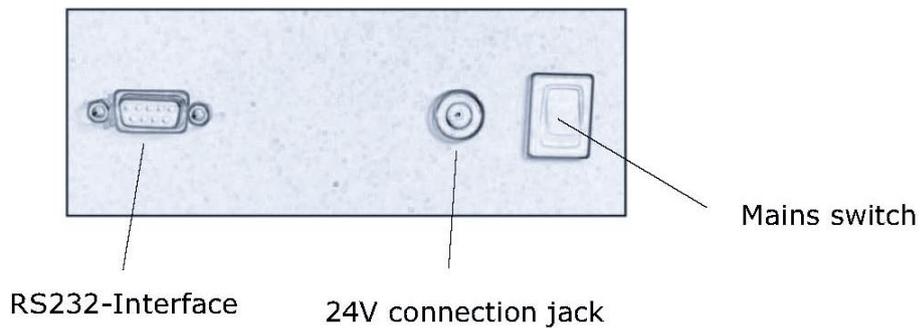
Connecting to the power supply (**24V connection jack**)

The laminator is equipped with a external broad-range power pack for a mains voltage of 100 V to 240 V. Plug the mains cable into an earthed socket and the 24V cable into the 24V device connection jack.

Connecting to the PR-C201 Printer (RS232-Interface)

The laminator must be connected to the PR-C201 printer with a suitable interface cable. (Refer to the chapter 3 "**Attaching the Laminator to the Printer**")

Connecting to a computer (RS232-Interface)

For configuration and service purposes the laminator must be connected to the computer with a suitable interface cable. (Refer to the chapter 7 "**Service**")

Inserting film
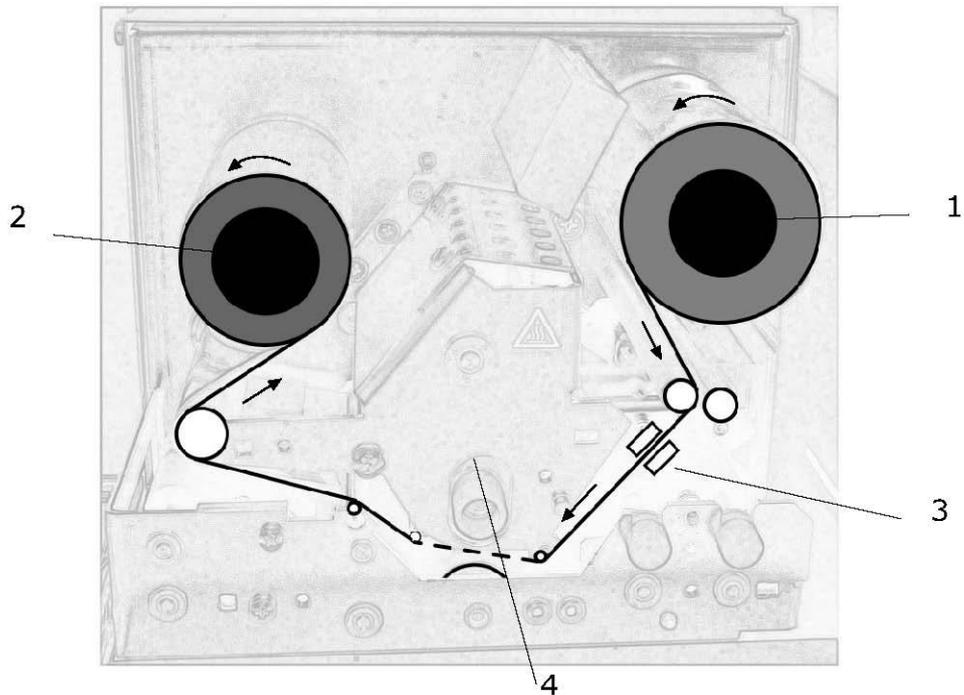
⚠️ There is a risk of burning on the safety guard for the heated roller (4)

When inserting or exchanging patch film proceed as follows:

• Switch off the device and let it cool down
• Open housing cover
• When exchanging the film additionally empty carrier rollers (1,2)
• Slide the film roll onto the unwinding carrier roller (1) until it reaches the limit stop.
• Slide an empty film core onto the winding carrier roller (2) until it reaches the limit stop.
• Insert the film in accordance with the drawing shown above. Attach the start of the film to the empty core with adhesive tape.
• Switch on the device.
• Transport film with ⟨▲⟩ key to the first patch and when doing so check that the film runs correctly and crease-free.

ℹ️ The first index mark on the film should lie before sensor (3), in order that no patch is lost.

3 Attaching the Laminator to the Printer

① Switching off the Printer.
 Switching off the Laminator.

② Insert the hooks of the Laminator to the holes by the Card Ejection Slot of the Printer.
 Insert the hooks of the Card Stacker to the holes by the Card Ejection Slot of the Laminator.

③ Connect the Laminator with the Printer via the serial interface.
 A standard cable RS-232 SERIAL SUB D9 connector jack is used.

④ Connect the Power Cable of the Printer.
 Connect the Power Cable of the Laminator.

<Printer>

Rear Side of the Printer

④ Port for Enhancing Function
 Used for enhancing function[*1]

RS-232C cable

<Laminator>

Mains switch

RS232-Interface   24V connection jack

10
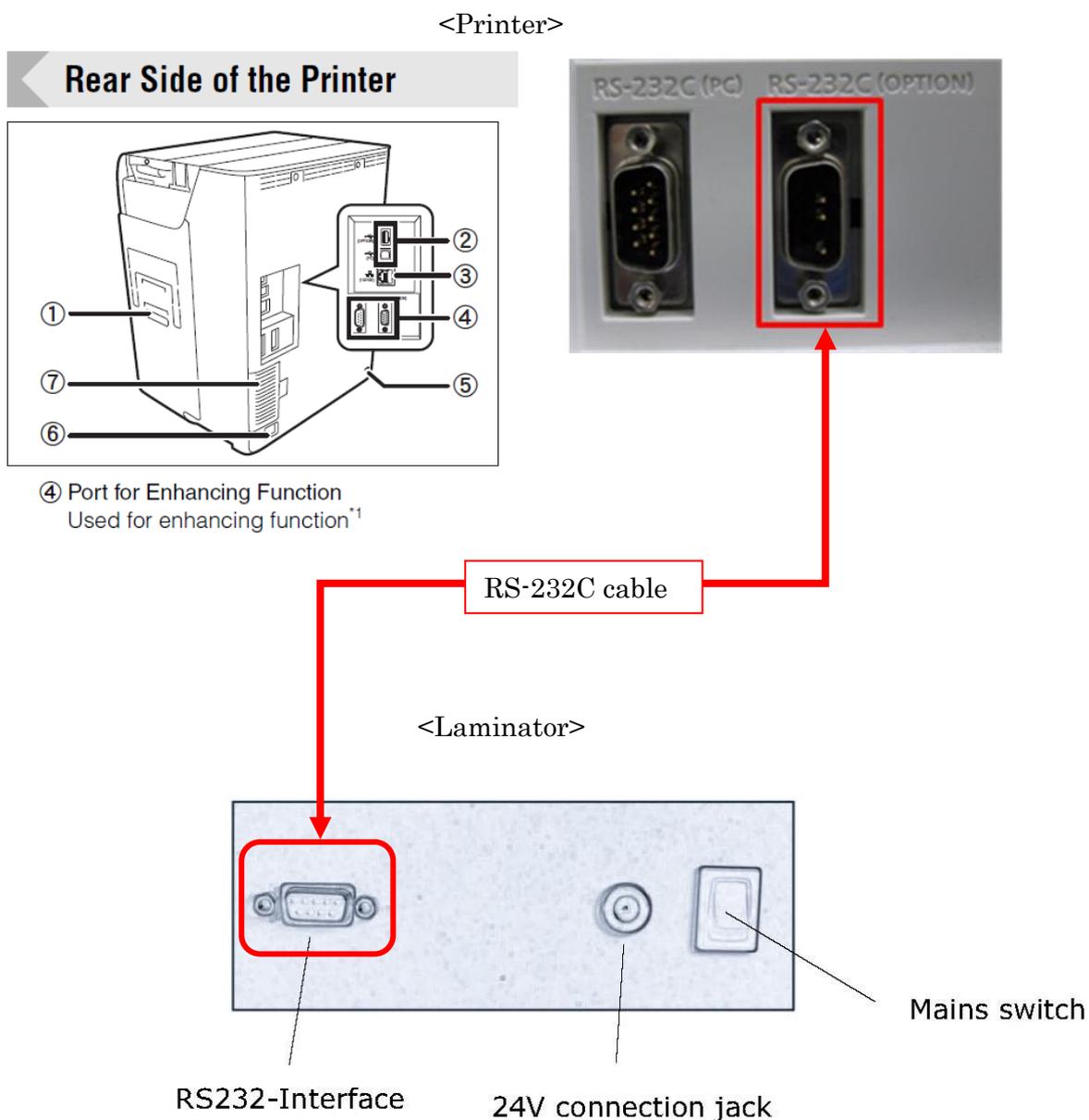
4　Laminating

Switching on the Printer & Laminator

① At first, Switching on the Laminator.
　The device carries out initialization with a simultaneous self-test. If no error is present, heated roller heating commences.

② Next, Switching on the Printer.
　If the Laminator is at heating status, the Printer's display indicates "Initializing / Lami Warm up".
　After roughly 8 minutes the Laminator is ready for operation and the display indicates "Ready to Print".

 It is assumed that Laminator's film is already present inside the device.

 Refer to the chapter 6 "**Troubleshooting**" when Error Message was indicated.

 Refer to the chapter 5 "**Configuration**", then check the "Connection" menu.
The display indicates "CONNECT" when the Laminator is connected to the Printer correctly.

```
Connection
CONNECT
```

Driver Setting

For laminating, check the box of "Lamination" in the PR-C201 Printer Driver.

    ① Select "General" tab, and click "Preferences..."
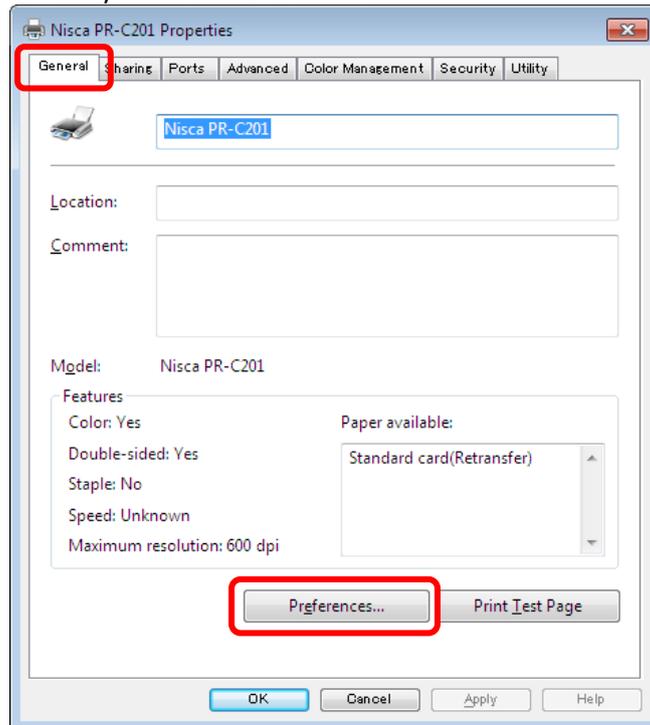
    ② In case of laminating front side, select "Graphics" tab and check "Lamination".
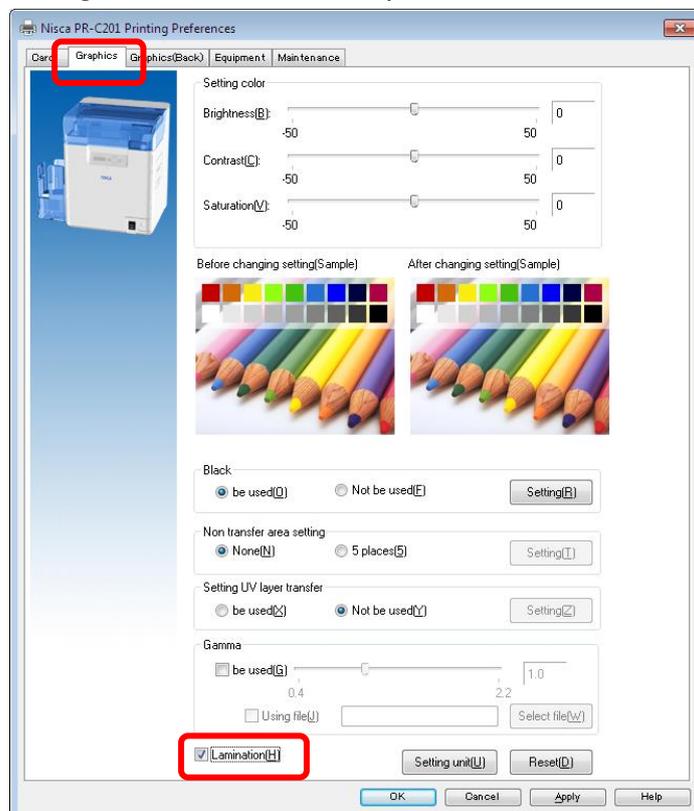
③ In case of laminating back side, Select "Graphics(back)" tab and check "Lamination".
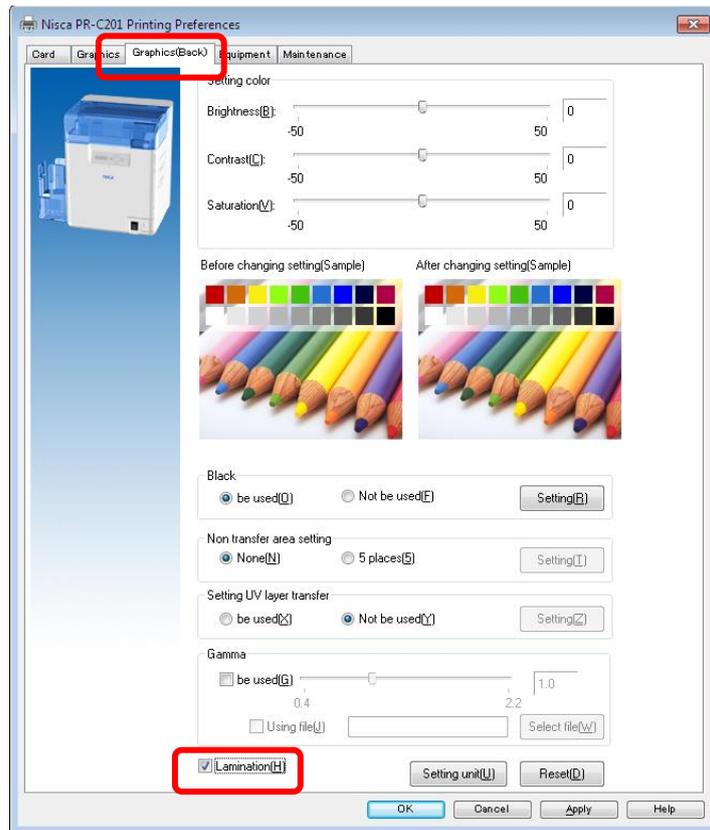
"Graphics(back)" tab will be appeared only when "Duble Side Printing" was selected.
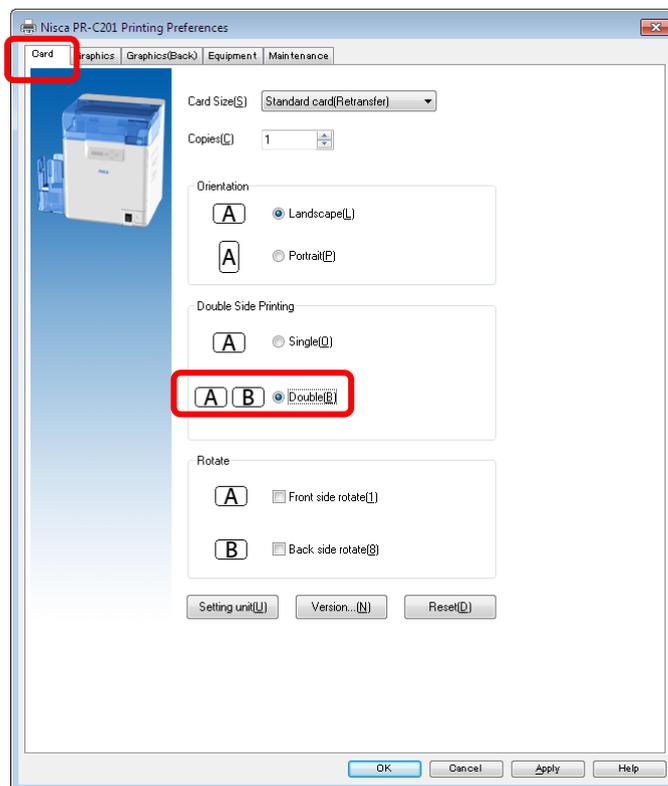
Laminating Action

With checking "Lamination" of the Printer Driver, It processes laminating after having performed each processes of printing, magnetic & IC encoding.

When the Laminator is connected to the Printer, The card is outputted from Card Ejection Slot of the Laminator, regardless of "Normal Exit" setting .

When the Laminator is connected to the Printer, The card is outputted with its last laminating surface upwards, regardless of "Exit Face" setting.

5 Configuration

Menu Route Map (Laminator Setup)

The different setting options configure the laminator for specific requirements. This is carried out via the Printer's control panel

Refer to the PR-C201 Operation Guide for the control of the control panel.

Mode Select [Option Mode]		

Magnetic Encoder SET:≫	
IC R/W 1 SET:≫	
IC R/W 2 SET:≫	
External Box SET:≫	
RS-232C Setup SET:≫	
Laminator Setup SET:≫	

Connection CONNECT	①
Version ***********	②
SerialNumber ***********	③
TagInfo ##	④
Foil Type PATCH	⑤
Temperature 150	⑥
Lamination Speed 6	⑦
Delay (x10) 20	⑧
Cool Down Time 0	⑨
LaminationLength 86	⑩
FoilFurtherMove 14	⑪
Foil Position 0	⑫
Standby OFF	⑬
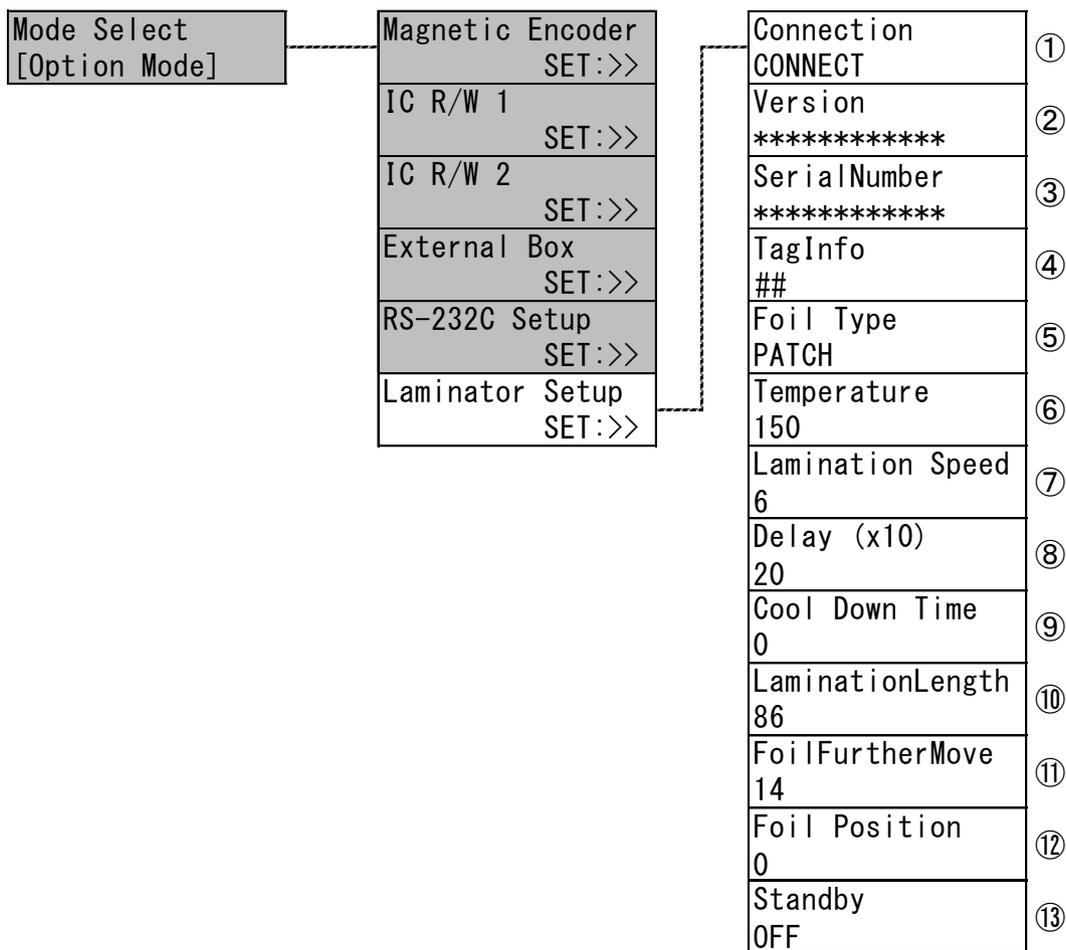
Configuration settings

① **Connection**

Showing the connection of the Laminator.

   Connecting : CONNECT

   Disconnecting : DISCONNECT

② **Version**

Showing the firmware version.

③ **Serial Number**

Showing the serial number of board.

④ **Tag Info**

Showing the 8-digit tag information.

⑤ **Foil Type**

Setting the film type.

Setting range:
  Patch : Patch (always with black marking)
  HOLO(INDEX) : Thin film with black marking
  HOLO(NO INDEX) : Thin film without black marking

The difference between patch and thin film with black marking is another lamination position of the card.

⑥ **Temperature**

Setting the thermal energy for the heated roller for lamination. The correct temperature must be experimentally determined with consideration to the lamination speed, the film and the plastic card. The presetting must be considered a guideline value.

Setting range: 120...150...180 degree C

⑦ **Lamination Speed**

Setting of the transport speed of the document during lamination. The correct speed must be experimentally determined with consideration to the lamination temperature, the laminate film and the plastic card. The presetting must be considered a guideline value.
In order to carry out a test it is possible to start the motor via

Setting range: 4...<u>6.</u>..20 mm/s

⑧ **Delay (x10)**

Setting the waiting time, once the heated roller has lowered and lies on the document. Only after this time does the actual lamination start.

Setting range:

LCD	0	1	⋯	20	⋯	200
Delay (ms)	0	10	⋯	200	⋯	2000

⑨ **Cool Down Time**

After settled cooling time, the status will be set to INPOS. Time is start after card is in park position and ready to eject to the printer.

Setting range: <u>0</u>...60 s

⑩ **Lamination Length**

Setting the lamination range.

Setting range: 80...<u>86</u>...100 mm

⑪ **Foil Further Move**

Setting the foil further move. This parameter is important to separate the foil after lamination from the card.

Setting range: 10...<u>14</u>...30 mm

⑫ Foil Position

With a change in the plastic card intake range, precise placement of the film is carried out.
With an enlarging of the intake range, the lamination of the plastic card starts later. Conversely, with a reduction in the intake range lamination starts earlier.
The direction arrows on the display indicate the direction of travel once lamination starts.

Setting range: -30...0...+30 x 1/10mm

⑬ Standby

If the laminator is not used for 30 minutes it switches to energy-saving mode. The temperature of the heated roller drops in this mode. Press [SET] or sent a Print job to finish. Also a card in entrance position stops standby state.
The energy-saving mode must be active for this option!

Setting range:
  OFF   Standby off
  ON   Standby on

6 Troubleshooting

Type of errors and elimination

If an error occurs then this is signaled by the red ERROR LED whilst the error message is shown on the printer's display. Different error codes indicate the cause of the problem.

"Rectifiable errors" are usually film or transport errors, which are simple to remedy.
In a normal case it is possible to recover the error after eliminating the problem and pressing [SET] key, after which the device is once again ready for operation.

"Non-rectifiable errors" are triggered by defective hardware. If a restart does not solve the problem then service intervention is necessary.

In the event of a "system error" the device must be returned to the factory.

Error messages

Error Massage	Cause	Remedy
Service Call / C0-01	Invalid communication between the Printer and the Laminator.	Contact service!
Service Call / C0-02		
Service Call / C0-03		
Service Call / C0-04		
Service Call / C0-05		
Service Call / C0-06		
Service Call / C0-07		
Service Call / C0-08		
Service Call / C0-09		
Service Call / C0-10		
Service Call / C0-11		
Service Call / C0-12		
Service Call / C0-13		
Service Call / C2-15	Invalid control error.	
Lami Tag Error / C3-53	Invalid tag information with initial acquisition of the film.	Use permissible / approved film material.
Service Call / C8-54	Reader:Communication Error	Error message from tag reader. Indicates signal between reader and tag too weak. Visual inspection!
Service Call / C8-55	Reader transfer error. Contact problems between board and tag reader	Check connection cable (service)
Lami Tag Error / C3-56	No response from tag reader. Tag not seen or not read.	Use permissible / approved film material.
Card Lami Remove / C4-61	Transport of the document failed.	Remove document from the transport tray manually.
Card Jam Lami / C5-62		
Card Jam Lami / C5-63		
Card Jam Lami / C5-64		
Lami Film End / C6-65	Film end	Insert new film
Lami Film Error / C7-66	Synchronization of the film failed.	- Insert film with index marks - Insert film correctly - Configure correct film type
Lami Film Error / C7-67	No film transport.	Check film

Error Massage	Cause	Remedy
`Service Call    / C8-81`	No response from tag reader.	Check tag reader. Contact service!
`Service Call    / C8-82`	Impermissible ADU values	Check temperature sensor. Contact service!
`Service Call    / C8-83`	No temperature increase to record	Check temperature sensor. Contact service
`Service Call    / C8-84`	Heated roller not in limit position	Contact service!
`Service Call    / C8-85`	Circuit breaker for high temperature has triggered.	Contact service!
`Service Call    / C8-86`	Both sensors in transport tray see document	Check transport tray, otherwise Contact service!
`Service Call    / C8-98`	No access to the EEPROM	Contact service!
`Service Call    / C8-99`	Electronic type plate missing	Contact service!

7   Service

Firmware upgrade

For service purposes the laminator is connected with the computer via the serial interface. A standard cable RS-232 SERIAL SUB D9 connector jack is used.

After starting the Windows application *AVR-Bootloader* it is possible to load new firmware. Prior to this the interface agreements as well as the path for the access to the application code (*.HEX) must be stipulated

The download process can be started as follows:

• Switch on laminator
• Press *„Jump to Bootloader then Download*"
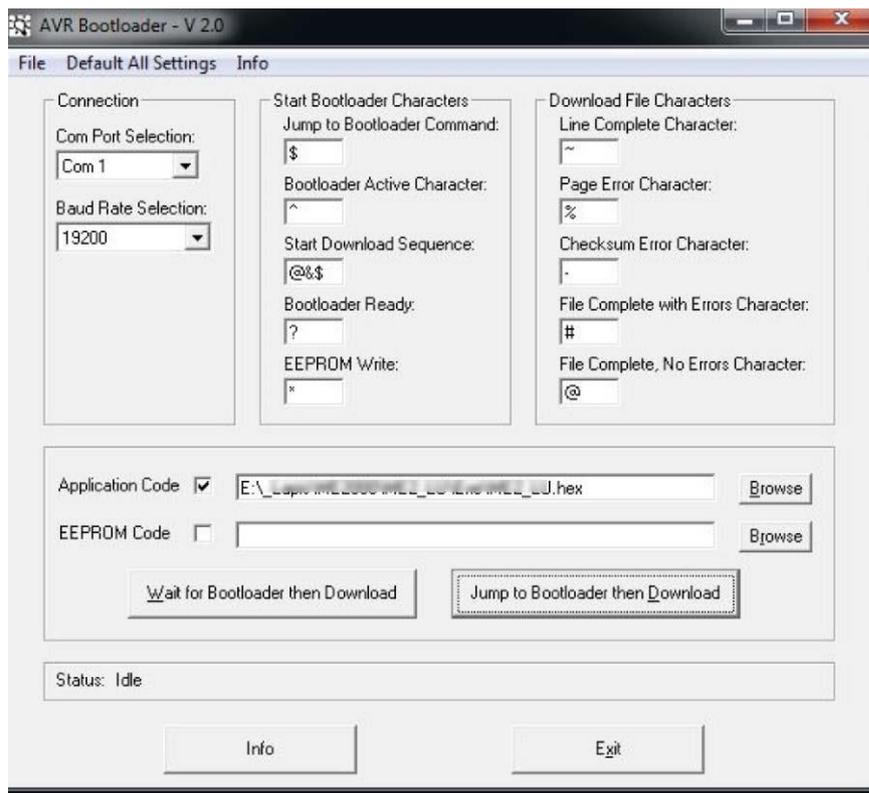
8   Specification

L201 Heat Roller Unit

Lamination Method	Hot Roller, with Temperature sensing at the surface of the Roll
Lamination Area	Full card thin film lamination Patch Lamination 82 x 50 (mm)
Ribbon Dimensions	60 mm in width 250 patches or total of 60 mm outside diameter
Card Dimensions	ISO CR-80 size
Black Marking	Adopted to the existing ribbons
Card Movement	Bidirectional, to allow dual sided lamination (using Flipper inside the printer)
Card Recognition	Detected at Laminator entrance to take over the card coming out of printer
Ribbon Control	Movement and Originality of ribbon is controlled
Speed Range	2 - 18 mm/sec
Temperature Range	100 – 180 ℃
Interface Connection	Serial communication to the printer using the special protocol
Casing	Metal Casing
Hardware Connection	Hanging mechanism to easy hanging to the printer Unit is mechanically adopted to the PR-C201
Power Supply	Input range 100 – 240 v/47 – 63Hz
Output	24v, 3.75A
Environmental	Min/Max operating temperature: 15 – 30 ℃ Humidity: 20 – 65% non-condensing Min/Max storage temperature: -5/70 ℃ Storage humidity : 20 – 70%, non-condensing Operating ventilation: free air