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User manual

UM EN THERMOMARK ROLL

Thermal Transfer Printer for Labels and
Continuous Media

PHŒNIX CONTACT

INSPIRING INNOVATIONS

User manual

Thermal Transfer Printer for Labels and Continuous Media

Designation: UM EN THERMOMARK ROLL

Version: 03

Order No.:   –

This user manual is valid for:

Designation	Order no.
THERMOMARK ROLL	5146477
THERMOMARK ROLL AR	5146749
THERMOMARK ROLL X1	5146723

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Note on the print media

The result of the print depends essentially on the suitable combination of material and print ribbon.

NOTE: Use suitable print media

A low-quality ink ribbon can lead to premature wear on the printhead and result in a poor print image. Use only print media from Phoenix Contact.

You can find suitable print media in the Phoenix Contact catalog.

Change language of Touch Screen

The language of the Touch Screen is set to English by default. To select a different language, proceed as follows:

• Touch ▢ to open the menu.

• Select ⚙ then for the settings.

• With 🌐, you access the regional settings.

• Touch the 💬 symbol.

• Use the horizontal arrows to select your language.

• Confirm your selection with ✓.

• Touch 🚪 to return to the menu.

Technical data

	THERMOMARK ROLL THERMOMARK ROLL AR	THERMOMARK ROLL X1
Resolution	300 dpi x 300 dpi (12 points/mm x 12 points/mm)	300 dpi x 300 dpi (12 points/mm x 12 points/mm)
Print mode	Thermal transfer, thermal direct	Thermal transfer, thermal direct
CPU	32 Bit/400 MHz	32 Bit/400 MHz
Material sensor		
Position	Center	Center
Type	Gap sensor	Gap sensor
Detection	Label gap, black mark and punch-hole mark	Label gap, black mark and punch-hole mark
Print speed	30 mm/s ... 125 mm/s	30 mm/s ... 125 mm/s
Print length	At least 5 mm, maximum 1000 mm	At least 5 mm, maximum 1000 mm
Print width	Maximum 104 mm	Maximum 104 mm
Print medium		
Outside diameter of the roll of labels	Maximum 152 mm	Maximum 205 mm
Internal core diameter	38.1 mm … 76 mm	38.1 mm ... 76 mm
Ink ribbon		
Length	Maximum 300 m	Maximum 300 m
Outside diameter of the ink ribbon reel	Maximum 68 mm	Maximum 68 mm
Internal core diameter	25.4 mm	25.4 mm
Ink side	Outside	Outside
Interfaces	USB 2.0, Full speed slave, Ethernet 10/100Base-T	USB 2.0, Full speed slave, Ethernet 10/100Base-T
	1 x USB master, 500 mA (back side)	1 x USB master, 500 mA (back side)
		2 x USB master, 100 mA (front side)
Display and Operation	Touch display with 160 x 255 pixels, 96.31 mm diagonal	Touch display with 160 x 255 pixels, 96.31 mm diagonal
Voltage	100 V AC ... 240 V AC, 50/60 Hz, PFC	100 V AC ... 240 V AC, 50/60 Hz, PFC
Power	Maximal 100 W	Maximal 100 W
Temperature		
Operation	+5 °C ... +35 °C	+5 °C ... +35 °C
Bearings	0 °C ... +60 °C	0 °C ... +60 °C
Transport	-25 °C ... +60 °C	-25 °C ... +60 °C
Humidity		
Operation	10 % ... 85 %, not condensing	10 % ... 85 %, not condensing
Bearings	20 % ... 80 %, not condensing	20 % ... 80 %, not condensing
Transport	20 % ... 80 %, not condensing	20 % ... 80 %, not condensing

Technical data

	THERMOMARK ROLL THERMOMARK ROLL AR	THERMOMARK ROLL X1
Approvals	5146477: CE, FCC class A, UL, CB	5146723: CE, FCC class A, UL, CB
	5146749: CE, FCC class A, UL, CB, S-Mark	
Dimensions (H x D x W)	189 mm x 320 mm x 253 mm	245 mm x 412 mm x 264 mm
Weight	3.5 kg	5.0 kg
Optional extensions		
Cutter	THERMOMARK ROLL-CUTTER	THERMOMARK ROLL X1-CUTTER
Perforation cutter	THERMOMARK ROLL-CUTTER/P	THERMOMARK ROLL X1-CUTTER/P
Media hub	THERMOMARK ROLL-ERH	–

Table of Contents

1 Introduction

1.1 Product Description

The device is an industrial thermal transfer printer for printing labels and continuous media.

1.2 Instructions

Important information and instructions in this documentation are designated as follows:

Danger!
Draws your attention to an exceptionally grave, impending danger to your health or life.

Warning!
Indicates a hazardous situation that could lead to injuries or material damage.

Attention!
Draws attention to possible dangers, material damage or loss of quality.

Notice!
Gives you tips. They make a working sequence easier or draw attention to important working processes.

Environment!
Gives you tips on protecting the environment.

▶ Handling instruction

▷ Reference to section, position, illustration number or document.

∗ Option (accessories, peripheral equipment, special fittings).

Zeit   Information in the display.

1.3   Intended Use

- The device is manufactured in accordance with the current technological status and the recognized safety rules. However, danger to the life and limb of the user or third parties and/or damage to the device and other tangible assets can arise during use.
- The device may only be used for its intended purpose and if it is in perfect working order, and it must be used with regard to safety and dangers as stated in the operating manual.
- The device printer is intended exclusively for printing suitable materials. Any other use or use going beyond this shall be regarded as improper use. The manufacturer/supplier shall not be liable for damage resulting from unauthorized use; the user shall bear the risk alone.
- Usage for the intended purpose also includes complying with the operating manual, including the manufacturer's maintenance recommendations and specifications.

Notice!
The complete documentation is included in the scope of delivery on DVD, and can also currently be found in the Internet.

1.4   Safety Instructions

- The device is configured for voltages of 100 to 240 V AC. It only has to be plugged into a grounded socket.
- Only connect the device to other devices which have a protective low voltage.
- The device may only be used in a dry environment, do not expose it to moisture (sprays of water, mists, etc.).
- Do not use the device in an explosive atmosphere.
- Do not use the device close to high-voltage power lines.
- If the device is operated with the cover open, ensure that people's clothing, hair, jewelry etc. do not come into contact with the exposed rotating parts.
- The device or parts of it can become hot while printing. Do not touch during operation, and allow to cool down before changing material and before disassembly.
- Risk of crushing when closing the cover. Touch the cover at the outside only. Do not reach into the swivel range of the cover.
- Perform only those actions described in this operating manual.
  Work going beyond this may only be performed by trained personnel or service technicians.
- Unauthorized interference with electronic modules or their software can cause malfunctions.

- Other unauthorized work on or modifications to the device can also endanger operational safety.
- Always have service work done in a qualified workshop, where the personnel have the technical knowledge and tools required to do the necessary work.
- There are various warning stickers on the device. They draw your attention to dangers.
  Warning stickers must therefore not be removed, as then you and other people cannot be aware of dangers and may be injured.
- The maximum sound pressure level is less than 70 dB(A).

> **Danger!**
> **Danger to life and limb from power supply.**
> ▶ **Do not open the device casing.**

1.5 Environment

Obsolete devices contain valuable recyclable materials that should be sent for recycling.

▶ Send to suitable collection points, separately from residual waste.

The modular construction of the printer enables it to be easily disassembled into its component parts.

▶ Send the parts for recycling.

The electronic circuit board of the device is equipped with a lithium battery.

▶ Take old batteries to collection boxes in shops or public waste disposal centers..
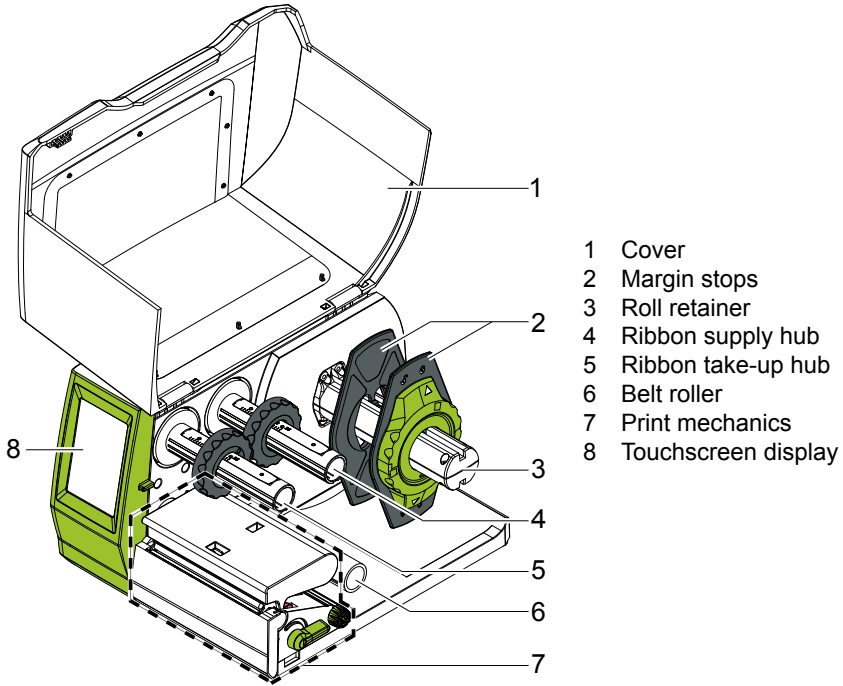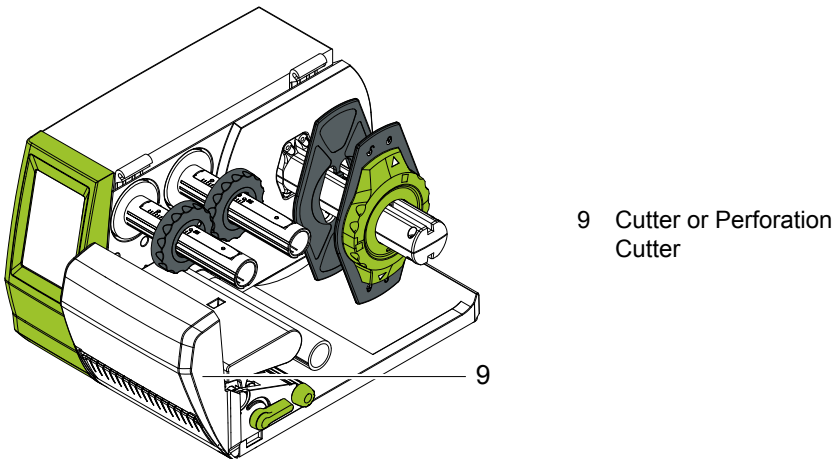
2.1 Device Overview

1 Cover
2 Margin stops
3 Roll retainer
4 Ribbon supply hub
5 Ribbon take-up hub
6 Belt roller
7 Print mechanics
8 Touchscreen display

Fig. 1   THERMOMARK ROLL with Tear-off Plate

9 Cutter or Perforation
  Cutter

Fig. 2   THERMOMARK ROLL with Cutter or Perforation Cutter

1 Cover
2 Margin stops
3 Roll retainer
4 Ribbon supply hub
5 Ribbon take-up hub
6 Belt roller
7 Print mechanics
8 Touchscreen display
9 2 USB master ports
   (I_{max} = 100 mA)
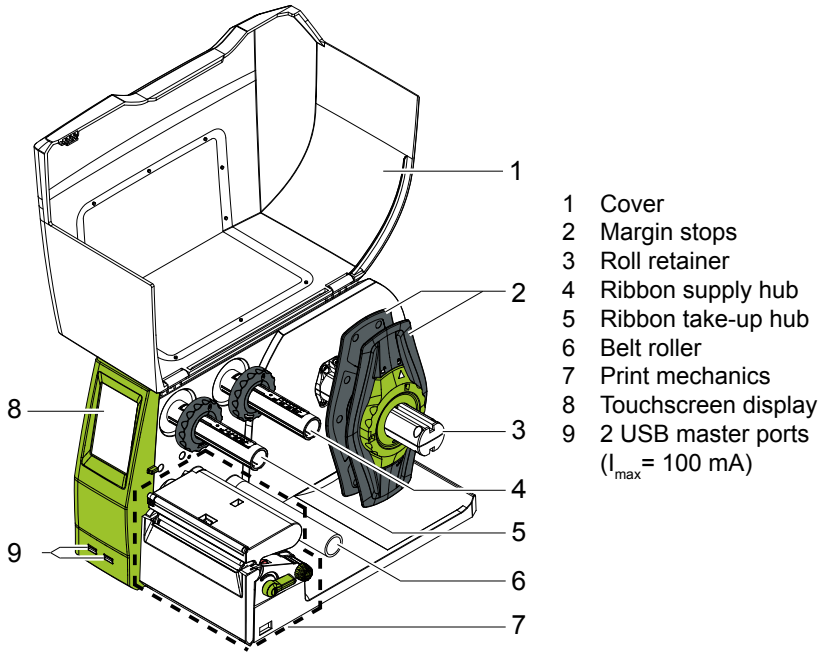
Fig. 3   THERMOMARK ROLL X1 with Tear-off Plate

10 Cutter or Perforation
   Cutter
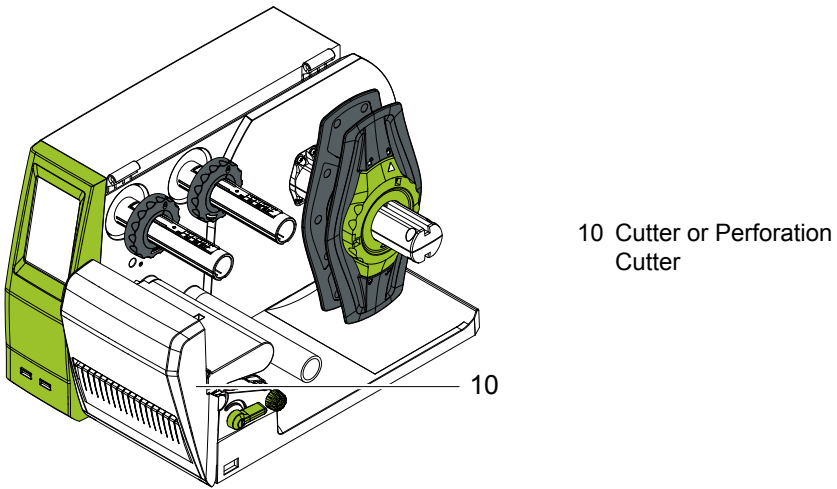
Fig. 4   THERMOMARK ROLL X1 with Cutter or Perforation Cutter

11 Label sensor
12 Printhead retainer with printhead
13 Print roller
14 Guides
15 Knob for adjusting the guides
16 Lever for locking the printhead
17 Tear-off plate
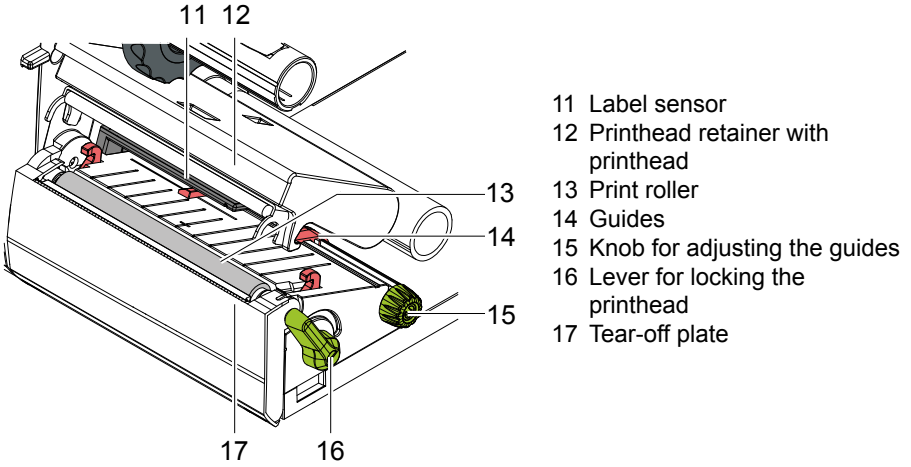
Fig. 5   Print Mechanics

2.2   Unpacking and Setting-up the Printer

▶ Lift the label printer out of the box and set it up on a level surface.

▶ Check label printer for damage which may have occurred during transport.

▶ Check delivery for completeness.

Contents of Delivery:

• Label Printer
• Power Cable Type E+F
• USB Cable
• Operator's Manual
• DVD with application software CLIP PROJECT, driver and documentation
• Transfer ribbon
• Continuous labels on roll

Notice!
Please keep the original packaging in case the printer must be returned.

Notice!
When transporting the printer remove the transfer ribbon and media.

Attention!
The device and printing materials will be damaged by moisture and wetness.

▶ **Set up label printers only in dry locations protected from splash water.**

2.3   Connecting the Device

1 Power switch
2 USB master ports for
  keyboard, scanner, or
  memory stick
3 USB full-speed slave port
4 Ethernet 10/100 Base-T
5 Power connection jack
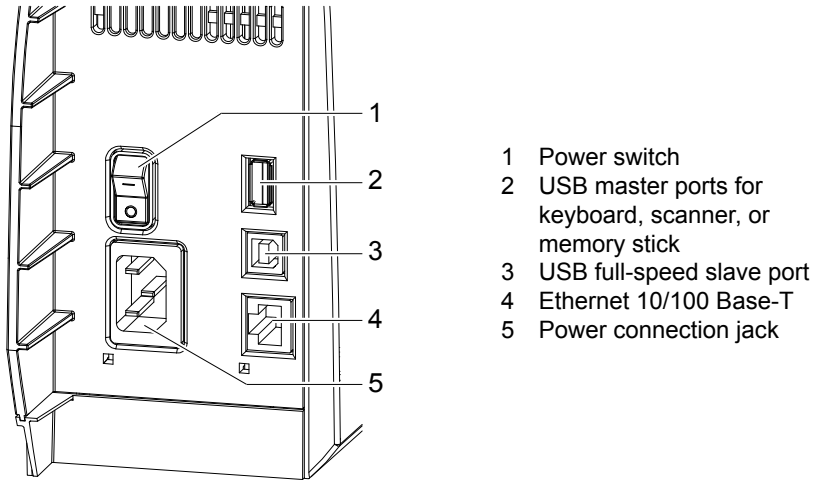
Fig. 6   Connections

2.3.1 Connecting to the Power Supply

The printer is equipped with a wide area power unit for a supply voltage of
100 V to 240 V.

1. Check that the device is switched off.
2. Plug the power cable into the power connection jack (5).
3. Plug the power cable into a grounded socket.

2.3.2 Connecting to a Computer via USB

> ⚠ **Attention!**
> **Inadequate or no grounding can cause malfunctions during operations.**
> ▶ **Ensure that all computers and cables connected to the label printer are grounded.**

In order to connect the printer to a USB interface a printer driver must be installed. The adequate driver for your device can be found on the DVD included in the contents of delivery or on the internet at www.phoenixcontact.net/catalog.

▶ Switch on computer.

▶ Terminate all running tasks.

▶ Switch on THERMOMARK ROLL.

▶ Connect computer with THERMOMARK ROLL using the included USB cable.

▶ Insert DVD with the driver software into the DVD drive.

▶ The Windows installation wizard is started automatically.

▶ Follow the instructions on the screen.

▶ When the error message "Windows logo test failed" appears, still continue the installation.

After a successful installation an icon for the THERMOMARK ROLL appears in the windows system directory "Printer".

CLIP PROJECT

Afterwards, configure the THERMOMARK ROLL in the planning and marking software CLIP PROJECT in the module "Marking".

▶ Add the THERMOMARK ROLL as a new printer in CLIP PROJECT "Marking" under „File... configure output device...".

2.3.3 Connecting to a Network via Ethernet

The integrated Ethernet interface allows the operation of the printer in a network. To connect the printer to a network outlet a patch cable with a RJ45 plug for 10Base or 100Base-T is necessary.

> ⚠ **Attention!**
> **When connecting the printer to the network a shielded cable must necessarily be used.**

▶ Connect computer to a printer by a suitable cable.

2.4   Switching on the Device

When all connections have been made:

▶ Switch the printer on at the power switch (1).
The printer performs a system test, and then shows the system status READY in the touch-screen display.

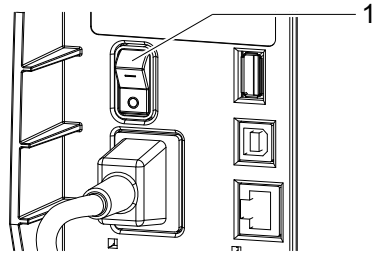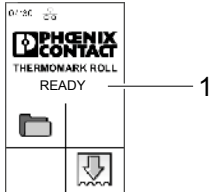If an error occurs during the system test, the symbol ⚠ , Critical fault and type of error are displayed.

Fig. 7   Power Switch

3.1 Structure of the Touchscreen Display

The touchscreen display (1) indicates the current status of the printer and the print job, indicates faults and shows the printer settings in the menu.

By selecting the buttons on the touchscreen display (1) settings can be made.

Fig. 8 Touchscreen Display

3.2 Operating the Touchscreen Display

The touchscreen display is operated directly by touch:

- To open a menu or select a menu item lightly touch the corresponding symbol.
- To scroll in lists slide finger up or down on the display.

3.3 Symbols on the Start Display

Symbol	Status	Function
	Ready	To offline menu
	Error	
	Ready	Feeds a blank label
	Ready	After the end of a print job, reprint the last label
	Printing label	Interrupt print job, printer goes into "Pause" state
	Pause	Continue the print job, printer goes into "Printing label" state
	Error	
	Ready	Delete internal memory, the last label can no longer be reprinted.
	Printing label	Cancel current print job and delete all print jobs.
	Pause	
	Error	

Table 1 Symbols on the Start Display

3.4   Printer States

State	Display	Description
Ready	Ready and the symbols 🗀 and ⬇	The printer is in the ready state and can receive data or print labels.
Ready (after first print)	Ready and the symbols 🗀, ⬇ and ↺	The printer is in the ready state and can receive data.
Printing Label	Label description and the number of the printed label in the print job and the symbols ⏸ and ✕	The printer is currently processing an active print job. Data can be transmitted for a new print job. The new print job will start when the previous one has finished.
Pause	Pause and the symbol ▶	The printing process has been interrupted by the operator.
Error	⚠ Error and and the type of error, the label description and the number of labels still to be printed	An error has occurred.
Critical error	⚠ Critical fault and the type of error Display flashes red	An error occurs during the system test. ▶ Switch the printer off and then on again at the power switch. ▶ Call Service if the fault occurs persistently.
Power Save Mode	⏻	If the printer is not used for a lengthy period, it automatically switches to power save mode. ▶ To exit power save mode: Touch touchscreen display.

Table 2   Printer States

3.5 Configure Ethernet Interface

The Ethernet interface can be configured under menu item **Setup > Interfaces**.

The following parameters are necessary for operating the printer in a network. Contact your network administrator if required.

- IP address
- Subnet mask
- if necessary gateway

Alternatively, the Ethernet configuration is also available via DHCP server. In this case, make sure that the transmitted configuration is always the same.

Configure Ethernet interface at the printer

▶ Select ▭ .

▶ Select **Setup**.

▶ Select **Interfaces**.

▶ Select **Ethernet**.

▶ Select setting options.

▶ Select desired setting with ▶ ◀.

▶ Confirm selection with ✔ or cancel selection with ✖ .

▶ Return to start screen with ▯ .

3.6 Perform Test Print

▶ Select ▭ .

▶ Select **Test**.

▶ Select **EML**.

▶ Test print starts.

4.1 Loading Continuous Media from Roll
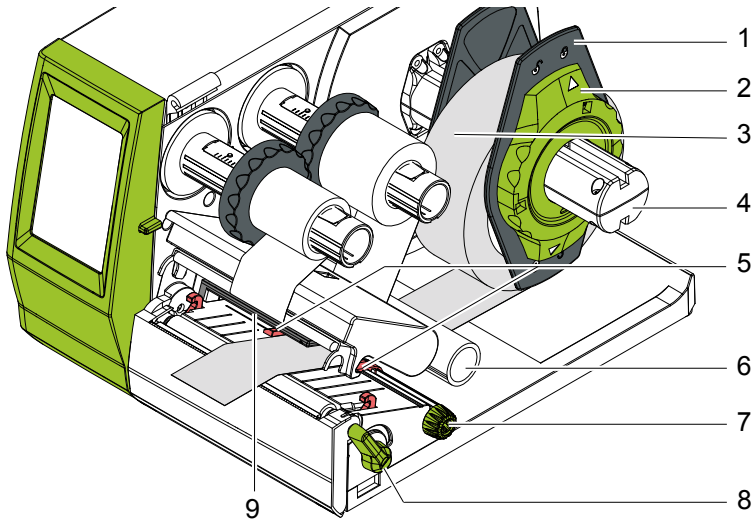

Fig. 9   Loading Continuous Media from Roll

1. Turn ring (2) counterclockwise, so that the arrows points to the symbol ⌒
   and thus release the margin stop (1) from the roll retainer (4).
2. Load label roll (3) on the roll retainer (4) in such a way that the printing
   side of the labels is visible from above.
3. Re-mount the margin stop (1) and push against the label roll as far as
   possible.
4. Turn ring (2) clockwise, so that the arrow points to the symbol ⌒ , and
   thus fix the margin stop(1) on the roll retainer (4).
5. Turn lever (8) counterclockwise to open printhead.
6. If the printer is equipped with a cutter or perforation cutter, fold it down.
7. Position guides (5) by turning the knob (7) so that they are several milli-
   meters wider than the material.
8. Position material below the belt roller (6) and guide it through the print unit.

> **!** **Attention!**
> ► **Guide material through the print unit below the label sensor (9).**

9. Move guides (3) closely to the edges of the material without clamping the
   material.
10. If the printer is equipped with a cutter/perforation cutter, guide material
    through the cutter and fold cutter back to the printing unit.
11. Press printhead retainer down and turn lever (8) clockwise to lock the
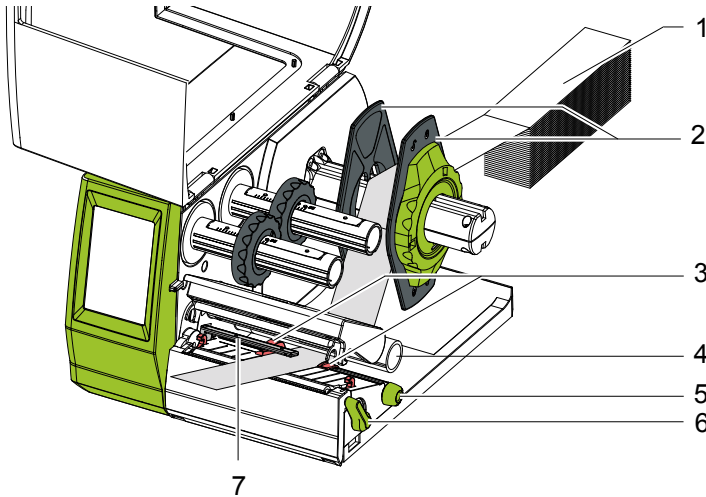   printhead.

4.2   Loading Fanfold Labels

Fig. 10   Loading Fanfold Labels

1. Position label stack (1) behind the printer.
2. Guide material below the roll retainer (2) to the printing unit. Ensure that the printing side of the labels is visible from above.
3. Turn lever (6) counterclockwise to open printhead.
4. If the printer is equipped with a cutter or perforation cutter, fold it down.
5. Position guides (3) by turning the knob (5) so that they are several millimeters wider than the material.
6. Position material below the belt roller (4) and guide it through the print unit.

!   **Attention!**
▶ **Guide material through the print unit below the label sensor (7).**

7. Move guides (3) closely to the edges of the material without clamping the material.
8. If the printer is equipped with a cutter/perforation cutter, guide material through the cutter and fold cutter back to the printing unit.
9. Press printhead retainer down and turn lever (6) clockwise to lock the printhead.
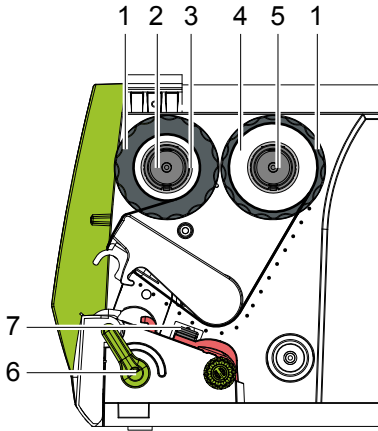
4.3   Loading Transfer Ribbon
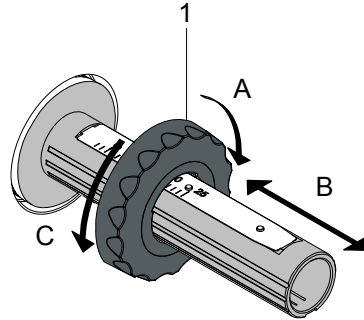

Fig. 11   Transfer Ribbon Feed Path

Fig. 12   Guide Adjustment

> **Notice!**
> **With direct thermal printing, do not load a transfer ribbon; if one has already been loaded, remove it.**

1. Clean the printhead before loading the transfer ribbon ($\triangleright$ 7.2 on page 28).
2. Turn lever (6) counterclockwise to open the printhead.
3. Set guide (1) on both hubs to the correct transfer ribbon width (Fig. 12):
   - Hold hub and unlock guide (1) by turning it in direction A.
   - Slide guide in direction B and adjust guide to ribbon width using the scale.
   - Hold hub and lock guide by turning it in direction C.
4. Load transfer ribbon (4) on the hub (5) until it reaches the guide in a way that the color coating of the ribbon faces the opposite side of the printhead after being loaded.

> **Notice!**
> **To wind the ribbon a ribbon core (3) is needed that must be at least equal in width to the supply ribbon.**
>
> ▶ **When changing the transfer ribbon use the empty supply ribbon core for winding the next ribbon.**

5. Adjust position of the guide on the take-up hub to the width of the ribbon core (3) and push ribbon core on the take-up hub (2).
6. Guide transfer ribbon though the printing unit as shown in Fig. 9.

> **Attention!**
> ▶ **Guide transfer ribbon over the label sensor (7).**

7. Secure starting end of the transfer ribbon to the ribbon core (3) using adhesive tape. Ensure counterclockwise rotation direction of the transfer ribbon take-up hub.

8. Turn transfer ribbon take-up hub (2) counterclockwise to smooth out the feed path of the transfer ribbon.

9. Press printhead down and turn lever (6) clockwise to lock printhead.

5.1 Cutter/Perforation Cutter

As an option a cutter (THERMOMARK ROLL-CUTTER, Art.-No.: 5146422, THERMOMARK ROLL-CUTTER X1, Art.-No.: 5146765), with which labels can be cut automatically is available. This cutter is also suitable for cutting endless labels.

For marking sleeves a perforation cutter (THERMOMARK ROLL-CUTTER/P, Art.-No.: 5146435, THERMOMARK ROLL-CUTTER/P X1, Art.-No.: 5146766) is available.
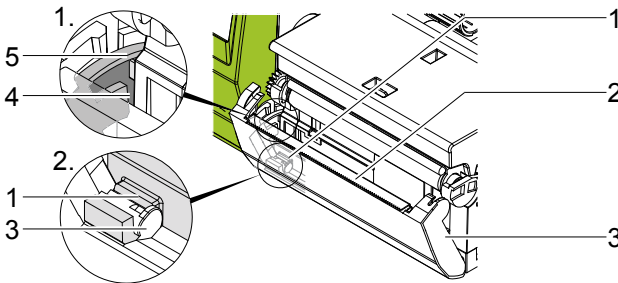
Dismount Tear-Off Plate

Fig. 13   Dismount tear-off plate

1. Fold down cover (3) with tear-off plate (2) until the slot (4) at the latch-hook (5) is visible.
2. Lift cover (3) from the retainer (1).
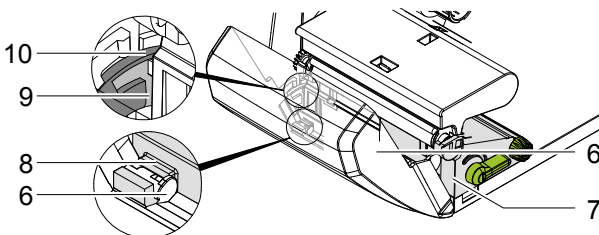
Mount Cutter/Perforation Cutter

Fig. 14   Mount cutter/perforation cutter

3. First, put the latch-hook (10) of the cutter with the slot (9) into the guiding of the retainer (7).
4. Push cutter (6) down into the retainers (8) .
5. Fold up cutter (6) until it snaps in at both sides of the retainer (7).