Plexo!® 653 & 453 User Guide

Plexo!® 653

6” print width (163mm)
300 dpi

Plexo!® 453

4” print width (106mm)
300 dpi

Part Number: 22834594-EN-E

QUICKLABEL® SYSTEMS

The Labels You Want When You Need Them®

Plexo! 453 / Plexo! 653 User Guide

Part Number 22834594-EN-E
Version 1.2
1/2015

QuickLabel® Systems
an Astro-Med, Inc. Product Group

World Headquarters
600 East Greenwich Ave., West Warwick, RI 02893
Tel: (877) 757-7978 Fax: (401) 822-2430
E-mail: info@QuickLabel.com

www.QuickLabel.com

Technical Support
Tel: (877) 757-7310
E-mail: support@QuickLabel.com
www.QuickLabel.com/support/

Trademarks

Plexo!® and QuickLabel® are registered trademarks of Astro-Med, Inc.

NiceLabel ® is a registered trademark of Euro Plus d.o.o.

Plexo! Printer Limited Lifetime Warranty

QuickLabel Systems, An Astro-Med Inc. Product Group, warrants this product against defects in materials or workmanship for the lifetime of the product. This warranty excludes printhead and print platen, which are separately warranted. This warranty also excludes any cutter blade that may be incorporated in a cutter accessory installed in, integrated with or attached to the Plexo! printer. The product lifetime is defined as the period during which the fair market value of the product exceeds the cost to repair the product, as determined by the condition of the product at the time the defect is reported to QuickLabel. If during the lifetime of the product the customer discovers a defect, this defect must be reported promptly to QuickLabel. QuickLabel will, at its option, repair the printer or repair or replace its defective part(s) at no additional charge.

If QuickLabel determines that repair at QuickLabel's factory is required, the customer may be asked to return the printer to QuickLabel at the customer's expense. QuickLabel is not responsible for damage during shipment. In the event that a repair can be performed by the customer through parts exchange, repair parts or replacement parts will be shipped to the customer via ground freight. Repair parts and replacement parts will be either reconditioned or new. All replaced parts become the property of QuickLabel. Travel, freight and other expenses related to warranty repairs are not covered.

The Plexo! warranty excludes the cost to repair damage to the product caused by labels, tags or thermal transfer ribbons that are not compatible with the product.

This warranty is void if the product has been damaged by accident, abuse, neglect or misapplication, or if the product has been improperly installed or maintained, or if the product has been used outside of its environmental specifications, or if the product has been modified without the express written permission of QuickLabel.

QuickLabel makes no warranty, either express or implied, with respect to this product's merchantability or fitness for a particular purpose. In no event shall QuickLabel be held liable for any direct, indirect, special, incidental, or consequential damages, whether based on a contract, tort, or any other legal theory and whether advised of the possibility of such damages.

Plexo! Printhead and Platen Warranty

QuickLabel Systems warrants the printhead and the platen from the date of purchase for a period of 90 days or for 1 million inches of thermal transfer ribbon, whichever comes first, contingent upon the use of QuickLabel Systems thermal transfer ribbon. QuickLabel Systems printheads are calibrated for use with QuickLabel Systems thermal transfer ribbon and perform optimally only when used with this ribbon. This specific Printhead and Platen Warranty does not apply to printheads damaged by accident, abuse, neglect, misapplication or the like.

Obtaining Service

To obtain warranted service, please contact QuickLabel Technical Support through one of the Factory Sales and Service Centers listed on the next page.

Contact Information for Factory Sales and Service

QuickLabel USA and World Headquarters
600 East Greenwich Avenue
West Warwick, RI 02893 USA
Toll Free: (877) 757-7978
Toll-Free Sales: (877) 757-7978
Toll Free Technical Support: (877) 757-7310
Tel: (401) 828-4000
Fax: (401) 822-2430
Web Site: www.QuickLabel.com
Sales E-mail: info@QuickLabel.com
Technical Support E-mail: support@QuickLabel.com

QuickLabel Canada
#111 - 3555 Isabelle, Borssard, QC J4Y 2R2 Canada
Tel: (800) 565-2216
Fax: (450) 619-9976
Web Site: www.QuickLabel.ca
Sales E-mail: info@QuickLabel.ca
Technical Support E-mail: support@QuickLabel.ca

QuickLabel Deutschland
Astro-Med GmbH, Senefelderstraße 1/ T6 D-63110 Rodgau
Tel. +49 (0) 6106-28368-20
Fax: +49 (0) 6106-771121
Web Site: www.QuickLabel.de
Sales E-mail: info@QuickLabel.de
Technical Support E-mail: support@QuickLabel.de

QuickLabel France
Astro-Med SNC, Parc d'Activités de Pissaloup, 1 rue Edouard Branly, 78190 Trappes
Tel: 33 1 34 82 09 00
Fax: 33 1 34 82 05 71
Web Site: www.QuickLabel.fr
Sales E-mail: info@QuickLabel.fr
Technical Support E-mail:support@QuickLabel.fr

QuickLabel United Kingdom
Astro-Med House, 11 Whittle Parkway
Slough, Berkshire SL1 6DQ
Tel: 01628 668836
Fax: 01628 664994
Web Site: www.QuickLabel.co.uk
Sales E-mail: info@QuickLabel.co.uk
Technical Support E-mail:support@QuickLabel.co.uk

Ownership Information

Congratulations and thank you for your business. Your purchase of a QuickLabel digital label printer is an investment in production flexibility and packaging efficiency.

Please use the spaces below to list the model number and serial number of your product. If, for any reason, it should be necessary for you to contact us regarding your purchase, please refer to:

Model Number:

Serial Number:

FCC Compliance Statement

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

UL Compliance

Plexo! 453 and Plexo! 653 have been investigated by Underwriters Laboratories Inc.® (UL) or any authorized licensee of UL in accordance with the Standard(s) indicated in the Declaration of Conformity.

RoHS Compliance

We declare that the Plexo! 453 and Plexo! 653 comply with The European RoHS Directive 2002/95/EC (Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment).

This declaration is based on information provided by suppliers based on reasonable inquiry. This declaration is rendered invalid if the product is altered by someone other than Astro-Med, Inc.

Declaration of Conformity
Declaration de Conformité
Ubereinstimmungserklärung
Dichiarazione di Conformità

ID	DoC-22834594
Manufacturer's name and address Nom et adresse du fabricant Hersteller Nome del costruttore	Astro-Med, Inc. 600 East Greenwich Avenue West Warwick, RI 02893 USA
Model No. Modele No. Model Nr. Modello No.	Plexo! 453 Plexo! 653
Standards to which conformity is declared Standards auquel la conformité appartient Normen für welche Übereinstimmung erklärt wird Norme per le quali si dichiara la conformità	EN 60950-1:2006+A11:2009 EN 61558-1:2005 EN 55022:2006 EN 55024:1998+A1:2001+A2:2003 EN 61000-3-2:2006 EN 61000-3-3:2008
Application of Council Directives Application des Decisions du Conseil Anwendbar fur die Richtlinien Applicazione delle Direttive del Comitato	2006/95/EC 2004/108/EC

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive and Standard.

Je, Soussigné, déclare que l'équipment spécifié ci-dessus est en conformité avec la directive et le standard ci-dessus.

Ich, der unterzeichnende erkläre hiermit, daß das oben beschriebene Gerät den vorgenannten Richtlinien und Normen entspricht.

Il sottoscritto dichiara che l'apparecchio sopra specificato è conforme alle Direttive e Norme sopra specificate.

Steven Holbrook Quality Assurance Manager Astro-Med, Inc.	Steven G. Holbrook Date of issue: 6/9/2011 Place of issue: West Warwick, RI

European Contact: Your local Astro-Med, Inc. Sales and Service Office.

FRANCE - Astro-Med SNC, Parc d'Activities de Pissaloup, 1, rue Edouard Branly, 78190 Trappes (Tel. 331-3482-0900 Fax: 331-3482-0571 Email:AstroMedFrance@astromed.com)

GERMANY - Astro-Med GmbH, Senefelderstrasse 1/T6, D-63110 Rodgau (Tel. +49(0)6106-28368-0 Fax: 49-6106-771121 Email: AstroMedDeutschland@astromed.com)

UNITED KINGDOM - Astro-Med, Inc., Astro-Med House, 11 Whittle Parkway, Slough, SL1 6DQ. (Tel. 44-1628-668836 Fax: 44-1628-664994 Email: AstroMedUK@astromed.com)

Contents

Chapter: 1 Introduction . . . 1
Instructions . . . 1
Intended Use . . . 1
Safety Instructions . . . 1
Environment . . . 2

Chapter: 2 Installation . . . 3
Device Overview . . . 3
Overview . . . 3
Print mechanics - upper print unit for printing the main color . . . 4
Print mechanics - lower print unit for printing the secondary color . . . 5
Connections . . . 6
Unpacking and Setting-up the Printer . . . 6
Connecting to the Power Supply . . . 7
Connecting the Label Printer via Ethernet Interface . . . 7
Print Services Raw-IP and LPD in MS Windows . . . 8
Adjusting Windows Printer Setting . . . 8
Connecting the Label Printer via USB Interface . . . 8
Switching on the Device . . . 9

Chapter: 3 Control Panel . . . 11
Structure of the Control Panel . . . 11
Symbol Displays . . . 11
Printer States . . . 12
Key Functions . . . 14

Chapter: 4 Configuration . . . 17
Configuration via Operating Panel . . . 17
Local Settings . . . 17
Machine Parameters . . . 18
Print Parameters . . . 20
Interfaces . . . 23
Status Line . . . 25
Security . . . 26
Configuration via the printer website . . . 27
Calling up the printer website . . . 27
Description of the printer website . . . 27
Status tab . . . 28
Setup tab . . . 30
System messages tab . . . 32
Printer status line tab . . . 34
Fonts tab . . . 34
Devices tab . . . 35

Chapter: 5 Offline Menu . . . 37
Structure of the Offline Menu . . . 37

Navigating in the Offline Menu 40

Chapter: 6 Loading Material 41
Loading Labels from Roll 41
Positioning the Label Roll on the Roll Retainer 41
Inserting Labels into the Print Mechanics 42
Setting the Label Sensor 42
Setting the Head Locking Systems 43
Loading Transfer Ribbon 44
Setting the Feed Path of the Transfer Ribbon 45

Chapter: 7 Printing Operation 47
Printhead Protection 47
Synchronization in Cut Mode 47
Designing the Print Image 47
Suppressing Backfeed 48
Ribbon Saving 48
Avoiding Loss of Material 48
Optimization of the Data Transfer 49
Avoiding Loss of Data 49
Pause on Media Low 49

Chapter: 8 Accessories 51
Cutter 51
External keyboard 51
Connecting external keyboard 51
Special key functions 51
Key assignment and special characters 52
WLAN-Card 54
Function 54
Mounting 54
Setup 55
External Operating Panel 56
Delivery Contents 56
Function 56
Mounting 57

Chapter: 9 CU4/CU6 Cutter Accessory 59
Cutter 59
Perf/Cutter 59
Safety Instructions 59
Mounting the Tear-off Plate / Dispense Plate 60
Mounting the Cutter Tray 61
Mounting the Cutter 61
Printer Configuration 62
Cut Position 62
Label Sensor 63
Backfeed 63
Media Loading 63
Operation 63
Standard Operation 63

Lubrication . . . 64
Cleaning . . . 64
Changing the Blades . . . 65
Adjusting the Circular Blade and the Clock Wheel . . . 67

Chapter: 10 Cleaning . . . 69
Cleaning Information . . . 69
Cleaning the Print Rollers . . . 69
Cleaning the Printheads . . . 69

Chapter: 11 Test Functions . . . 71
Overview . . . 71
Short status . . . 71
Status Print . . . 72
Font List . . . 74
Device List . . . 75
ASCII Dump Mode . . . 77
Test grid . . . 78
Label profile . . . 79

Chapter: 12 Service Functions . . . 81
Performing firmware update . . . 81
Copying New Firmware via Interface . . . 81
Copying New Firmware from Memory Medium . . . 81
Error Messages during the Firmware Update . . . 82
Save settings . . . 82
Load settings . . . 83

Chapter: 13 FTP Printer Management . . . 85
FTP logon . . . 85
Directory Structure of the FTP Server . . . 86
FTP Firmware Update . . . 87

Chapter: 14 Memory cards . . . 89
Suitable Memory Media . . . 89
Installation . . . 89
Formatting . . . 89
Directory Structure . . . 90
Writing . . . 90
Memory Media Functions in the Offline Menu . . . 91
Label from Card . . . 91
Print Directory . . . 92
Copy Memory Card . . . 92
Format Card . . . 93
Printing file contents . . . 94

Chapter: 15 Fault Correction . . . 95
Types of Errors . . . 95
Problem Solution . . . 96
Error Messages and Fault Correction . . . 97

Chapter: 16 **Media** **103**
Media Dimensions 103
Device Dimensions 104
Reflex Mark Dimensions 106
Cut-out Mark Dimensions 107

Introduction

Instructions

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

Warning: *Draws your attention to an exceptionally grave, impending danger to your health or life.*

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

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

Note: *Gives you tips. They make a working sequence easier or draw attention to important working processes.*

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 that have been approved by the manufacturer. 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.

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.
- Switch off all affected devices (computer, printer, accessories) before connecting or disconnecting.
- 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, especially the printheads 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 LpA is less than 70 dB(A).

Warning: *Danger to life and limb from power supply. Do not open the device casing.*

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.

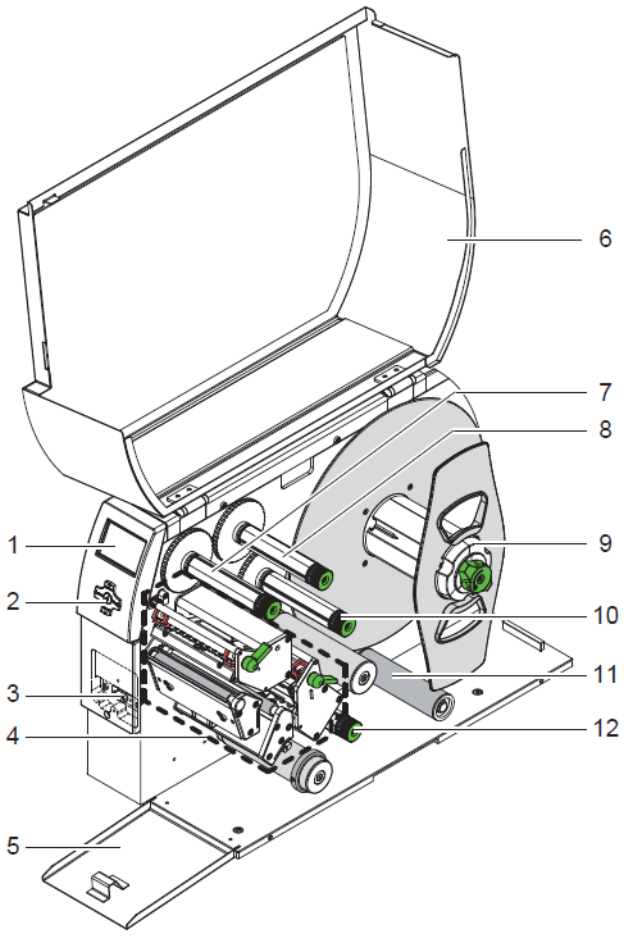
The electronic circuit board of the device is equipped with a lithium battery.

- Take old batteries to collection boxes in shops or public waste disposal centers.

2 Installation

Device Overview

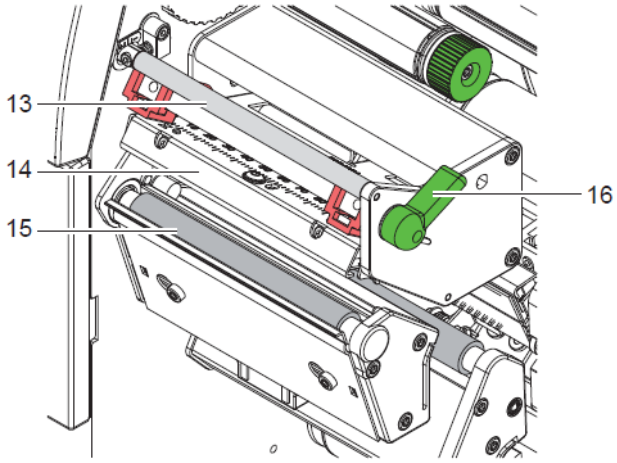
Overview



#	Description	#	Description
1	Display	7	Upper ribbon take-up hub
2	Navigator pad	8	Upper ribbon supply hub
3	Peripheral port (covered)	9	Roll retainer
4	Print mechanics	10	Lower ribbon take-up hub
5	Flap	11	Swing arm with guide roller

#	Description	#	Description
6	Cover	12	Lower ribbon supply hub

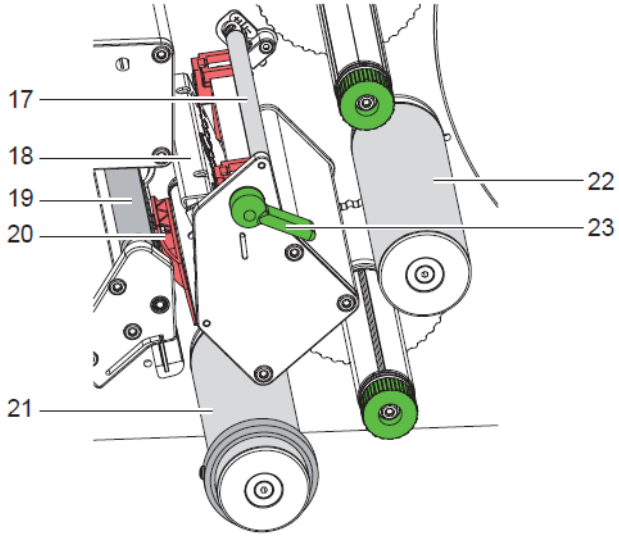
Print mechanics - upper print unit for printing the main color



#	Description	#	Description
13	Upper ribbon deflection	15	Upper print roller
14	Printhead retainer with upper printhead	16	Upper printhead locking lever

Note: *When using NiceLabel software, print units are referred to as Ribbon 1 and Ribbon 2. The station closest to the media unwind is Ribbon 1, regardless of printing side top/bottom.*

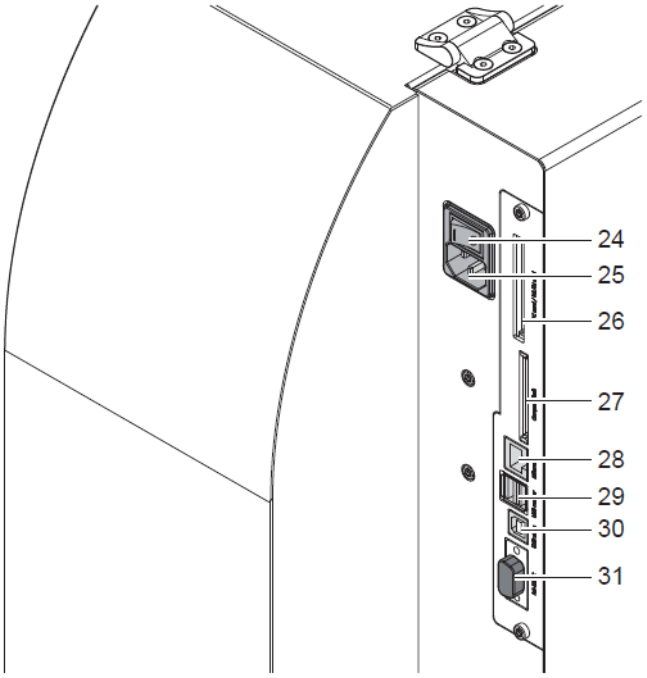
Print mechanics - lower print unit for printing the secondary color



#	Description	#	Description
17	Lower ribbon deflection	21	Guide roller with guide ring
18	Printhead retainer with lower printhead	22	Guide roller
19	Lower print roller	23	Lower printhead locking lever
20	Label sensor		

Note: *When using NiceLabel software, print units are referred to as Ribbon 1 and Ribbon 2. The station closest to the media unwind is Ribbon 1, regardless of printing side top/bottom.*

Connections



#	Description	#	Description
24	Power switch	28	Ethernet 10/100 Base-T
25	Power connection jack	29	2 USB master ports for keyboard, scanner or service key
26	Slot for PC Card Type II	30	USB high-speed slave port
27	Slot for CompactFlash memory card	31	Serial RS-232 C port (not to be used)

Unpacking and Setting-up the Printer

- Lift the printer out of the box via the straps.
- Check printer for damage which may have occurred during transport.
- Set up printer on a level surface.
- Remove foam transportation safeguards near the printhead.
- Check delivery for completeness.

Contents of delivery:

- Printer

- Power cable
- USB cable
- Documentation
- Documentation on CD-ROM

Note: *Please keep the original packaging in case the printer must be returned.*

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

- Set up transfer printers only in dry locations protected from splash water.

Connecting to the Power Supply

The standard available interfaces and connectors are shown in Connections.

The printer is equipped with a wide area power unit. The device can be operated with a supply voltage of 230 V~/50 Hz or 115 V~/60 Hz without adjustment.

1) Check that the device is switched off.
2) Plug the power cable into the power connection socket (25).
3) Plug the power cable into a grounded socket.

Connecting the Label Printer via Ethernet Interface

To connect the label printer to a network jack, a patch cable with an RJ45 plug for 10 Base T or 100 Base T is required. For direct connection of the printer to the Ethernet card of a local computer, use an appropriate crossover cable.

Note: *A shielded cable must be used to connect the printer to the network.*

1. Connect computer and label printer with a suitable cable.
2. Make basic settings for operation of the Ethernet interface. *See "Interfaces" on page 23.*
3. Call up the printer website. *See "Calling up the printer website" on page 27.*
4. Open the "Setup" tab on the printer website.
5. Set the parameters. *See "Setup tab" on page 30.*
6. Click Set on the "Setup" tab
7. Enter PIN and click Confirm.
8. Set up print service if necessary. *See "Print Services Raw-IP and LPD in MS Windows" on page 8.*
9. Adjust Windows printer setting. *See "Adjusting Windows Printer Setting" on page 8.*

Note: *Do not change the settings of the "IP" and "Gateway" on the printer website, as otherwise the connection to the printer may be lost.*

Print Services Raw-IP and LPD in MS Windows

The print services Raw-IP and LPD are not available in all operating systems. In general, special tools are required to set up print services.

Print service	Windows 2000	Windows XP	Windows Vista	Windows 7
Raw-IP	Not available	Available	Available	Available
LPD	Available, but not installed	Available	Available	Available

During the installation of both print services, additional connections for print output are set up:

- Raw-IP: Enter the same port address in the printer which you have selected during installation.
- LPD: "lp" (line printer) must be entered as the name of the printer on the computer (queue name).

Adjusting Windows Printer Setting

If the printer driver valid for your Windows version is installed on your computer, Windows standard applications can be used to edit the label contents and to start the print jobs. To use the Raw-IP or LPD print services, the Windows printer settings must be adjusted:

1. Open the folder containing the printers via Start > Settings > Printers.
2. Right-click the icon of the label printer. A pop-up menu appears.
3. Select "Properties" in the pop-up menu.
4. Open the "Details" or "Connections" tab.

   This tab contains, among other things, the connections which were also set up when the print services were installed. The names of these connections depend on the installation tool used.
5. Select the Raw-IP or LPD connection.
6. Click OK.

Connecting the Label Printer via USB Interface

The high-speed USB interface allows the label printer to be operated via a USB interface of a computer running the operating system Windows 2000, Windows XP 32bit / 64bit, Windows 2003 32bit / 64bit and Windows Vista 32bit / 64bit.

A printer driver must be installed if a USB interface will be used for connection.

1. Switch label printer off.
2. Connect computer and label printer with an A-B cable.

3 Switch computer on.

4 Place the driver CD in the CD-ROM drive.

5 Exit all programs currently running.

6 Switch printer on. The Windows Installation Wizard is started automatically.

After successful installation, an icon for the label printer appears in the Windows "Printer" system folder.

7 Click icon in "Printer" system folder and make printer settings if necessary.

Switching on the Device

When all connections have been made:

Switch the printer on at the power switch. The printer performs a system test, and then shows the system status `Ready` in the display.

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

3 Control Panel

Structure of the Control Panel

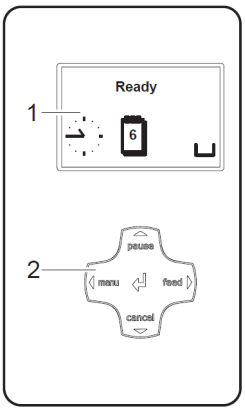
The user can control the operation of the printer with the control panel, for example:

- Issuing, interrupting, continuing and canceling print jobs.
- Setting printing parameters, e.g. heat level of the printhead, print speed, interface configuration, language and time of day. *See "Print Parameters" on page 20.*
- Start the test functions. *See "Test Functions" on page 71.*
- Control stand-alone operation with a memory module. *See "Configuration" on page 17.*
- Update the firmware. *See "Performing firmware update" on page 81.*

Many functions and settings can also be controlled by software applications or by direct programming with a computer using the printer's own commands.

Settings made on the control panel make the basic settings of the printer.

Note: *It is advantageous, whenever possible, to make adaptations to various print jobs in the software.*



The control panel consists of a graphic display (1) and the navigator pad (2) with five integrated keys.

The graphic display indicates the current status of the printer and the print job, indicates faults and shows the printer settings in the menu.

Symbol Displays

The symbols shown in the following table may appear in the status line of the display, depending on the printer configuration. They enable the current printer status to be seen quickly. *See "Status Line" on page 25.*

Symbol	Description	Symbol	Description
	Clock		Debug window for abc programs
	Date sheet		Control of the lower display line is handed over to an abc program
	Date/time digital		User memory in the clock circuit
	Ribbon supply		Used memory
	Wi-Fi signal strength		Input buffer
	Ethernet link status		Access to memory card
	Temperature of the printhead		Printer is receiving data
	PPP funds		

Printer States

State	Display	Description
Ready	`Ready` and configured symbol displays, such as time  and date 	The printer is in the ready state and can receive data.

State	Display	Description
Printing label	`Printing label` and the number of the printed label in the print job.	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. The print process may be continued by pressing the **pause** key.
		The printing process has been interrupted automatically by passing a pre-defined rest diameter of the ribbon supply roll. After loading a new ribbon roll the print process may be continued by pressing the **pause** key.
Correctable error	 and the type of error and the number of labels still to be printed.	An error has occurred that can be rectified by the operator without interrupting the print job. The print job can be continued after the error has been rectified.
Irrecoverable error	 and the type of error and the number of labels still to be printed.	An error has occurred that cannot be rectified without interrupting the print job.

State	Display	Description
Critical error	 and the type of error	An error occurs during the system test. • Switch the printer off and then on again at the power switch or • Press **cancel** key. Call Service if the fault occurs persistently.
Power Save Mode	 and the key lighting is switched off	If the printer is not used for a lengthy period, it automatically switches to power save mode. • To exit power save mode: Press any key on the navigator pad.

Key Functions

The key functions depend on the current printer state:

- Active functions: Labels and symbols on the navigator pad keys light up.
- Active functions light up white in print mode (e.g. **menu** or **feed**).
- Active functions light up orange in the offline menu (arrows).

Key		Display	State	Function
menu	lights	`Ready`	**Ready**	To the offline menu
feed	lights	`Ready`	**Ready**	Feeds a blank label

Key		Display	State	Function
pause	lights	`Printing label`	**Printing label**	Interrupt print job, printer goes into "Pause" state
		`Pause`	**Pause**	Continue the print job, printer goes into "Printing label" state
	flashes		**Correctable error**	Continue the print job after rectifying the error, printer goes into "Printing label" state ***Note:*** *The labels, which are printed by the lower printer but not yet printed by the upper printhead when the error occurs, cannot be repeated by the printer. So the amount of the printed label will be reduced within the print job.*
cancel	lights	`Printing label`	**Printing label**	• Short press - cancels the current print job • Longer press - cancels the current print job and deletes all print jobs
		`Pause`	**Pause**	
			**Correctable error**	
	flashes		**Irrecoverable error**	
↵	lights		**Error**	Call Help - Concise information for rectifying the fault will be displayed

Key	Menu	Parameter setting	
		Parameter choice	Numeric value
↑	Return from a submenu	-	Increase of the number at the cursor position
↓	Jump into a submenu	-	Decrease of the number at the cursor position
←	Menu option to the left	Sheets to the left	Cursor shift to the left

Key	Menu	Parameter setting	
		Parameter choice	Numeric value
→	Menu option to the right	Sheets to the right	Cursor shift to the right
↵	Start of a selected menu option Pressing 2 s: Leaving the offline menu	Confirmation of the selected value Pressing 2 s: Abort without changing the value	

4 Configuration

Configuration via Operating Panel

A host of parameters for configuring the printer are found in the Setup menu of the offline menu. Your printer is mainly configured via the operating panel during initial commissioning and when making major changes to the operational conditions. Changes required for processing different print jobs can be implemented via software settings.

You can protect the Setup menu from unauthorized access via a code number (PIN).

Local Settings

1) Press the menu button.
2) Select Setup > Local settings.

Parameter	Meaning	Default
Country 	Setting the display language and the country-specific date and time formats. You can also overwrite the time formats via software. The changes are not saved permanently, however.	USA
Timezone 	Adaptation of the time display of the printer to the time zone in relation to UTC (Universal Time Coordinated).	UTC + 1
Daylight saving 	Selection of the daylight saving regulation applicable for the region. The time is then changed automatically.	EU
Set date 	Setting of the system date in the format DD.MM.YYYY (DD: day, MM: month, YYYY: year). The print output of the date occurs in the format set via the “Country” parameter. You can also change the date via software. The change is not saved permanently, however.	-

Parameter	Meaning	Default
Set time 	Setting the system time in the HH:MM:SS format. When changing the time, ensure that the Time-zone, Daylight saving and Set date parameters are set correctly. The time can also be synchronized automatically via the internet using the Ethernet interface. The print output of the time occurs in the format set via the “Country” parameter. You can also change the time via software. The change is not saved permanently, however.	-

Machine Parameters

1) Press the menu button.
2) Select Setup > Machine param.

Parameter	Meaning	Default
Printhead pos. X 	Shifting of the entire print image perpendicular to the direction of paper flow. The absolute shifting of the print image perpendicular to the direction of paper flow is limited to the difference between the label width and the printhead width set in the software. You can also set the Printhead pos. X via software. The offset values from the Machine param. menu and the software are added together.	0.0 mm

Parameter	Meaning	Default
Printhead pos. Y 	Shifting of the entire print image in the direction of paper flow. With positive values, printing begins later in the direction of paper flow. Shifting of the print image in the direction of paper flow also influences the peel and cutting positions. • Correct the Peel position and Cut position parameters by the same value in the opposite direction. You can also set the Printhead pos. Y via software. The offset values from the Machine param. menu and the software are added together.	0.0 mm
Offset upper-lower head 	**Plexo! Duo 453 Only** Shift the print image of the upper printhead in the direction of the media. With positive values, printing begins later in the direction of the media. The Offset upper-lower head can also be set via software. The offset values from the Machine param. menu and the software are added together.	0,0 mm
Tear-off pos. 	Shifting of the tear-off position in the direction of paper flow. With positive values, the label strip is transported farther out of the printer.	0.0 mm
Cutter 	Configuration of the optional cutter. *See "CU4/CU6 Cutter Accessory" on page 59.* If cutter is not connected, this option is not available.	
Brightn. LCD 	Brightness of the LCD display from 1 to 10	10

Parameter	Meaning	Default
Contrast LCD 	Contrast of the LCD display from 4 to 8.	6
Time Powersave. 	Time between the last operation and the activation of Powersave mode.	5 min.
Debug mode 	Operating mode which supports the firmware programmer when localizing errors.	Off

Print Parameters

1) Press the menu button.
2) Select Setup > Print param.

Parameter	Meaning	Default
Heat level 	Heating value for compensating for the differing thermal behavior of printheads. Changing this value is then especially necessary if the printing intensity has changed after replacing the printhead. To adapt the printing intensity when using different media, print speeds or printing contents, you should change the heat level in the software. The settings from the Print param. menu and the software are added together.	0
Print speed 	Basic print speed setting. You can re?]specify the print speed for each print job via software. The basic setting is not changed by this. The print speed setting also affects the test printouts.	100 mm/s

Parameter	Meaning	Default
Transfer print 	On for thermal transfer printing: Sensor for monitoring the transfer ribbon is activated. Off for thermal direct printing: Sensor for monitoring the transfer ribbon is not activated. You can overwrite the setting for each print job via software.	On
Warn levelribbon 	Warning via the Ethernet interface by way of an SNMP message or e-mail sent when the remaining diameter of the ribbon supply roll undershoots the set value (32.74 mm).	Off
Label sensor 	Method for detecting the starting end of the label. Gap Sensor: Detection using changes in the transparency between the label and label gap. Bottom-Reflect: Detection using reflex marks on the bottom of the medium. Continuos media: Synchronization of the paper flow when using endless media in cutting mode. *See "CU4/CU6 Cutter Accessory" on page 59.*	Gap Sensor
Tear-off mode 	Positioning the label medium for tearing off at the tear-off plate. On: Additional advancement of the label medium which positions the label gap after the last printed label at the dispense plate. Off: Label advance stops once the last label has fully passed the print line.	Off

Parameter	Meaning	Default
Backfeed 	Method for backfeeding the label medium. Backfeeding is necessary in the cutting and peel-off modes since a label is pushed out passed the front edge of the next label above the print line when peeling off/cutting. always: Backfeeding occurs independently of label contents. smart: Backfeeding only occurs when the next label is not yet fully prepared when peeling off/cutting the current label. Otherwise, the second label is pushed on and completed after removal of the first label without backfeeding.	smart
Error-Reprint 	On: With a correctable error and corresponding troubleshooting, the label being printed when the error occurs is repeated. Off: Print job is continued with the next label.	On
Pause reprint 	Printing of another label with the information of the previous print job by pressing the pause button. This function can be executed until the print buffer is cleared with the cancel button.	Off
Barcode error 	On: With faulty barcode contents or size specifications, printing is interrupted. Off: Printing is not interrupted if an error occurs. If barcode contents are faulty, the printer attempts to replace the incorrect data with valid characters (e.g. zeros). If barcode size specifications are faulty, a gray area is printed instead of the barcode.	On

Parameter	Meaning	Default
Width ASCII dump 	Width of the printing area in the. Monitor mode. test function. *See "ASCII Dump Mode" on page 77.* With the Automatic setting, the printout of the control sequences arriving at the printer occurs over the maximum printing width. You can reduce the printing area width down to 50 mm.	Automatic

Interfaces

1) Press the menu button.
2) Select Setup > Interfaces.

Parameter	Meaning	Default
Default card slot 	Definition of the primary card slot. Select one of the card slots on the back of the printer with Compact-Flash or PC-Card or the card slot in the external operating panel with Ext. CompactFlash.	Compact-Flash
Character set 	Selection of the character set table for adaptation to the computer system used. Switching the character set via software is not possible. You can access characters not available in the selected character set, however, using the Unicode table.	Windows 1252
RS232 	Interface parameters Baud rate and Handshake for data transfer via the serial RS-232 interface.	57600 RTS/CTS
IEEE 1284 	Configuration of the optional parallel interface. See the documentation of the parallel interface. If interface is not installed, this option is not available.	

Parameter	Meaning	Default
RS-422/485 	Configuration of the optional serial RS-422 or RS-485 interface. See documentation of the serial interface. If interface is not installed, this option is not available	
Ethernet 	Configuration parameters of the Ethernet interface card. You can access additional configuration parameters for the Ethernet interface card via the printer website. *See "Setup tab" on page 30.*	
> DHCP 	Method of issuing IP address On: Dynamic issuing of IP address by the DHCP server Off: Direct issuing of the IP address by the operator	On
> IP 	IP address of the label printer. Only valid with DHCP = Off.	
> Mask 	Subnet mask (classification and address range) of the local network. Only valid with DHCP = Off.	
> Gateway 	Connection address between the local network and other networks. The IP address of the computer (router) on the network through which the connection can be established is used for this. The address of the router can also be issued via DHCP.	Off
> Network error 	Printer switches to Error mode when problems with the network connection occur.	Off
Keyboard 	Setting of the keyboard layout when using an external keyboard. If keyboard is not connected, this option is not available.	

Parameter	Meaning	Default
> Layout 	Country setting of the keyboard layout. With the Automatic setting, the setting from the menu Local settings > Country is used. If keyboard is not connected, this option is not available.	Automatic
> NumLock 	Activation or deactivation of the numerical keypad on the keyboard. If keyboard is not connected, this option is not available.	On

Status Line

Select the parameters to be displayed in Ready mode.

1) Press the menu button.
2) Select Setup > Status line menu.

Parameter	Meaning	Default
Clock 	Displays the current time.	On
Date sheet 	Displays the current calendar day.	On
Ribbon supply 	Displays the current ribbon supply in the form of a horizontal bar.	Off
Wi-Fi signal strength 	Displays the current strength of the electromagnetic field with a WLAN connection.	Off
Ethernet link status 	Displays the Ethernet status.	Off

Parameter	Meaning	Default
Temperature 	Displays the current printhead temperature.	Off
Used memory 	Displays the current memory used in the form of a vertical bar.	Off
Input buffer 	Displays the current input buffer used in the form of a vertical bar.	Off
Card access 	Icon displayed while an installed memory card is being accessed.	On
Data transfer 	Displays the current data transfer in the form of a falling drop.	On

Security

By activating a PIN, the Setup menu, certain memory medium functions and the firmware update can be protected from unauthorized access.

The protected menu items are then marked with the lock symbol and are only accessible after the PIN is entered.

1) Press the menu button.
2) Select Setup > Security.

Parameter	Meaning	Default
Security 	Status of the PIN activation	Off
PIN 	Setting of the PIN	0000

Configuration via the printer website

The parameters accessible via the operating panel can also be set via the website contained in the firmware of the printer. In addition, other parameters for the Ethernet interface are accessible there.

You can access the printer website with a Java-capable browser (e.g. Microsoft Internet Explorer, Netscape Navigator) via the Ethernet interface. Use of the Java applets requires at least version 1.4.2 of Java.

Calling up the printer website

It is absolutely necessary to define a PIN in order to make settings via the printer website. You are requested to enter this PIN whenever settings are changed via the website. The initial setting of the PIN can be make via the operating panel of the printer or via the printer website.

1. Start the browser.
2. Call up printer website by entering the IP address via HTTP (e.g. http://192.168.100.208).

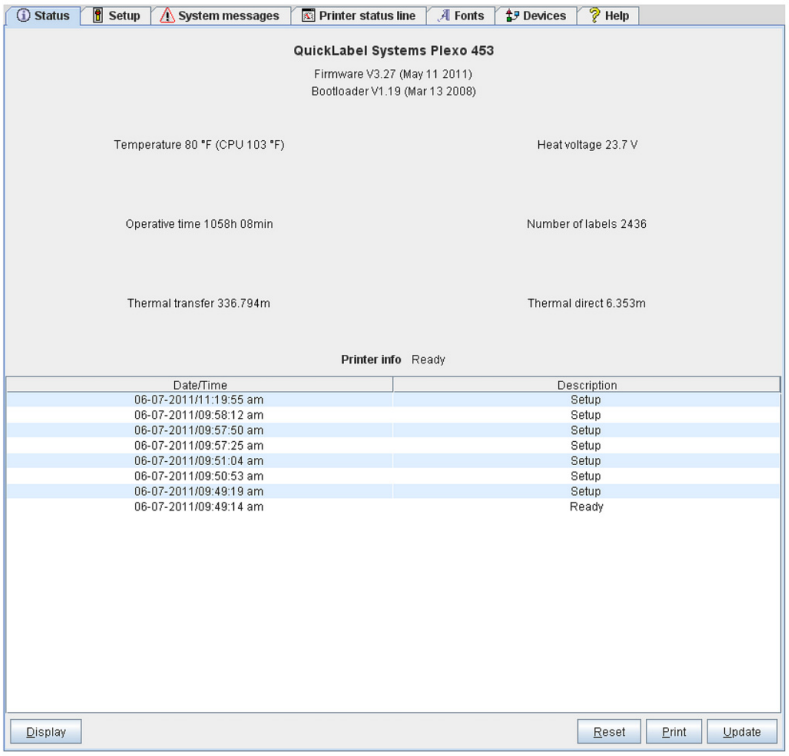
   The “Status” tab is open on the home screen.
3. Check to see if the status “Ready” is displayed.

Description of the printer website

The printer website contains the following tabs:

- **Status:** general status description. *See “Status tab” on page 28.*
- **Setup:** configuration parameter settings. *See “Setup tab” on page 30.*
- **System messages:** automatic sending of messages via e-mail. *See “System messages tab” on page 32.*
- **Printer status line:** printer status line layout. *See “Printer status line tab” on page 34.*
- **Fonts:** overview of the available fonts. *See “Fonts tab” on page 34.*
- **Devices:** list of the hardware and optional components. *See “Devices tab” on page 35.*

Status tab



The following information is contained in the top section of the “Status” tab:

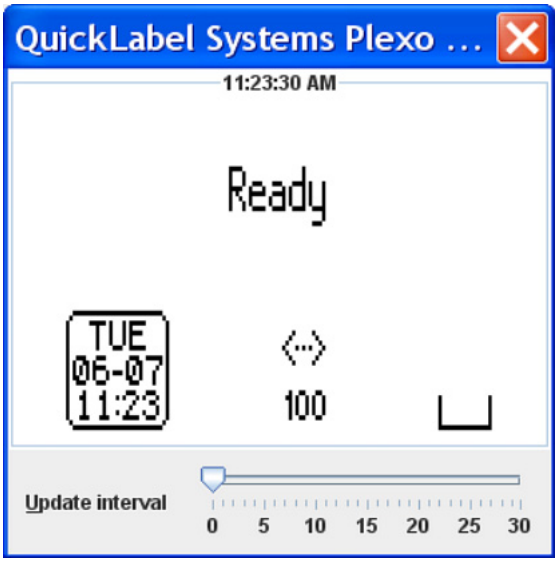
- Printer type
- Firmware version
- Bootloader version
- Printhead temperature and temperature of CPU
- Heat voltage for the printhead. The heat voltage is only active during printing. Otherwise, 0.0 V is displayed.
- Operative time of the printer
- Number of labels printed since commissioning
- Previously printed paper length with thermal transfer printing
- Previously printed paper length with thermal direct printing
- Printer status: “Ready”, “Printing label”, “Settings” or “Error”

Note: *Information is not updated automatically while the “Status” tab is open. Updating occurs when the tab is changed or by clicking the Update button.*

A list of the events which have occurred since the printer was switched on are found in the bottom section of the tab. No more than the last eight events are displayed.

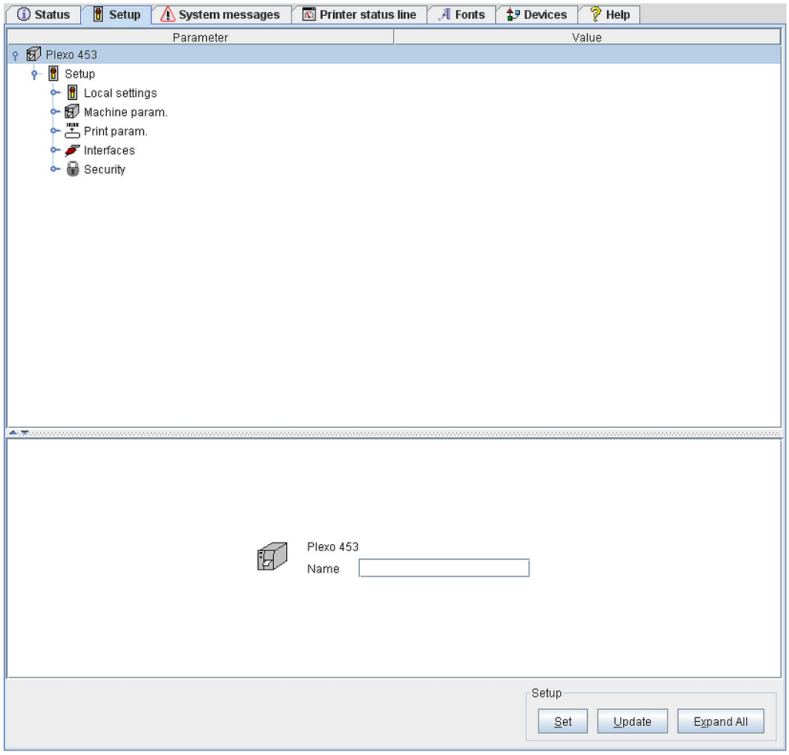
The “Ready” event provides information on when the printer was switched on.

The buttons on the bottom line of the “Status” tab have the following functions:

Button	Function
Display	Opens a window which shows the current printer display.  You can set the update interval on the scale below the display. The display is not updated automatically with the “0” setting.
Reset	Hard : functions like switch-off and switch-on Soft : functions like the cancel key
Print	Opens the window for the settings of a local printer or network printer to be used to print the contents of the "Status" tab.
Update	Updates the display on the "Status" tab.

Setup tab

On the “Setup” tab, you can set all the configuration parameters which are also accessible via the operating panel in the Setup menu. In addition, other parameters for the Ethernet interface can be set (see below).



The menus and parameters are arranged in a tree structure in the top section of the tab. The tree structure can be expanded in different ways:

- Click circular symbol in front of the menu symbol once. The corresponding menu is expanded.
- Double-click menu symbol or menu name. The corresponding menu is expanded.
- Click the Expand All button. The tree structure is fully expanded.

To change a parameter:

1. Locate parameter in the tree structure.
2. Click parameter name or the symbol next to it.
3. Enter value of the parameter in the input field in the bottom section of the tab.
4. Click Set.
5. Enter PIN and click OK.

The printer can be given a name on the top line of the tree structure. This name does not have a functional meaning. Its sole purpose is to allow the operator to more easily differentiate between the printers on a network.

Note: *Information is not updated automatically while the "Setup" tab is open. Updating occurs when the tab is changed or by clicking the Update button.*

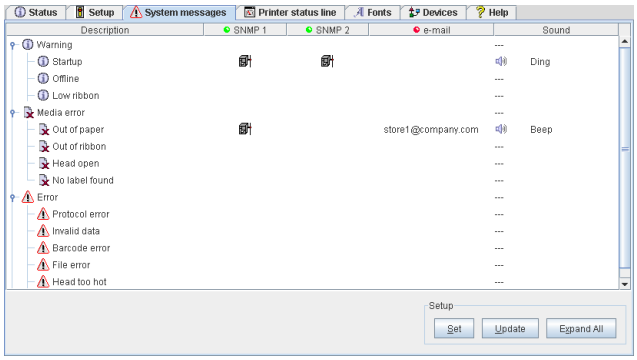
The following parameters for the Ethernet interface can only be accessed via the printer website:

Parameter	Meaning	Default
SMTP server	E-mails can be sent to selected addresses when certain status and error messages are generated. To activate: • Set parameter to "On". • Enter IP address of the SMTP server. • Enter a valid e-mail address for the printer in the "From address" field. More detailed information on sending e-mails is found in the System messages tab. *See "System messages tab" on page 32.*	Off
Raw-IP port	Service for printing on the network. Select a predefined port address.	9100
LPD	Activation of the network printing service LPD. • Set parameter to "On". • Typically activate the queue name "lp". Several print spoolers work without queue name.	Off
LPD queue name	Activation of the LPD queue name	lp
SOAP	Activation of the protocol SOAP (Simple Object Access Protocol)	Off
SOAP password	Password setting for SOAP	Off

Parameter	Meaning	Default
SNMP	Data exchange between printer and management station via SNMP (Simple Network Management Protocol). To activate: • Set parameter to "On". • Enter IP address of the management station(s) (receiver 1 or receiver 2). • Assign the "Community" parameter the value "public".	Off
Time server	Synchronization of the date and time of the printer. To activate: • Set parameter to "On". • Enter IP address of the time server. Synchronization occurs hourly. The accepted time is not automatically saved in the printer, however. To save the accepted time: • Call up the parameter time and save the displayed setting with OK.	Off
Anonymous FTP	Enables or disables a FTP-logon with as "Anonymous".	Off

System messages tab

Status and error messages can be sent automatically to the SNMP manager or via e-mail to the selected addresses immediately after they occur via the Ethernet interface. You can select the messages to be sent and the destination addresses on the “System messages” tab.

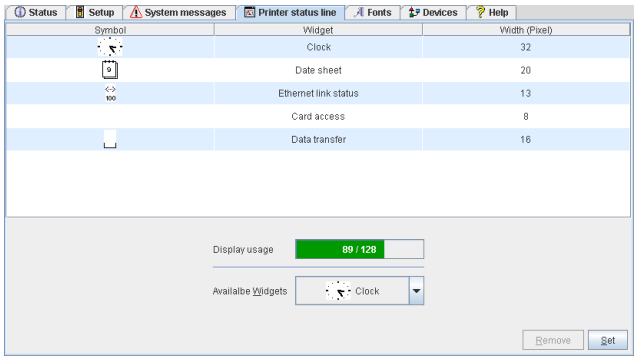


Column	Meaning
Description	Status and error messages that can be sent. • Expand tree structure by clicking the circular symbol once or double-clicking the description. An entry for a higher-order description (e.g. note) is automatically accepted for all subordinate descriptions (e.g. “Start”, “Not ready”, “Ribbon running out”).
SNMP 1 **SNMP 2**	Management stations on local network which communicate with the printer via SNMP. To make use of SNMP functionality, the SNMP agent must be activated. • Select management station by clicking the corresponding cell. The selection is indicated via a symbol. You can undo the selection by clicking it again.
E-mail	Valid e-mail address for the SMTP server to which the message is to be sent. • Click cell and enter e-mail address or select from pull-down menu.
Sound	Audible signal which indicates receipt of the message. • Click cell and select signal type in pull-down menu.

Note: *The settings are not accepted until the Transfer button is clicked. If you switch to another tab beforehand, the settings are lost.*

Printer status line tab

On the “Printer status line” tab, you can select the status parameters which are to be displayed on the printer status line.



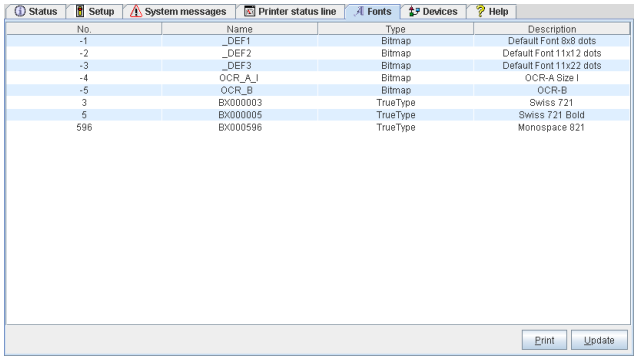
1 To add a status parameter, select widget in pull-down menu.

Click Set.

2 To remove a status parameter, select parameter in the list. Click Remove.

Fonts tab

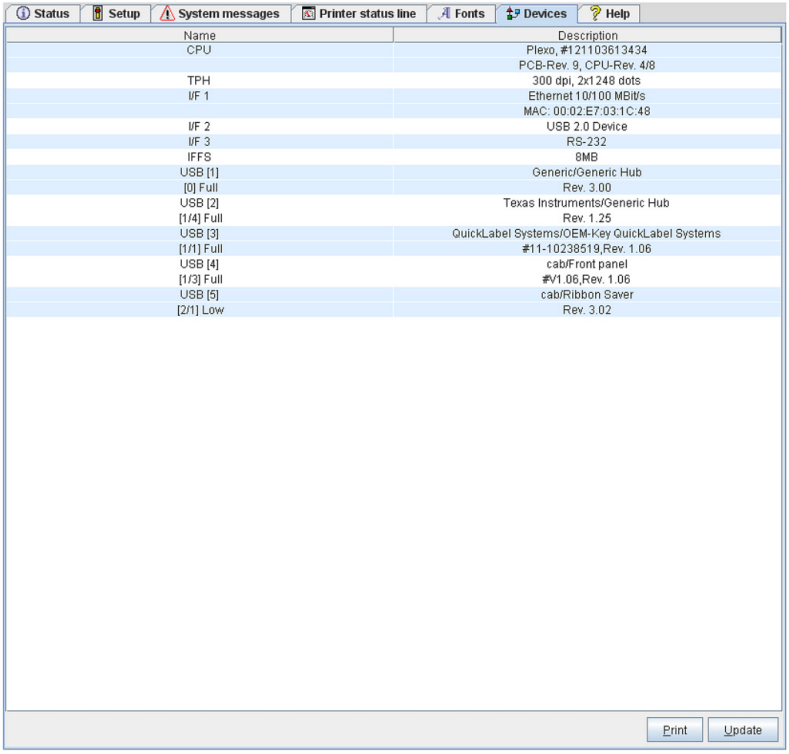
The most important parameters of the fonts available in the printer are listed on the “Fonts” tab. The table contains both the original fonts in the printer and other fonts loaded into the printer.



The parameters correspond to those in the Font list menu and are described in Font list. *See “Font List” on page 74.*

Devices tab

The “Devices” tab provides an overview of the most important hardware components installed in the printer and the optional devices connected.



The contents of the display correspond with those of the Device list. *See “Device List” on page 75.*

5 Offline Menu

Structure of the Offline Menu

The offline menu contains setting options on several levels for configuring the label printer. In addition, the offline menu features test functions for supporting the configuration or checking the function of the label printer. Using status functions, the set parameters can be displayed or printed.

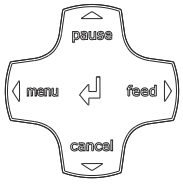
1st menu level	2nd menu level	Access
Memory card 	**Label from card** 	Only with memory medium inserted in the default card slot
	Print directory 	
	Copy memory card 	Only with memory card or USB flash drive inserted, PIN protection possible
	Format card 	
	ASCII dump (Card) 	Only with memory medium inserted in the default card slot
Short status 		

1st menu level	2nd menu level	Access
Test 	Status print 	
	Font list 	
	Device list 	
	ASCII Dump mode 	
	Test grid 	
	Label profile 	

1st menu level	2nd menu level	Access
Setup 	**Local setting** 	PIN protection possible
	Machine param. 	
	Print param. 	
	Interfaces 	
	Status line 	
	Security 	
Service 	**Firmware upd.** 	PIN protection possible
	Firmw. fr. card 	Only with memory medium inserted in the default card slot PIN protection possible
	Save settings 	Only with memory medium inserted in the default card slot PIN protection possible
	Load settings 	Only with memory medium inserted in the default card slot PIN protection possible

Navigating in the Offline Menu

All settings and functions in the offline menu can be controlled with the navigator pad.



Key	Menu	Parameter setting	
		Parameter choice	Numeric value
⌃	Return from a submenu	-	Increase of the number at the cursor position
⌄	Jump into a submenu	-	Increase of the number at the cursor position
‹	Menu option to the left	Sheets to the left	Cursor shift to the left
›	Menu option to the right	Sheets to the right	Cursor shift to the right
↵	Start of a selected menu option Pressing 2 s: Leaving the offline menu	Confirmation of the selected value Pressing 2 s: Abort without changing the value	

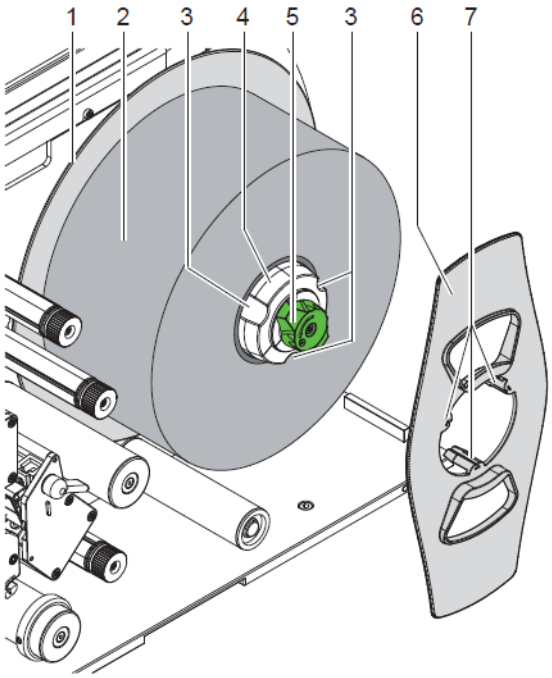
Note: *All settings in the offline menu also can be made via the Ethernet interface or via direct control commands.*

6 Loading Material

For adjustments and simple installation work, use the accompanying Allen key located in the print unit. No other tools are required for the work described here.

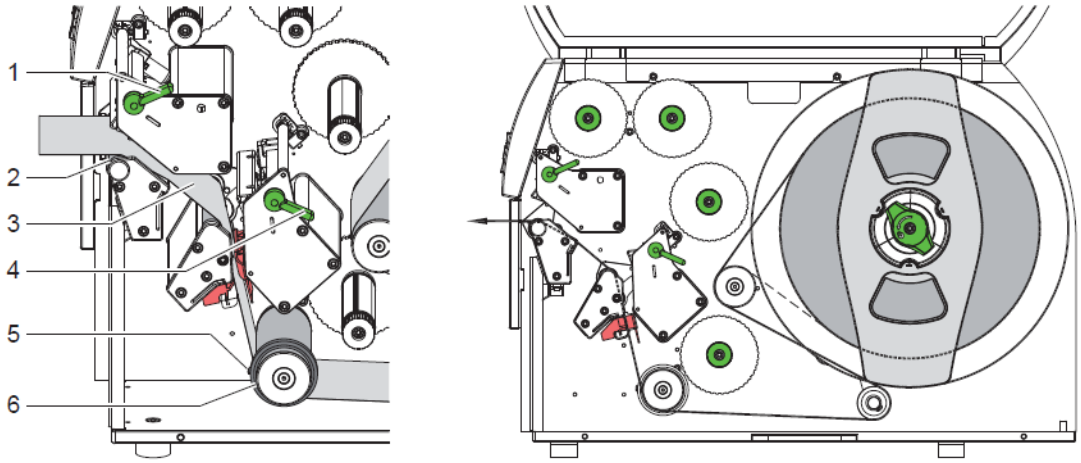
Loading Labels from Roll

Positioning the Label Roll on the Roll Retainer



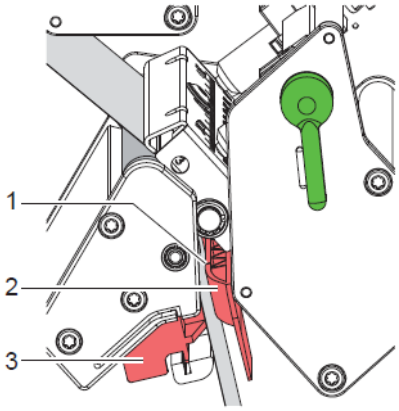
1) Turn knob (5) clockwise to release the roll retainer (4).
2) Remove the margin stop (6) from the roll retainer.
3) Load label roll (2) on the roll retainer (4) in such a way, that the labels are visible from above after unrolling.
4) Slide the roll against the wall plate (1).
5) Guide the latches (7) of the margin stop (6) into the grooves (3) of the roll retainer (4) and push the roll retainer against the label roll (2).
6) Turn knob (5) counterclockwise to tighten the label roll and the margin stop on the roll retainer.

Inserting Labels into the Print Mechanics



1) Unroll a label strip of approx. 1 m. Guide the label strip to the print mechanics as shown. The broken line shows the path for inside wound labels.
2) Turn levers (1,4) counterclockwise to lift both printheads.
3) Loosen the threaded pin (5) and slide the guide ring (6) to the outermost position.
4) Guide media strip through the print mechanics as shown to the upper print roller (2).
5) Slide the guide ring (6) against the edge of the label strip (3) and tighten the threaded pin (5).
6) Fix the media by closing the lower printhead.
7) Tighten the label strip between the printheads and close the upper printhead.

Setting the Label Sensor



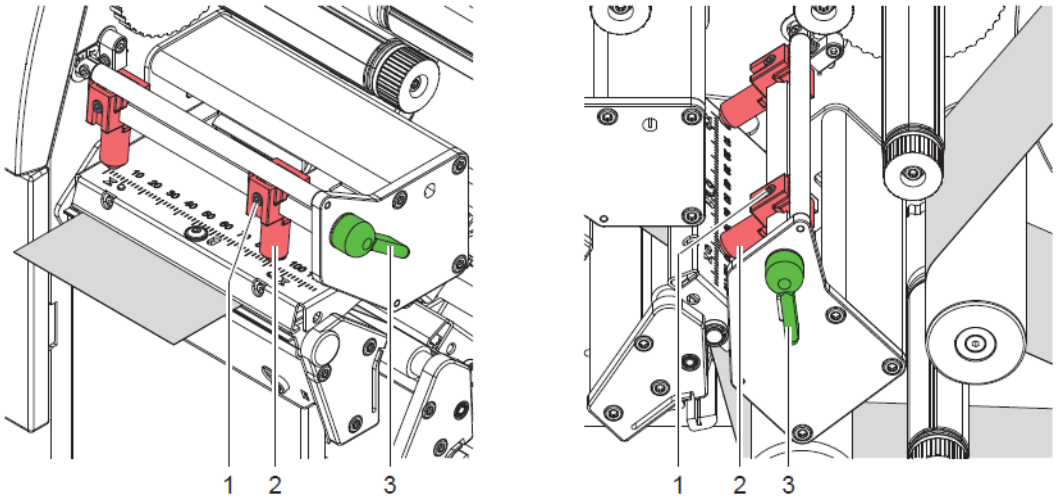
The label sensor (2) can be shifted perpendicular to the direction of paper flow for adaptation to the label medium. The sensor unit (1) of the label sensor is marked with a indentation in the label sensor retainer.

- Position label sensor with tab (3) in such a way that the sensor (1) can detect the label gap or a reflex or perforation mark.
- Or, if the labels deviate from a rectangular shape, align label sensor using the tab (3) with the front edge of the label in the direction of paper flow.

Setting the Head Locking Systems

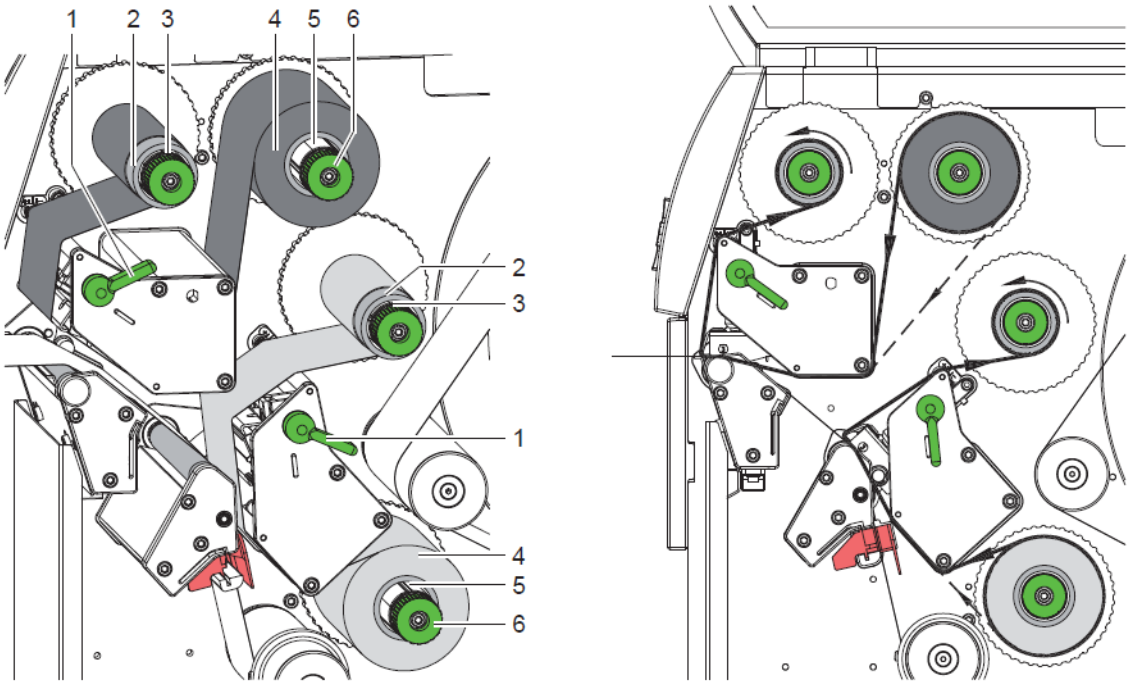
The printheads are pushed on via two plungers. The locations of the outer plungers must be set to the width of the label medium used so as to

- achieve even print quality across the entire label width
- prevent wrinkles in the feed path of the transfer ribbon
- prevent premature wearing of the print roller and printhead.



1) Turn lever (3) clockwise to lock the printhead.
2) Loosen threaded pin (1) at outer plunger (2) with Allen key.
3) Position outer plunger (2) above the outer label edge and tighten threaded pin (1).

Loading Transfer Ribbon



Attention: *Risk of errors by wrong color assignment. Ensure that programming and assignment of ribbon colors to the print units are matching.*

Note: *The lower print unit is equipped with a ribbon saver. If there is no information to print in the assigned color during a longer label feed, the printhead will be lifted, and the transfer ribbon will be paused from feeding.*

Loading transfer ribbon can be performed for both print units in the same manner:

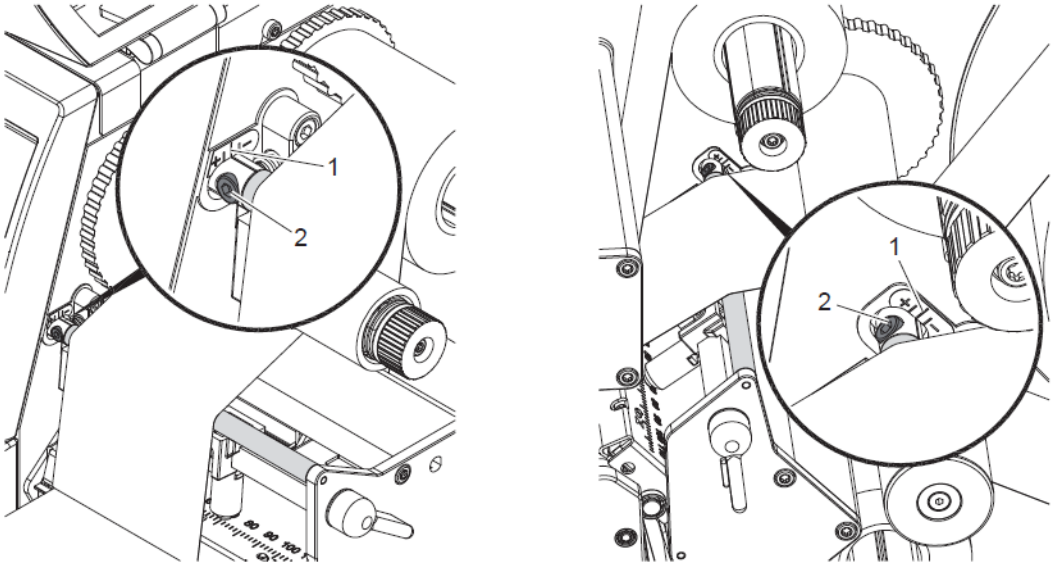
1) Clean printhead before loading the transfer ribbon. *See "Cleaning the Printheads" on page 69.*
2) Turn lever (1) counterclockwise to open the printhead.
3) Slide transfer ribbon roll (4) onto the ribbon supply hub (5) until it stops and so that the color coating of the ribbon faces away from the printhead after loading.
4) Hold ribbon supply hub (5) firmly and turn knob (6) counterclockwise until the transfer ribbon roll is secured.
5) Slide suitable ribbon core (2) onto the transfer ribbon take-up hub (3) and secure it in the same way.
6) Guide transfer ribbon through the print unit as shown. The broken line shows the path for ribbon with inkside out.
7) Secure starting end of transfer ribbon to the transfer ribbon core (2) with adhesive tape. Ensure counterclockwise rotation direction of the transfer ribbon take-up hub here.
8) Turn transfer ribbon take-up hub (3) counterclockwise to smooth out the feed path of the transfer ribbon.

9) Turn lever (1) clockwise to close the printhead.

Setting the Feed Path of the Transfer Ribbon

Transfer ribbon wrinkling can lead to print image errors. Transfer ribbon deflection can be adjusted so as to prevent wrinkles.

Note: *A maladjustment of the head locking system may also cause ribbon wrinkling. Check first the setting of the head locking systems.* *See "Loading Labels from Roll" on page 41.*



Note: *The adjustment is best carried out during printing.*

1) Read current setting on the scale (1) and record if necessary.
2) Turn screw (2) with Allen key and observe the behavior of the ribbon. In the + direction, the inner edge of the ribbon is tightened, and the outer edge is tightened in the - direction.

7 Printing Operation

Printhead Protection

Note: *Printhead damage caused by improper handling!*

- Do not touch the heating elements of the printheads with the fingers or sharp objects.
- Ensure that the material is clean.
- Ensure that the material surfaces are smooth. Rough material act like emery paper and reduce the service life of the printhead.
- Print with the lowest possible printhead temperature.

The printer is ready for operation when all connections have been made and labels and the transfer ribbon have been loaded.

Synchronization in Cut Mode

To guarantee the correct length of the first label a cut prior print job is required :

- Activate in the printer driver menu **General > Print Settings > Advanced Setup** the setting "**cut before labels**".

  or

- For direct programming use the command **C s**.

Designing the Print Image

- Define the double material width as label width.
- Place the information for the main color at x-coordinates between 0 and the material width.
- Place the information for the secondary color at x-coordinates between the single and the double material width.

Attention: *Objects with x-coordinates on both sides of the single material width cannot certainly be assigned to one color.*

- Place each object completely into one of the color zones.

The color assignment would be altered by using the commands for rotating (O R) or mirroring (O M) the print image.

- Do not use the commands for rotating (O R) or mirroring (O M) the print image.

Suppressing Backfeed

Note: *Feeding back the material to the lower printhead in the cut mode or between print jobs is not allowed.*

To avoid the backfeed :

- In the printer driver menu **General > Print Settings > Advanced Setup > Options** the setting "**ignore label position**" is permanently activated.

  or

- For direct programming use the command **O F**.

Ribbon Saving

If there is no information to print in the secondary color during a longer label feed, the lower printhead will be lifted, and the transfer ribbon will be paused from feeding. This will reduce the ribbon consumption. The minimum length for ribbon saving is defined in the firmware and depends on the print speed.

The ribbon saver can permanently be activated in the printer configuration or job-oriented by the software.

Avoiding Loss of Material

Note: *Loss of material! The print images for the two colors of one label are printed at two different places in the media feed. Therefore every interruption of the continuos print process has the following consequences :*

- Material already printed with the secondary color will be fed to the upper printhead to complete the print of the label, but the following media will not be printed with the secondary color.
- A label backfeed to the lower printhead is not allowed due to the reliability of the label transport.
- Following blank labels are generated, which cannot be used.
- For operation with cutter the length of the blank section is at least 110 mm for continuos material. For labels where the print image has to be synchronized to the label transport the loss of material can reach a length of more than 300 mm.

To minimize the loss of material it is necessary to avoid interruptions of the continuos print process.

- Interrupt the print process with the pause key only if it is absolute necessary.
- Avoid print jobs with a small amount of labels, especially single prints.
- Avoid predictable error situations. If errors occur the loss of material is particular high. Besides the blank section also material must be rejected which is partly printed.

Optimization of the Data Transfer

If sequent labels contain differing information, the internal preparation of the second label must be completed before the printing by the lower printhead for the first label has been finished!

Otherwise the first label will be fed to the upper printhead to complete the print without printing the next section with the secondary color. The print of the second label begins only after completion of the first label.

Therefore it is necessary to minimize the data to be transferred. i.e. to avoid transferring complete label descriptions and to transfer the changing data only :

- In the printer driver menu **General > Print Settings > Advanced Setup > Options** the setting "**Force optimized printing**" is permanently activated.

  or

- For direct programming use the replace command **R** for changing data.

Attention: *Loss of material! The RS-232 interface is unsuitable for fast transmission of changing data. Use USB or Ethernet interface for print operation.*

Avoiding Loss of Data

Attention: *Loss of data! When correctable errors occur labels which are already printed by the lower printhead but not are completed by the upper printhead cannot be repeated after error correction. The data of those labels are lost for the printer.*

- Avoid predictable error situations.
- To avoid the errors "Out of paper" or "Out of ribbon" switch the printer to the Pause state before the material runs out. Continue the print process by pressing the pause key after re-loading material. That way the data will be saved.

Pause on Media Low

The error "Out of ribbon" can be avoided automatically with the integrated ribbon low warning :

- Set parameter **Setup > Print param. > Pause on media low** to "**On**".
- Set the rest diameter of the ribbon supply roll with the parameter **Setup > Print param. > Warn level ribbon** to e.g. **35 mm**.

If the diameter of the ribbon roll falls below the set value the automatically switches to the Pause state.

8 Accessories

Cutter

See "CU4/CU6 Cutter Accessory" on page 59.

External keyboard

You can connect an external keyboard or compatible input device (e.g. barcode scanner) directly to the printer. Using an external keyboard facilitates the entry of variable data while processing print jobs and printing from the memory card.

Input prompts and the data received from the keyboard are shown in the display.

Connecting external keyboard

You can connect any MF-2-compatible USB keyboard which supports code set 3 to the printer.

- Insert connection cable of the keyboard into the USB master interface on the back of the printer.

Special key functions

General

Key	Function
[F1]	Executes the Label from card memory card function.
[F2]	Prints an additional label from the last print job. Corresponds to the command A 1 CR.
[F3]	Repeats the last print job with renewed polling of the variable data and polling of the label quantity.
[F8]	Functions in the same manner as feed.
[Enter]	Switches to the offline menu. Functions in the same manner as menu.
[Esc]	Functions in the same manner as cancel.
[Space]	Functions in the same manner as pause Not for continuing after an error.

In the offline menu and for entry of variable data

Key	Function
Left Arrow	Moves cursor left. On the top level of the offline menu, switches back to Ready mode.
Right Arrow	Moves cursor right.
Up Arrow	Increases the value at the cursor position.
Down Arrow	Decreases the value at the cursor position.
[Enter]	Confirms the input.
[Esc]	Cancels input and returns.

Key assignment and special characters

The printer features a specific keyboard assignment table for each setting of the Country configuration parameter. These tables generally match the DOS keyboard assignments. *See "Interfaces" on page 23.*

The [Alt Gr] key has no function. All special characters obtained using this key (e.g. [ ] { } \) and various other special characters (e.g. " × ÷) can be obtained using the [Alt] key. Additional special characters can be output using a sequence of two characters, whereby you must press the [Alt] key when entering the second character.

Some special characters cannot be shown in the display of the printer. In this case, they are replaced by a character similar to the special character.

Note: *When using a scanner ensure that the same character set is set for both the scanner and the printer.*

Country-specific special characters:

The following country-specific special characters are entered with the [Alt] key pressed.

Character	[Alt] + Key											
€	E	E	E	E	E	E	E	E	E	E	E	E
{	7	'			ä	à	ç	7	8	´	7	B
}	0	=			$	$	à	0	9	ç	0	N
[	8	(			ü	è	^	8	è	`	8	F
]	9	)			¨	¨	$	9	+	+	9	G
\	ß	_			<	<	<	+		°	<	Q
|	<	-	`		1	1	&	<		1	´	W
'									\	0		
´			'	`	'	'	ù					í
`		è					µ		´			ý
^		ç					§					š
ˇ	^	^	6	6	§	§	²	§	Ì	<	½	;
¨	.		.	.					.			=
~	+	é			^	^	=	¨	ù	4	¨	+
°			0	0				´	0	0		ř
²	2								2			
³	3								3			
#		"			3	3	"		à	3		X
$								4			4	ů
¢					8	8						
£								3			3	
¤		$										¨
@	q	à			2	2	é	2	ò	2	2	V
µ	m								m	m	m	
¬					6	6				6		
÷	|/|	|/|	|/|	|/|	|/|	|/|	|/|	|/|	|/|	|/|	|/|	|/|
×	|*|	|*|	|*|	|*|	|*|	|*|	|*|	|*|	|*|	|*|	|*|	|*|
	GR	FR	UK	US	SG	SF	BE	SU	IT	SP	DK	CZ

Character	[Alt] + Key
ˇ	č
¸	ž
˙	á
˝	é
˛	´
÷	ú
×	)
đ	S
Đ	D
ł	K
Ł	L
ß	§
&	C
<	,
>	.
*	-
	CZ

GR: Deutschland	SG: Schweiz	IT: Italia
FR: France	SF: Suisse	SP: España
US: USA	BE: Belgie	DK: Danmark
	SU: Suomi	CZ: Ceska republika

Characters between vertical lines (| / |, | * |) are entered with the corresponding keys on the numerical keypad of the keyboard.

A special character in the ZZ column can be entered by first entering the corresponding character in the Z1 column and then entering the character in the Z2 column while pressing the [Alt] button.

Other special characters

ZZ	Z1	Z2
À	`	A
Á	´	A
Â	^	A
Ã	~	A
Ä	¨	A
Å	°	A
Æ	A	E
Ç	,	C
Č	ˇ	C
D'	'	D
È	`	E
É	´	E
Ê	^	E
Ë	¨	E
Ì	`	I
Í	´	I
Î	^	I
Ï	¨	I
IJ	I	J
£	-	L
Ñ	~	N

ZZ	Z1	Z2
Ò	`	O
Ó	´	O
Ô	^	O
Õ	~	O
Ö	¨	O
Ø	/	O
Œ	O	E
Ř	ˇ	R
Š	ˇ	S
Ù	`	U
Ú	´	U
Û	^	U
Ü	¨	U
Ý	´	Y
¥	-	Y
Ž	ˇ	Z
à	`	a
á	´	a
â	^	a
ã	~	a
ä	¨	a

ZZ	Z1	Z2
å	°	a
æ	a	e
ª	_	a
ç	,	c
¢	|	c
č	ˇ	c
ď	'	d
è	`	e
é	´	e
ê	^	e
ë	¨	e
ě	ˇ	e
ì	`	i
í	´	i
î	^	i
ï	¨	i
ij	i	j
ľ	'	l
Ĺ	´	l
ñ	~	n
ň	ˇ	n

ZZ	Z1	Z2
ò	`	o
ó	´	o
ô	^	o
õ	~	o
ö	¨	o
ø	/	o
œ	o	e
°	_	o
ŕ	´	r
ř	ˇ	r
š	ˇ	s
ß	s	s
ť	'	t
ù	`	u
ú	´	u
û	^	u
ü	¨	u
ů	°	u
ý	´	y
ÿ	¨	y
ž	ˇ	z

Example

Entering the character: ñ	1st entry: [~]	2. entry: [Alt] + [n]

WLAN-Card

Function

The WLAN-card 802.11 b/g allows to link a printer to a wireless network which contains a Wireless Access Point. The ad-hoc mode for direct connection between several end devices is not supported.

Note: *When using the WLAN-card the printer port for the wired Ethernet connection is disabled!*

Mounting

Slide the WLAN-card considering the correct orientation of the two-rail guide into the PC Card slot until it stops.

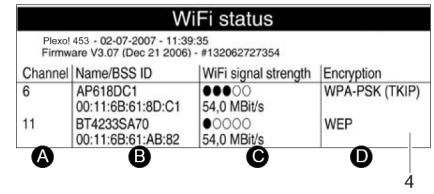
Note: *The function Test > WiFi status allows to print a list (4) of the accessible Wireless Access Points. For the printout material must be loaded which extends across the entire printing width.*

Setup

Set the following parameters of the menu Setup > Interfaces > Wireless LAN 802.11 matching to the configuration of the Access Point.

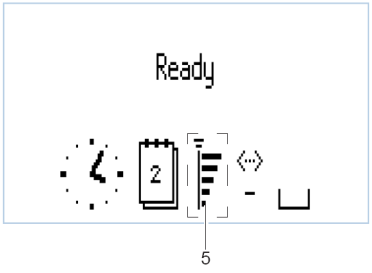
Setup > Interfaces > Wireless LAN 802.11	
SSID	A case sensitive text string of a maximum of 32 alphanumeric characters, used as name of the wireless LAN
Encryption	Selection of the encryption type: Off, WEP 64Bit, WEP 128Bit, WPA-PSK (TKIP) Key: WEP 64 Bit: 10 Hexadecimal.l. characters WEP 128 Bit: 26 Hexadezimal.l. characters WPA-PSK (TKIP): 8 up to 63.

Set the remaining parameters of the menu (DHCP, IP, Mask, Gateway, Network error). Those parameters conform to the parameters of the menu Setup > Interfaces > Ethernet. *See "Interfaces" on page 23.*



A : Channel; frequency range of the Access Point
B : Name of the wireless LAN
MAC address of the Access Points
C : Scale of the WiFi signal strength
Data transfer rate
D : Type of data encryption

To check the reception conditions at the installation location of the printer, in the menu Setup > Status line the widget Wi-Fi signal strength can be activated. So the signal strength will be shown in the printer display (5).



External Operating Panel

Delivery Contents

- External Operating Panel
- Cable SUB-D-9 socket - USB A
- 2 Screws DIN7984-M4x10

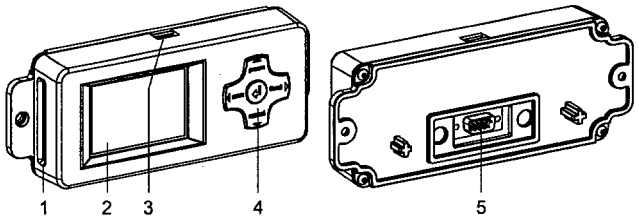
Function

The external operating panel is designed as a build-in module and has the same functionality as the printer integrated operating panel.

Additionally the external operating panel is equipped with a slot (1) for a CompactFlash memory card and a USB master interface (3) to connect a keyboard, a scanner or an USB flash drive.

If both panels are connected to the printer you can use both with the same priority. The displays show the same.

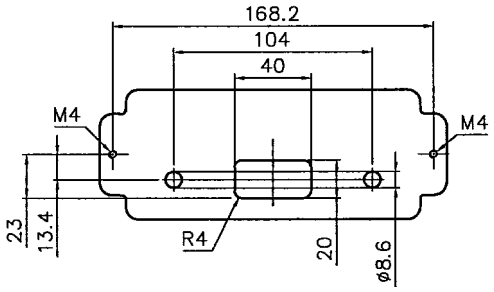
Note: *It is possible to operate the memory cards both in the printer and in the external operating panel. But you can only operate the card slot set in the setup menu "Interfaces > Default card slot" via the operating panels.* *See "Configuration" on page 17.* *When operating via an interface, each card slot can be addressed via a path.*



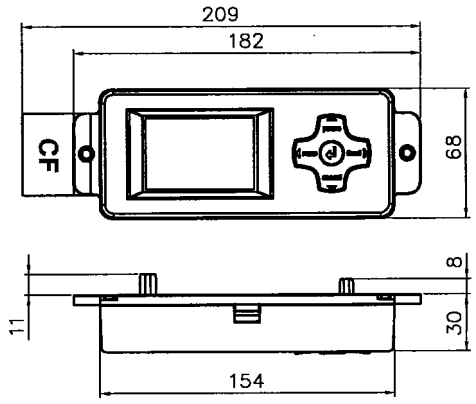
1) Slot for CompactFlash memory card
2) Display
3) USB master interface
4) Navigator pad
5) 9-pin SUB-D plug

Mounting

- Prepare the installation point for the external operating panel as shown in the drilling template. Dimensions are in millimeters.



- Fix the external operating panel with 2 screws (DIN7984-M4x10). Dimensions are in millimeters.



- Connect the delivered cable at the 9-pin SUB-D plug of the panel and at one of the USB interfaces (6) of the printer. The connection may be made while the printer is switched on.

  Directly after plug-in the external operating panel is ready.

9 CU4/CU6 Cutter Accessory

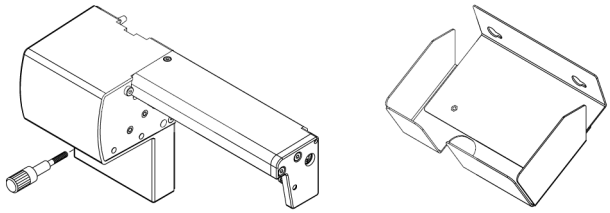
Cutter

The Cutter is an optional peripheral device. With the cutter unit installed, labels or continuous material may be cut when desired.

Cutter options include a choice of: cut after each label, cut after a specific quantity of labels, or cut at the end of a print job. The cutters are powered and controlled directly by the peripheral port of the printer.

For cutter operation, the printer firmware will extend the label for cutting based on specified displacements, then automatically backfeed the label, so that after making a cut, the label roll will be repositioned and ready for printing the next label.

An optional Cutter Tray is available.



Perf/Cutter

The Perf/Cutter is mainly designed for perforating textile materials, for other or thick materials tests are recommended.

The Perf/Cutter is, in comparison to the Cutter, equipped with another linear blade and other electronics.

The perforation distance and the border width of the Perf/Cutter linear blade are custom-designed.

With the Cutter linear blade installed the Perf/Cutter can be used similar to the Cutter.

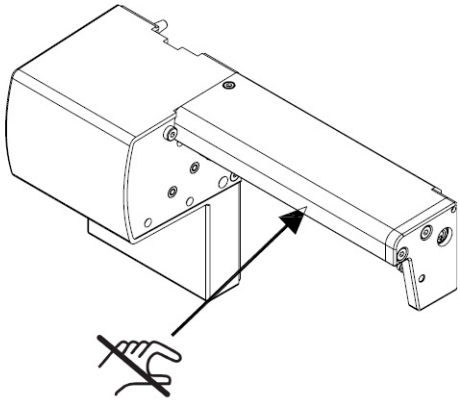
Note: *Because of the different electronics, the Cutter can not be used as Perf/Cutter.*

Safety Instructions

CAUTION

- Switch off the before attaching the cutter!
- Risk of injury, particularly during maintenance, the cutter blades are sharp!
- The cutter may only be used when it is mounted on the printer!
- Do not try to cut any materials which exceed the maximum width or thickness specifications.

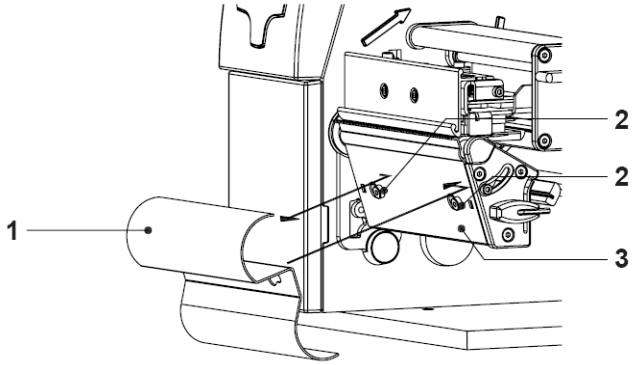
- Do NOT touch the area of the moving blades!



Mounting the Tear-off Plate / Dispense Plate

For cutter operation there has to be mounted a tear-off plate or a dispense plate on the printer, to lead the material through the blades of the cutter.

The printers have such a plate mounted when delivered.

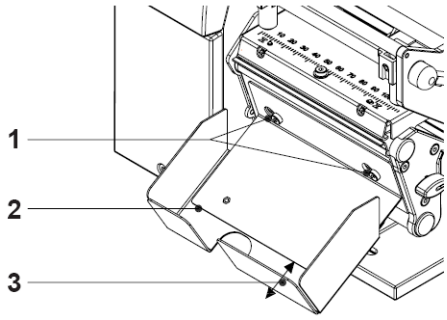


1 To dismount the rewind guide plate loosen the screws (2).

2 Slide the rewind guide plate (1) to the right and remove it.

3 Place the tear-off plate (3) on the screws (2) and tighten these screws.

Mounting the Cutter Tray

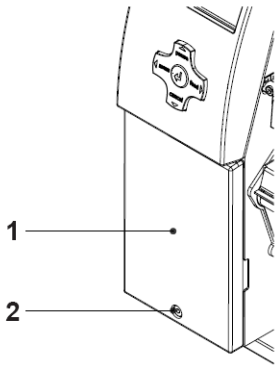


1. Loosen the screws (1).
2. Place the cutter tray (2) on the screws (1) in front of the tear-off plate or the dispense plate and slide it to the left until it stops.
3. Tighten the screws (1).
4. The length of the cutter tray (2) may be modified by moving the slide (3).

Mounting the Cutter

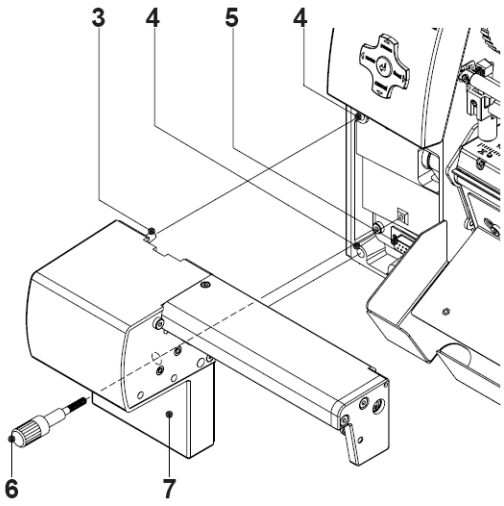
Note: *The printer must be switched off before attaching the cutter!*

In order to install the cutter, the front cover is to be removed.



1. Turn the printer off. Open the media cover.
2. Loosen the screw (2).

3 Remove the front cover (1).



4 Insert the pins (3) of the cutter (7) into the holes (4) of the printer.

5 Press the cutter against the printer. That way the plug of the cutter will be connected to the peripheral port (5) of the printer.

6 Secure the cutter (7) with the screw (6).

Printer Configuration

Once the cutter is connected to the printer, the printer will automatically recognize it on turn on. Once the cutter is recognized, the printer can be operated in cut mode. The printer can be configured to suit the individual requirements of cut mode in the Setup menu. When the cutter is installed, the Cutter menu will appear.

For setting the cutter parameters select Setup > Machine param. > Cutter.

Cut Position

The Cut position parameter allows to adjust the distance between the cut position and the rear edge of the label. Cut position with the initial offset value of "0" causes to cut in the middle of the gap between two labels. If the real cut position deviates from the middle of the gap, the amount of the cut offset can be altered in the range from -9.9mm to +9.9mm. If the cut position value is positive, the media will be advanced before it is cut, that means the distance between the cut edge and the rear edge of the label increases.

The setting should be made when first operating the printer and cutter, or when changes that will effect all print jobs sent to the printer.

Note: *Changes to individual print jobs can be accomplished by changing the software settings.*

The offset values from Cut position and from software are added together for execution. The software value does not replace the Cut position value, but temporarily adjusts it for the current print job.

Under Setup > Print parameters the method for recognizing the start of label and the method of backfeed when using cut mode can be selected.

Label Sensor

For recognizing the start of label the printer offers besides the two standard methods (Gap sensor / Bottom reflect) the setting Endless media. This setting should be used when operating with continuous material in cut mode. That way it is possible to realize the movement forward and the cut after loading the media and then pressing the feed key.

Backfeed

In cut mode, the media will be stopped in a position where the leading edge of the following label has already been moved beyond the printhead. The printer can backfeed the label material from its cut position to the printhead. Therefore, the next label can be printed completely.

A backfeed will always be performed if the parameter is set to "always". If the setting is set to "smart", the backfeed will only be performed if the front label is in its cut position and the printer has not yet received all of the data for printing the following label. Otherwise, the print of the second label will be started, but it will only be completed after the first label has been cut.

Media Loading

Load the transfer ribbon.

Load the label media for cut mode similar to the way it would be loaded for tear-off mode.

Place the media strip between the printhead and the drive roller, so that the beginning of the strip reaches into the cutter.

Operation

Standard Operation

The printer is ready for operation when all connections have been made and all materials are loaded correctly.

After loading the media it is necessary to locate top of form by pressing the feed key. The media will be moved forward and then cut.

Note: *To operate the cutter with continuous material in the printer menu Setup > Print parameters > Label sensor the setting Endless media has to be selected. Otherwise no cut is carried out.*

Locating the top of form is not necessary when the printhead was not opened between print jobs, even if the printer was powered off between print jobs.

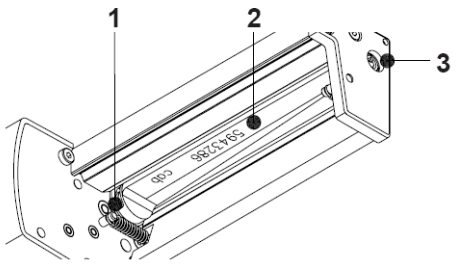
Note: *To operate the cutter the cut mode must be activated in the software! For direct programming use the C-command.*

Once the cutter is mounted on the printer and is ready for operation, the printer can be used in cut mode.

All labels in a print job will be printed without stopping and be cut as chosen in the software: after each label, after a specific quantity of labels, or at the end of a print job.

Lubrication

To guarantee of a normal function of the cutter the cylindrical area (1) of the circular blade (2) must be greased regularly. We recommend for lubrication an All round-High quality Grease.



Note: *Disconnect the printer from the electrical outlet!*

- Hold a greased brush on the cylindrical area and turn the axle (3) with a screwdriver for slotted head screws (slot width 7 mm). During the turning the area is all-around greased.

Cleaning

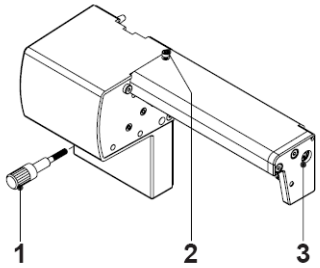
Note: *Before starting any maintenance, turn the printer OFF and disconnect the printer from the electrical outlet!*

During the normal operation of the cutter, particles of dust and paper can accumulate inside the cutter. Remove these particles with a soft brush or a vacuum.

When cutting through the label material instead of the label gap remains of adhesive may accumulate on the blades. If operating in backfeed mode, such remains of adhesive may be deposited on the drive roller as well.

Therefore both, the drive roller and the cutter blades, must be cleaned often.

Caution: *Risk of injury! The cutter blades are sharp!*



1. Loosen the screw (1) and remove the cutter from the printer.
2. For cleaning the drive roller open the print head and remove the media from the printer.
3. For cleaning the circular blade you can turn the axle (3) with a screwdriver for slotted head screws (slot width 7 mm).

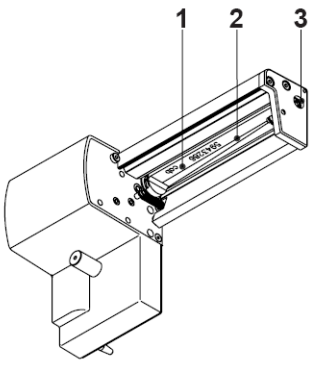
   Note: *With the screw (2) the rotation angle of the circular blade is limited to 120°. If you could not remove all pollutions from the circular blade you can loosen the screw (2) about 5 mm from the profile to turn the axle (3) 360°.*
4. Remove all deposits both at the drive roller and the cutter blades with isopropyl alcohol and a soft cloth.
5. Grease the circular blade. *See "Lubrication" on page 64.*

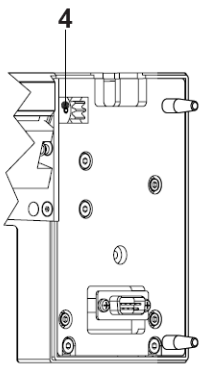
   Note: *When you have loosen the screw (2) the circular blade has to be repositioned after cleaning as described in section Adjusting the Circular Blade and the Clock Wheel.* *See "Adjusting the Circular Blade and the Clock Wheel" on page 67.*

Changing the Blades

1. Turn the printer off and dismount the cutter from the printer.
2. Turn the axle (3) of the circular blade (2) with a screwdriver for slotted head screws (slot width 7 mm) so that the inscription (1) of the blade points downward.

   In this position the set screw (4) on the gear-wheel circular blade can be achieved from the rear of the cutter. Loosen this set screw (4) a few turns.





3 Hang out the spring (13) on the bearing plate (15) and the linear blade (11).

Note: *Attend on the washers (A, B, C) for the circular blade (2) and the linear blade (11) when you dismount the bearing plate. The washers could get lost because of their smallness.*

Caution: *Always keep the linear knife with one hand (11) in its position and push its axle slightly to the mounting plate (9) of the cutter, because the spring (6) is tense.*

4 Unscrew the screws (8) and remove the bearing plate (15) sideways.

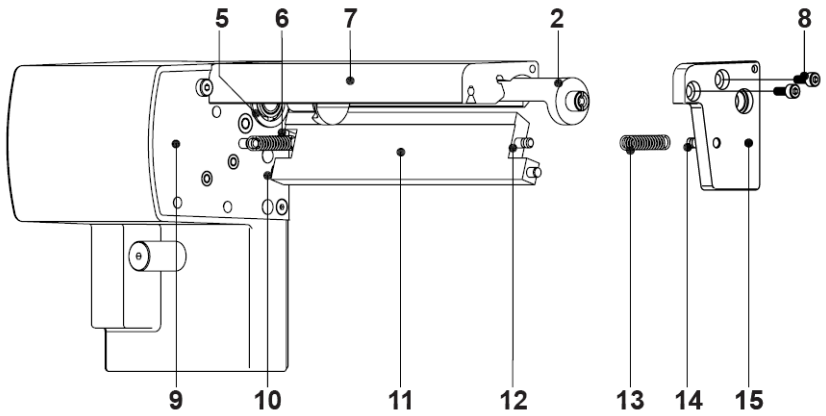
5 Take the circular blade (2) out of its bearing (5). Now you can slacken the spring (6) of the linear blade.

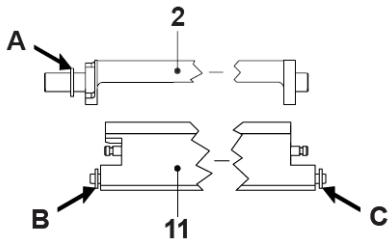
If you don`t want to change the linear blade you can skip to step 9.

6 Take the spring (6) and the linear blade (11) from the mounting plate (9).

7 Insert the axle of the (new) linear blade withe the washer (B) in the bearing (10) of the mounting plate. (The inscription of the linear blade has to point downwards.)

8 Hang the spring (6) without tense on the pins of the mounting plate (9) and the linear blade (11).





9 Turn the linear blade (11) backwards. The spring (6) gets tense. Insert the Axle of the (new) circular blade (2) with the washer (A) in the bearing (5) of the mounting plate.

10 Place the washer (C) on the axle of the linear blade.

11 Hang the spring (13) without tense on the pins of the linear blade (12) and the bearing plate (14).

12 Positioning the bearing plate (14) on the axles (2, 11). The spring (13) gets tense.

Note: *Attend on an accurate position of the bearing plate (15) to the profile (7) of the cutter. A bad positioning could cause undefined cutting edges.*

13 Tighten the bearing plate (15) with the screws (8) at the profile (7). Keep the bearing plate in position and push it slightly to the profile (7) during tightening.

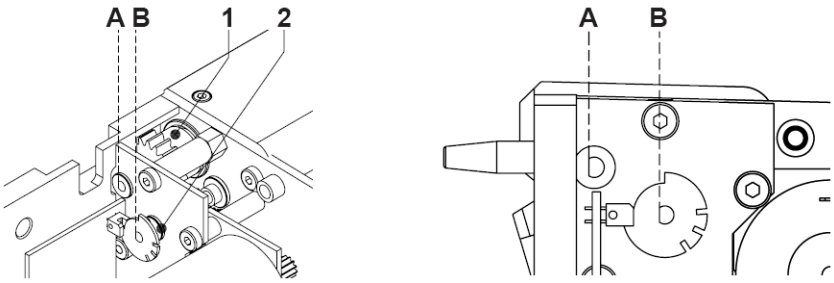
14 Tighten the screw set (4) of the gear-wheel circular blade at the rear of the printer.

15 Grease the circular blade. *See "Lubrication" on page 64.*

Caution: *Before mounting the cutter the circular blade has to be repositioned as described in section Adjusting the Circular Blade and the Clock Wheel.*

Adjusting the Circular Blade and the Clock Wheel

To operate the cutter correctly after cleaning or after changing the blades you have to adjust the circular blade (1) and the clock wheel (2) to another.



1 Unscrew the cover (4) by loosening the screws (3), (5) and (9, at the rear).

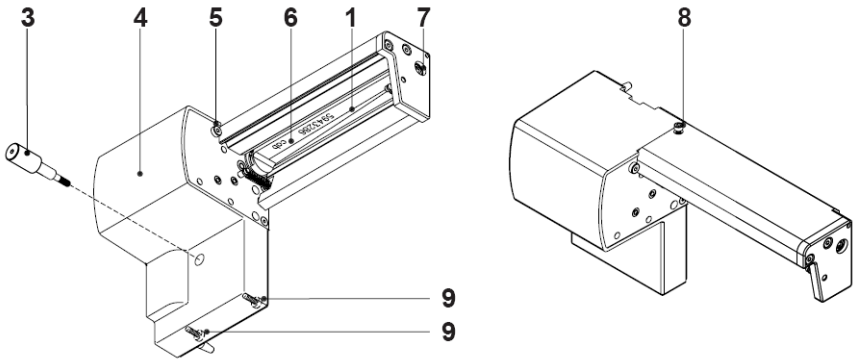
2 Loosen the screw (8) about 5 mm from the profile of the cutter.

3 Turn the axle (7) of the circular blade with a screwdriver for slotted head screws (slot width 7 mm) so that the inscription (4) of the blade points downward.

4 On the axles of the circular blade (1) and the clock wheel (2) you can find a planar area (A, B). Now or after one or two more full turns of the circular blade the axles (1, 2) are justified and the areas (A, B) both are pointing to the rear of the cutter.

5 Tighten the screw (8) for arresting the circular blade.

Note: *If you overtighten screw (8), you could damage the screw thread.*



10 Cleaning

Cleaning Information

Warning: *Risk of death via electric shock! Disconnect the printer from the power supply before performing any maintenance work.*

The printer requires very little maintenance.

It is important to clean the thermal printheads regularly. This guarantees a consistently good printed image and plays a major part in preventing premature wear of the printhead.

Otherwise, the maintenance is limited to monthly cleaning of the device.

Attention: *The printer can be damaged by aggressive cleansers. Do not use abrasive cleaners or solvents for cleaning the external surfaces or modules.*

- Remove dust and paper fluff from the print area with a soft brush or vacuum cleaner.
- The cover of the printer can be cleaned with a standard cleanser.

Cleaning the Print Rollers

Accumulations of dirt on the print rollers may impair the media transport and the print quality.

- Lift the printheads.
- Remove media and transfer ribbon from the printer.
- Remove deposits with roller cleaner and a soft cloth.
- If the roller appears damaged, replace it.

Cleaning the Printheads

Cleaning intervals: every ribbon roll change

Substances may accumulate on the printheads during printing and adversely affect printing, e.g. differences in contrast or vertical stripes.

Attention: *Printheads can be damaged!*

- Do not use sharp or hard objects to clean the printheads.
- Do not touch protective glass layer of the printheads with fingers.

Attention: *Risk of injury from the hot printhead lines. Ensure that the printheads have cooled down before starting cleaning.*

- Lift the printheads.
- Remove media and transfer ribbon from the printer.
- Clean printhead surfaces with a cotton swab dipped in pure alcohol.
- Allow printheads to dry for 2–3 minutes before commissioning the printer.

11 Test Functions

Overview

The printer is equipped with different test functions providing information on:

- the most important configuration parameters
- the fonts available in the printer
- important hardware components and connected peripheral devices
- the print image quality and state of the thermal printhead
- the function of label detection in conjunction with the optical properties of the label medium
- the label data sent from the computer or read out from the memory card

Short status

The Short status menu provides an overview of important status information in the display of the printer.

1. Press the menu button.
2. Select Short status menu.
3. Scroll through the individual lines with the up and down arrow buttons.

You can exit the Short status menu with the Enter button.

The following configuration parameters are displayed in the Short status menu:

Line	Meaning	Example
1	Printer type	Plexo! 453
2	Version number of the printer operating system (firmware)	Firmware V3.11
3	Creation date of firmware	(Aug 9 2007)
4	Version number of the system loader (bootloader)	Bootloader 1.18
5	Creation date of the bootloader	(May 29 2007)

Line	Meaning	Example
6	Serial number of the PCB CPU	PCB #111070553751
7	Revision of the CPU PCB and the CPU	PCB/CPU Rev. 7/4
8	Operative time and number of printed labels	Hours/no. of labels: 156h/3564
9	Previously printed paper lengths with thermal direct printing / thermal transfer printing	Thermal/Transfer 13,54m/269,11m
10	IP address of the label printer when connected to a network	DHCP-IP 192.168.9.13
11	mDNS name of the printer for Zeroconf (Zeroconf is a set of techniques that automatically create a usable IP network without configuration or special servers.)	mDNS: cab-28154.local
12	MAC address of the network adapter on the CPU PCB	MAC 0002E70228F4
13	Type and size of the installed memory medium	CF 30MB
14	Size of the Internal Flash-File-Systems	IFFS 8MB
15	Resolution of the installed thermal printhead	TPH 300dpi,1248dots

Status Print

The Status print function prints a test image containing information on the configuration and status of the printer. The printout occurs using the heat level and print speed specified in the Setup > Print param. menu.

Note: *The printout occurs without taking the label gaps into consideration. This is why endless media are most suitable for this purpose.*

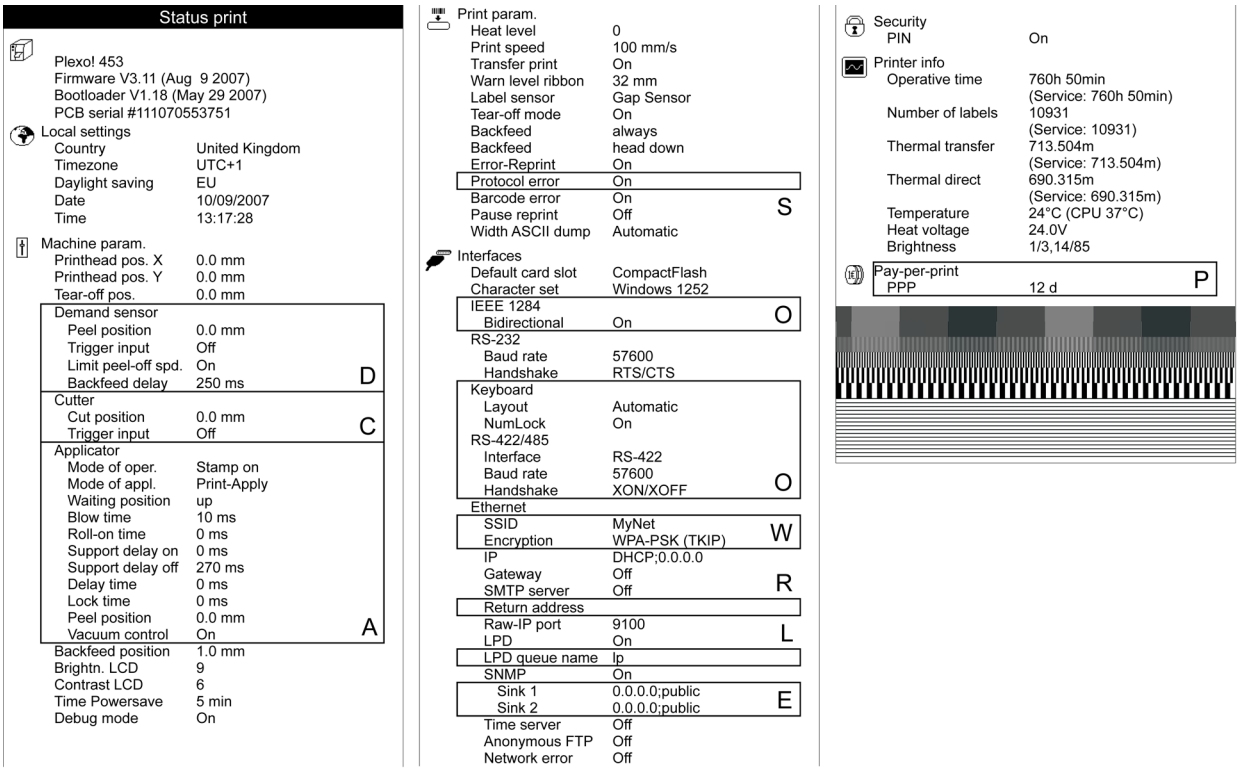
1. Insert printable medium (labels, endless paper) which extends across the entire printing width.
2. If the printout is to occur using thermal transfer printing, insert transfer ribbon with the maximum width.

3 Press the menu button.

4 Select Test > Status print menu.

5 Start printout with the Enter button.

The printout can be cancelled with the cancel button.



The Status print contains the following information:

Symbol	Information
	• Device type and mDNS name of the printer for use in local networks without configuration • Version and creation date of the firmware • Version and creation date of the system loader (bootloader) • Serial number of the PCB CPU
	Current values of selected local settings. *See "Local Settings" on page 17.*
	Current values of selected machine parameters. *See "Machine Parameters" on page 18.*

Symbol	Information
	Current values of selected print parameters. *See "Print Parameters" on page 20.*
	Current values of selected interface parameters. *See "Interfaces" on page 23.*
	Status of PIN activation. *See "Security" on page 26.*
	• Operative time • Number of labels printed • Printed length with thermal transfer printing and thermal direct printing • Current measured values of the printhead temperature and heat voltage • Information on the working points of the label sensor
Line pattern	Lines differing in thickness at various distances. They are used to evaluate the print quality.

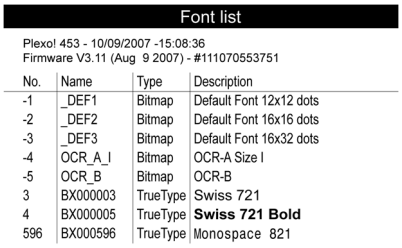
Font List

The Font list function prints the most important parameters of the fonts available in the printer in tabular form. The table contains both the original fonts in the printer and other fonts loaded into the printer. The printout occurs using the heat level and print speed specified in the Setup > Print param. menu.

Note: *The printout occurs without taking the label gaps into consideration. This is why endless media are most suitable for this purpose.*

1. Insert printable medium (labels, endless paper) which extends across the entire printing width.
2. If the printout is to occur using thermal transfer printing, insert transfer ribbon with the maximum width.
3. Press the menu button.
4. Select Test > Font list print menu.
5. Start printout with the Enter button.

The printout can be cancelled with the cancel button.



Font list

Plexo! 453 - 10/09/2007 -15:08:36
Firmware V3.11 (Aug 9 2007) - #111070553751

No.	Name	Type	Description
-1	_DEF1	Bitmap	Default Font 12x12 dots
-2	_DEF2	Bitmap	Default Font 16x16 dots
-3	_DEF3	Bitmap	Default Font 16x32 dots
-4	OCR_A_I	Bitmap	OCR-A Size I
-5	OCR_B	Bitmap	OCR-B
3	BX000003	TrueType	Swiss 721
4	BX000005	TrueType	**Swiss 721 Bold**
596	BX000596	TrueType	Monospace 821

The parameters have the following meaning:

Column	Meaning
No.	ID number of the font required for programming (command T).
Name	Name with which the font is saved internally.
Type	Type of font generation. It provides information on the variability of the font and is important when programming (command T).
Description	Explanations of the font: size, font family. The printout occurs in the appropriate font.

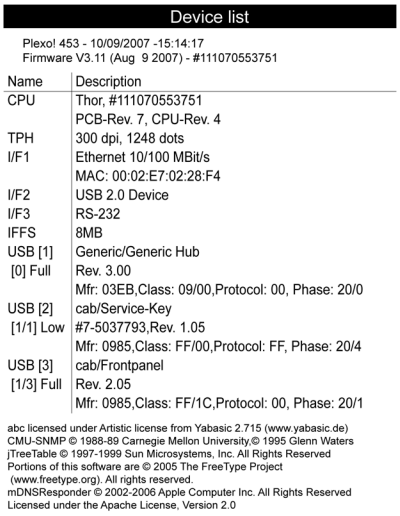
Device List

The Device list function prints out the most important information on hardware components of the printer and connected devices. The printout occurs using the heat level and print speed specified in the Setup > Print param. menu.

Note: *The printout occurs without taking the label gaps into consideration. This is why endless media are most suitable for this purpose.*

1. Insert printable medium (labels, endless paper) which extends across the entire printing width.
2. If the printout is to occur using thermal transfer printing, insert transfer ribbon with the maximum width.
3. Press the menu button.
4. Select Test > Device list print menu.
5. Start printout with the Enter button.

The printout can be cancelled with the cancel button.



Device list

Plexo! 453 - 10/09/2007 -15:14:17
Firmware V3.11 (Aug 9 2007) - #111070553751

Name	Description
CPU	Thor, #111070553751
	PCB-Rev. 7, CPU-Rev. 4
TPH	300 dpi, 1248 dots
I/F1	Ethernet 10/100 MBit/s
	MAC: 00:02:E7:02:28:F4
I/F2	USB 2.0 Device
I/F3	RS-232
IFFS	8MB
USB [1]	Generic/Generic Hub
[0] Full	Rev. 3.00
	Mfr: 03EB,Class: 09/00,Protocol: 00, Phase: 20/0
USB [2]	cab/Service-Key
[1/1] Low	#7-5037793,Rev. 1.05
	Mfr: 0985,Class: FF/00,Protocol: FF, Phase: 20/4
USB [3]	cab/Frontpanel
[1/3] Full	Rev. 2.05
	Mfr: 0985,Class: FF/1C,Protocol: 00, Phase: 20/1

Name	Information
CPU	Type and serial number of the CPU PCB Revision of CPU PCB and CPU
TPH	Resolution and heating point number of the installed thermal printhead.
IF [x]	Type of interfaces installed x: Number of interface
IFFS	Size of the Internal Flash File System
CF / CFEXT / PCCARD / USBMEM	Size and type of an installed external memory medium
USB [a][b/c] Speed	Type and revision of installed USB devices a: number of USB device b: number of USB device to which device a is connected c: number of interface of device b to which device a is connected Speed: data transfer speed (low, full, high)

ASCII Dump Mode

ASCII Dump Mode offers the option of checking incoming control sequences at the interface when working with direct programming. The incoming commands at the printer are printed out as text. In addition, a corresponding error message is printed out immediately after an error occurs.

The printout occurs using the heat level and print speed specified in the Setup > Print param. menu and is started after four lines are have been received.

Note: *The printout occurs without taking the label gaps into consideration and without transfer ribbon checking. This is why endless media are most suitable for this purpose.*

If only media (labels, endless paper) is available which do not cover the entire printing width, the width of the printout can continuously be reduced down to 50 mm with the Width ASCII dump parameter. *See "Print Parameters" on page 20.*

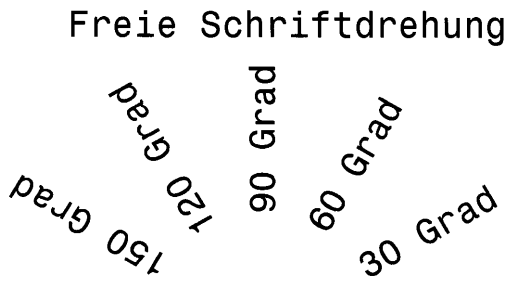
In case of questions about programming, keep a printout of your label file which was created in ASCII Dump Mode handy. The printout can be transmitted clearly via fax.

1. Load printable medium (labels, endless paper).
2. If the printout is to occur using thermal transfer printing, insert transfer ribbon.
3. If the printable medium and/or the transfer ribbon does not cover the entire printing width, reduce the width of the printout accordingly with the Width ASCII dump parameter. *See "Print Parameters" on page 20.*
4. Press the menu button.
5. Select Test > ASCII Dump Mode menu.
6. Switch to ASCII dump mode with the Enter button.
7. Send print jobs.
8. Call up the last few lines of a label description with the feed button.
9. Press the cancel button to cancel the printout or switch to the Ready mode.

The control characters (ASCII code 00 to 31) are presented in the following form:

Code DEC	Code HEX	Druck	Code DEC	Code HEX	Druck	Code DEC	Code HEX	Druck	Code DEC	Code HEX	Druck
00	00	$^{N}_{U}{}_{L}$	08	08	BS	16	10	$^{D}_{L}{}_{E}$	24	18	$^{C}_{A}{}_{N}$
01	01	$^{S}_{O}{}_{H}$	09	09	HT	17	11	$^{D}_{C}{}_{1}$	25	19	EM
02	02	$^{S}_{T}{}_{X}$	10	0A	LF	18	12	$^{D}_{C}{}_{2}$	26	1A	$^{S}_{U}{}_{B}$
03	03	$^{E}_{T}{}_{X}$	11	0B	VT	19	13	$^{D}_{C}{}_{3}$	27	1B	$^{E}_{S}{}_{C}$
04	04	$^{E}_{O}{}_{T}$	12	0C	FF	20	14	$^{D}_{C}{}_{4}$	28	1C	FS
05	05	$^{E}_{N}{}_{Q}$	13	0D	CR	21	15	$^{N}_{A}{}_{K}$	29	1D	GS
06	06	$^{A}_{C}{}_{K}$	14	0E	SO	22	16	$^{S}_{Y}{}_{N}$	30	1E	RS
07	07	$^{B}_{E}{}_{L}$	15	0F	SI	23	17	$^{E}_{T}{}_{B}$	31	1F	US

Example: In the following two figures, the printout in ASCII Dump mode is contrasted with the "normal" printout of a label.




```
J<CL><RF>
H 100,4,D<CL><RF>
S 11;0,0,68,71,106;<CL><RF>
T 20,10,0,596,pt18;Freie Schriftdre
hung <CL><RF>
T 72,54,30,596,pt18;30 Grad<CL><RF>
T 65,46,60,596,pt18;60 Grad<CL><RF>
T 56,42,90,596,pt18;90 Grad<CL><RF>
T 46,44.5,120,596,pt18;120 Grad<CL><RF>
T 38,50.5,150,596,pt18;150 Grad<CL><RF>
A 1<CL><RF>
```

Test grid

The Test grid function prints out the geometric pattern on a background grid. This allows you to assess the evenness of the print quality.

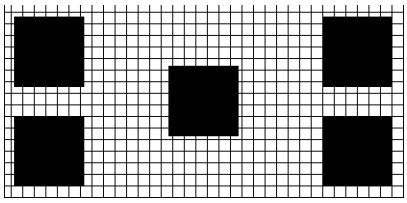
The printout occurs using the heat level and print speed specified in the Setup > Print param. menu.

Note: *The printout occurs without taking the label gaps into consideration. This is why endless media are most suitable for this purpose.*

1. Insert printable medium (labels, endless paper) which extends across the entire printing width.
2. If the printout is to occur using thermal transfer printing, insert transfer ribbon with the maximum width.
3. Press the menu button.
4. Select Test > Test grid menu.
5. Start printout with the Enter button.

   The geometric pattern is printed every 5 seconds once the Test grid function is started. During the pauses between the printouts the printer can be adjusted.

The printout of the test grid can be cancelled with the cancel button.



Label profile

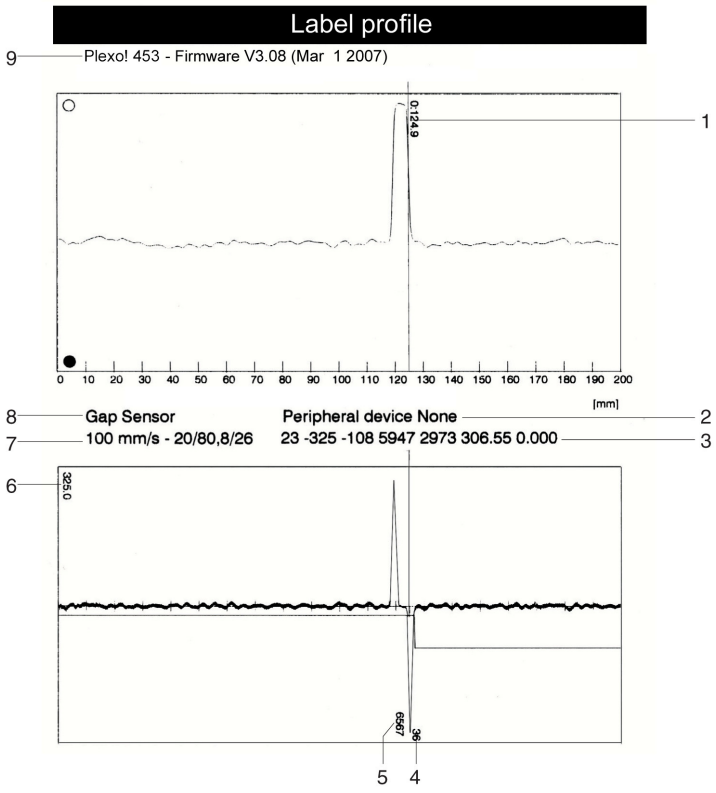
The Label profile function carries out a longer label advance. It saves the values measured by the label sensor here and then prints them out in two diagrams. The printout is used to check label detection in conjunction with the optical properties of the label medium. The printout occurs using the heat level and print speed specified in the Setup > Print param. menu.

Note: *The printout of the diagram occurs without taking the label gaps into consideration. This is why endless media are most suitable for the printout.*

1. Select the label sensor to be tested in the menu Setup > Print param. *See "Print Parameters" on page 20.*
2. Load the label medium to be tested into the printer.
3. Press the menu button.
4. Select Test > Label profile print menu.
5. Start the function with the Enter button.

   The printer performs a longer label advance. The label sensor measures the transparency/reflection capacity of the label material here. The message Test print OK appears in the display once the advance is complete.
6. Insert printable medium (labels, endless paper) which extends across the entire printing width.
7. If the printout is to occur using thermal transfer printing, insert transfer ribbon with the maximum width.
8. Start the diagram printout with the Enter button.

The following figure shows an example label profile. The top diagram shows the gradient determined for label detection. The rise (first derivative) of the gradient is represented in the bottom diagram. The starting end of the label is located at the point where the rise of the gradient exhibits a minimum (see vertical dotted line).



#	Description
1	Coordinate in the direction of paper flow at which the label start was detected
2	Type of peripheral device connected
3	Information for the firmware developer
4	Width of the negative derivative in motor increments
5	Stroke between start and end of the negative derivative
6	Scale factor for the derivative diagram
7	Service information for adjusting the label sensor
8	Method of label detection (transmitted light/reflex bottom)
9	Device name and current firmware version

12 Service Functions

Performing firmware update

The firmware of the printer is saved in a Flash EPROM. You can update the firmware using the following functions:

- Firmware upd.: Copy a firmware file from a computer connected to one of the interfaces of a label printer. *See "Copying New Firmware via Interface" on page 81.*
- Firmw. fr. card: Copy a firmware file from a memory card. *See "FTP Firmware Update" on page 87.*
- FTP firmware update via printer management. *See "FTP Firmware Update" on page 87.*

Copying New Firmware via Interface

1. Press the menu button.
2. Select Service > Firmware upd. menu.
3. Press the Enter button

   The Firmware-Upd message appears in the display.
4. Press the Enter button.
5. If the function Firmware upd. is protected via a PIN, use the arrow buttons to enter the code number and confirm with the Enter button.
6. Start the Windows command prompt on the PC.
7. Configure the serial interface of the PC with the mode command.

   Example : mode com1: baud=115200 parity=n data=8 stop=1
8. Send the firmware file (e.g. 308_7301.x2) to the printer.

   Example : copy /b 308_7301.x2 com1:

   A progress indicator is displayed while the firmware is being copied. OK appears in the display once copying is successfully completed.
9. Press the Enter button.

Copying New Firmware from Memory Medium

1. Select in the menu Setup > Interfaces > Default card slot depending on the used memory medium CompactFlash or USB Memory. *See "Interfaces" on page 23.*
2. Format CompactFlash memory card or USB flash drive in the printer. *See "Format Card" on page 93.* The directories "fonts", "images", "labels" and "misc" are created on the memory medium here.

3 Copy the firmware file to the "misc" directory of the memory medium. This can be done on a computer or via FTP on the printer.

4 Insert the prepared memory medium into the printer.

5 Press the menu button.

6 Select Service > Firmw. fr. card menu.

7 Press the Enter button.

8 If the function Firmw. fr. card is protected via a PIN, use the arrow buttons to enter the code number and confirm with the Enter button

The names of the firmware files found on the memory medium are shown in the display.

9 If several firmware files are found on the memory medium, select the desired file with the up and down buttons.

10 Press the Enter button.

The selected firmware file is copied. A progress indicator is displayed while the firmware is being copied. OK appears in the display once copying is successfully completed.

11 Press the Enter button.

Error Messages during the Firmware Update

If an error occurs during the update, one of the following error codes is shown in the display:

Error code	Meaning
C	Checksum error. /b may have been forgotten in the COPY command or the file is defective.
H	Header error. /b may have been forgotten in the COPY command or the file is defective.
E	EPROM could not be cleared.
V	Programming voltage is too low.
P	Programming error.

Note: *If an error occurs with a firmware update, the old firmware version is no longer usable. Restart programming in this case.*

Save settings

Note: *Access only possible with CF memory card inserted.*

You can save the printer configuration to a CompactFlash memory card with the Save settings function. The configuration will be saved as XML file in the folder \MISC of the CF card. The current date is used as file name YYYYMMDD.XML (e.g. 20060802.XML for a file saved on 08-02-2006).

1 Insert CompactFlash card.

2 Press the menu button.

3 Select Service > Save settings menu.

4 If the function Save settings is protected via a PIN, use the arrow buttons to enter the code number and confirm with the Enter button.

Saving of the configuration data starts. OK is shown in the display when the entire saving procedure is complete.

5 Press the Enter button.

6 Do not remove the memory card until the saving procedure is complete.

An error message appearing during the saving procedure may be caused by an unreadable CF card (e.g. unknown card type, unformatted card). *See "Format Card" on page 93.*

Load settings

Note: *Access only possible with CF memory card inserted.*

You can load a printer configuration previously saved to a CF card into the printer with the Load settings function.

1 Insert CompactFlash card.

2 Press the menu button.

3 Select Service > Load settings menu.

4 If the function Load settings is protected via a PIN, use the arrow buttons to enter the code number and confirm with the Enter button.

5 If several configuration files are found on the memory card, select the desired file with the up and down buttons.

6 Press the Enter button.

Loading of the configuration data starts. OK is shown in the display when the entire loading procedure is complete.

7 Press the Enter button.

8 Do not remove the memory card until the loading procedure is complete.

If an error occurs during the loading procedure, an error message appears in the display. Restart the loading procedure in this case. If an error occurs again, you must enter the configuration parameters via the operating panel.

13 FTP Printer Management

Using the File Transfer Protocol (FTP), you can manage and transfer files on the network via the Ethernet interface. You will require an FTP program (FTP client) which supports the "binary" transfer mode to manage the printer. The printer functions as an FTP server.

FTP printer management is comprised of four functions:

- Management of the memory card installed in the label printer. *See "Memory cards" on page 89.*
- Printer firmware update. *See "Copying New Firmware via Interface" on page 81.*
- IFFS management. *See "Directory Structure of the FTP Server" on page 86.*
- Direct printing via copying .LBL files. *See "Directory Structure of the FTP Server" on page 86.*

FTP logon

To establish an FTP connection, the client must be logged on to the server. The logon type depends on the client. The following information must be specified in any case, however:

- IP address of the label printer
- User name and password

Access to the printer management functions depends on the user name:

User name	Password	Executable functions
anonymous	any	Display and download of the files stored on the memory card. Display of the IFFS contents.
root	printer PIN	Display, upload and download of memory card data, the IFFS contents and FTP firmware update. Label files loaded on the memory card must be of the .LBL type.

After logging on, you can access the FTP server in a manner similar to a Windows folder.

Note: *It is absolutely necessary to define a PIN for FTP access with the username .root.. The initial setting of the PIN can be made via the operating panel of the printer or via the printer website.*

Directory Structure of the FTP Server

The files accessible via FTP are found in several folders:

Folder name	Contents
execute	Printing of label files stored in this folder is started immediately. The files must be of the type .LBL. The corresponding file is deleted once the print job is complete.
system	Firmware file of the printer
Display of the following folders depends on the installed memory media and the defined as the default card slot:	
card	Data of the memory card in the primary card slot. The files are separated into several subfolders based on their type. The structure of the subfolders depends on which card type is primary
cf	Data of the CompactFlash memory card in the printer if the CF card slot is not primary. The files are separated into several subfolders accordingly based on their type. When copying the files to the .cf. folder, type-based sorting occurs automatically in the subfolders.
cfext	Data of the CompactFlash memory card in the external operating panel if the external card slot is not default. The files are separated into several subfolders accordingly based on their type.
iffs	Contents of the IFFS (Internal Flash File System). When logging on with the username "root", the contents of the IFFS can be managed.
pccard	Data of the PC card if the card slot is not primary. This folder does not have a substructure.

Folder name	Contents
usbmem	Data of the USB flash drive if the USB flash drive is not default. The files are separated into several subfolders accordingly based on their type. When copying the files to the "cf" folder, type-based sorting occurs automatically in the subfolders.

FTP Firmware Update

To carry out a firmware update, you must be logged on with the username “root”. *See “FTP logon” on page 85.*

1. Ensure that the label printer is in “Ready” mode. *See “Status tab” on page 28.*
2. Set the “binary” transfer mode in the FTP client.
3. Open the “system” folder.
4. Copy a valid firmware file (e.g. 308_7301.x2) to the "system" folder.

   FTP-Firmware-UPd appears in the display of the printer. The status of the saving procedure is shown by a progress indicator in the display. The printer resets automatically after the update is carried out successfully.

   You can check whether the firmware update was carried out successfully on the “Status” tab of the printer website.

14 Memory cards

You can save graphics, fonts, label descriptions and database information for the long?]term on a memory card.

Note: *Always create a backup copy of the memory card in case of a malfunction.*

Suitable Memory Media

External media

- Type 1 CompactFlash card up to a maximum size of 2 GB in the corresponding card slot of the printer or in the external operating panel (cab accessory)
- PC card (PCMCIA) in the corresponding card slot of the printer
- USB flash drive up to a maximum size of 2 GB at USB master interface

Internal medium

- approx. 5 MB flash memory inside the printer (Internal Flash File System)

Installation

Slide memory card contact-side first into the matching slot as far as it will go.

The rear section of the inserted memory card still extends from the device housing so that it can be removed by hand. Or connect USB flash drive to an USB master interface.

Note: *When the memory cards are slid onto the contact pins, light physical resistance can be felt.*

- Press the menu button. Check whether the Memory card menu is shown in the display.

If the Memory card menu is not shown in the display, it could be because:

- the card slot being used is not selected as the default card slot
- the memory card is not inserted far enough into the card slot
- the memory card is entered incorrectly

Note: *Do not remove a memory medium while it is being accessed. You can configure the printer so that access to a memory medium is indicated on the status line.* *See "Status Line" on page 25.*

Formatting

If the memory medium has not been pre-formatted in a suitable way, it can be formatted it in the following manners:

- Formatting in the printer via the Format card menu item
- Formatting in the printer via the interface with the Mf;name CR command

Directory Structure

On CompactFlash cards some folders are created during formatting.

On USB flash drives connected to the printer, the same directory structure is automatically generated when uploading files to the flash drive :

Folder name	Contents
fonts	Font files
images	Graphic files
labels	Label description files
misc	Firmware, PPP, Setup and TMP files

Note: *PC cards have no folders!*

Writing

The memory medium can be written to in several ways. The most functionally secure way is writing to the card in the printer via a data interface.

Note: *The card in the primary card slot is written to by default. You can write to a card in another slot if you specify the path name of the slot in the file name.*

Example: With direct programming, the command sequence for saving a label (file ABC) has the following form:

```
Ms LBL; ABC                    Command for saving the file ABC
J                              |
H 100,0,T                      |
S l1;0,0,68,71,104             | Contents of the file ABC
T 10,10,0,3,pt15;memory card   |
A 1[NOPRINT]                   |
Ms LBL                         End of save command
```

- After transfer of the command sequence, the file ABC is saved with the commands from J to A.
- Only one label is printed each time the file ABC is called up.
- The [NOPRINT] parameter in command A suppresses the printing of a label when the file is saved.

- To print the label a variable number of times, put command A after the ending Ms command.

Memory Media Functions in the Offline Menu

Accessing the Memory card menu is only possible if a memory card is installed.

You can still only operate the card slot set in the menu Interfaces > Default card slot via the operating panel. When operating via an interface, each card slot can be addressed via a path. *See "Interfaces" on page 23.*

Label from Card

Labels whose descriptions are saved on the memory medium can be printed using the Label from card function.

1. Select the Label from card function in the Memory card menu.
2. Press the Enter button.

   The name of the label found at the top of the index of the memory medium is displayed.
3. Select the desired label in the index of the medium with the arrow buttons.
4. Press the Enter button.

   If a label is selected which was saved with a fixed label quantity, the print job is started immediately.

   For label descriptions with a variable label quantity, a request to enter the label quantity is displayed.

   If additional input on the label description is required, the display requests to enter the variable data.
5. Enter the label quantity/variable data with the following buttons:
   - Left arrow - cursor left
   - Right arrow - cursor right
   - Up arrow - increase value at cursor position by 1 or select next letter in alphabet
   - Down arrow - decrease value at cursor position by 1 or select previous letter in alphabet
6. Press the Enter button briefly to confirm the input and start the print job.

   Canceling input: Press and hold the Enter button at least 2 seconds.

Print Directory

You can print out the index of the installed memory card with the Print directory function.

1. Insert printable medium (labels, endless paper) which extends across the entire printing width.
2. If the printout is to occur using thermal transfer printing, insert transfer ribbon with the maximum width.
3. Press the menu button.
4. Select the Print directory function in the Memory card menu.
5. Start printout with the Enter button.

The printout contains:

- the name of the memory medium
- information on the saved files
- the size of the available memory area

Copy Memory Card

All the data from one memory medium can be copied to another one of the same type with the Copy memory card function. Copying between memory media with different memory capacities is possible. You can also use memory media which already contain data as a destination medium.

Caution: *Data loss when copying.*

If files with the same name are found on the original and copy media, the files on the copy medium are overwritten without any prior notification. In addition, removal of the memory medium during the copying procedure leads to data loss.

- Check files for the same name before copying.
- Only remove or insert memory media when so instructed in the display.

You can prevent unauthorized copying of memory cards by using a PIN. *See "Security" on page 26.*

1. Insert original card.
2. Press the menu button.
3. Select Memory card > Copy memory card with the right and left arrow buttons.
4. Press the Enter button.

   A selection field with the selection No appears in the display.
5. Use the up and down arrow buttons to select Yes.
6. Press the Enter button.

7 If the function Copy memory card is protected via a PIN, use the arrow buttons to enter the code number and confirm with the Enter button.

The copying procedure starts. When copying larger amounts of data, the copying procedure is carried out in several copying cycles. An increasing progress indicator is shown in the display during a copy cycle. The Insert dest. instruction then appears.

8 Remove original card and insert the card to be written to.

The data read from the original card is transferred to the copy card. The progress indicator in the display shrinks during this process. If only part of the data from the original card was read out, the Insert source instruction appears.

9 Remove copy card and insert original card again.

The next copy cycle begins.

10 Repeat the previous two steps until all data has been copied.

OK is shown in the display when the entire copying procedure is complete.

11 Press the Enter button.

If the card to be written to can no longer accept data during the copying procedure, the Card full error message appears in the display.

Format Card

You can delete all data from a memory card with the Format card function. This reformats the memory card. This is why you can also use the Format card function if the Unknown card or Structural err. error message was output when using the card.

You can prevent unauthorized deleting of memory cards by using a PIN. *See "Security" on page 26.*

1 Insert a memory card.

2 Press the menu button.

3 Select Memory card > Format card with the right and left arrow buttons.

4 Press the Enter button.

A selection field with the selection No appears in the display.

5 Use the up and down buttons to select Yes.

6 Press the Enter button.

7 If the function Format card is protected via a PIN, use the arrow buttons to enter the code number and confirm with the Enter button.

The deleting procedure starts.

8 Do not remove the card from the printer during the deleting procedure.

The memory volume of the card is shown in the display as soon as the deleting procedure is complete.

9 Press any button.

Printing file contents

The label files found on a memory card consist of a sequence of printer commands. You can print these command sequences in the form of text with the ASCII dump (Card) function.

1 Insert printable medium (labels, endless paper) which extends across the entire printing width.

2 If the printout is to occur using thermal transfer printing, insert transfer ribbon with the maximum width.

3 Insert a memory card.

4 Press the menu button.

5 Select the ASCII dump (Card) function in the Memory card menu.

6 Press the Enter button.

The index of the memory card is shown in the display.

7 Select the desired label file in the index of the card with the up and down buttons.

8 Start printout with the Enter button.

The data printout is started after four lines are received. For this reason, it is often necessary to call up the last few lines of a label description with the feed button.

You can cancel the printout of the label description with the cancel button.

15 Fault Correction

Types of Errors

The diagnostic system indicates on the screen if an error has occurred. The printer is set into one of the three possible error states according to the type of error.

State	Display	Key	Remark
Correctable error		**pause** flashes **cancel** lights	*See "Key Functions" on page 14.*
Irrecoverable error		**cancel** flashes	
Critical fault			

Attention: *State "Correctable error" : The labels, which are printed by the lower printer but not yet printed by the upper printhead when the error occurs, cannot be repeated by the printer. So the amount of the printed label will be reduced within the print job.*

- If necessary print more labels in a new job.

If the print job contains counters, after pressing the pause key the print job would be resumed with erroneous counter values.

- Quit the print job with the cancel key.
- Start a new print job with adapted counter values.

Problem Solution

Problem	Cause	Remedy
Transfer ribbon creases	Head locking system not adjusted	Adjust the head locking system. *See "Loading Labels from Roll" on page 41.*
	Transfer ribbon deflection not adjusted	Adjust the transfer ribbon deflection. *See "Setting the Feed Path of the Transfer Ribbon" on page 45.*
	Transfer ribbon too wide	Use a transfer ribbon slightly wider than the width of label.
Print image has smears or voids	Printhead is dirty	Clean the printhead. *See "Cleaning the Printheads" on page 69.*
	Temperature too high	Decrease temperature via software.
	Unsuitable combination of labels and transfer ribbon	Use different type of ribbon.
Printer prints a sequence of characters instead of the label format	Printer is in ASCII dump mode	Cancel the ASCII dump mode.
Printer transports label media, but transfer ribbon does not move	Transfer ribbon incorrectly inserted.	Check and, if necessary, correct the transfer ribbon web and the orientation of the label side.
	Unsuitable combination of labels and transfer ribbon	Use different type of ribbon.
Printer only prints each second label	Setting of the label height in the software is too large.	Change the label height in the software.

Problem	Cause	Remedy
Vertical white lines in the print image	Printhead is dirty	Clean the printhead. *See "Cleaning the Printheads" on page 69.*
	Printhead is defective (failure of heat elements)	Change the printhead.
Print image is irregular, one side is lighter	Printhead is dirty	Clean the printhead. *See "Cleaning the Printheads" on page 69.*

Error Messages and Fault Correction

Error message	Cause	Remedy
`ADC malfunction`	Hardware error	Switch the printer off and then on. If error recurs call service.
`Barcode error`	Invalid barcode content, e.g. alphanumeric characters in a numerical barcode	Correct the barcode content.
`Barcode too big`	The barcode is too big for the allocated area of the label	Reduce the size of the barcode or move it.
`Battery low`	Battery of the PC card is flat	Replace battery in the PC card.
`Buffer overflow`	The input buffer memory is full and the computer is still transmitting data.	Use data transmission via protocol (preferably RTS/CTS).
`Card full`	No more data can be stored on the memory card	Replace card.

Error message	Cause	Remedy
Cutter blocked	Cutter cannot return into its home position and stays in an undefined position	Switch off the printer. Remove material. Switch on the printer. Restart print job. Change material
	No cutter function	Switch the printer off and then on. If error recurs call service.
Cutter jammed	The cutter is unable to cut the labels but is able to return into its home position	Press the **cancel** key. Change material.
Device not conn.	Programming addresses a non-existent device	Either connect this device or correct the programming.
File not found	Requested file is not on the card	Check the contents of the card.
Font not found	Error with the selected download font	Cancel current print job, change font.
FPGA malfunction	Hardware error	Switch the printer off and then on. If error recurs call service.
Head error	Hardware error	Switch the printer off and then on. If error recurs replace printhead.
Head open	Printhead not locked	Lock printhead.
Head too hot	Printhead is overheated	After pausing the print job will be continued automatically. If the fault recurs repeatedly, reduce the heat level or the print speed via software.
Invalid setup	Error in the configuration memory	Re-configure printer. If error recurs call service.
Memory overflow	Current print job contains too much information, e.g. selected font, large graphics	Cancel current print job.m Reduce amount of data to be printed.

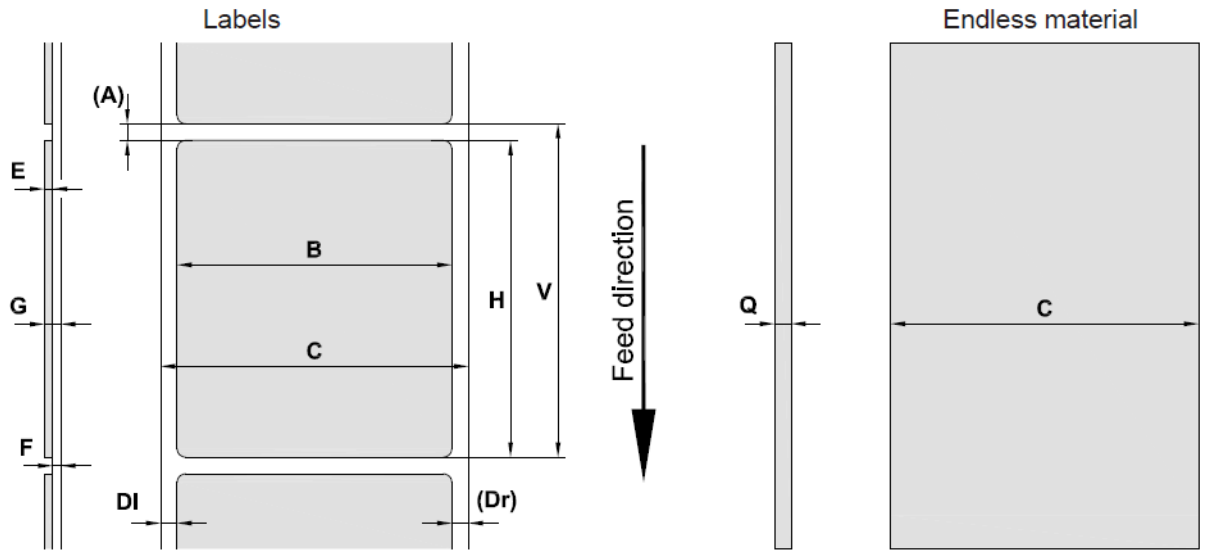
Error message	Cause	Remedy
`Name exists`	Duplicate usage of field name in the direct programming	Correct programming
`No DHCP server`	The printer is configured for DHCP, but there is no DHCP server, or the DHCP server is not currently available.	Switch off DHCP in the configuration, and assign a fixed IP address. Please contact your network administrator.
`No label found`	There are labels missing on the label material	Press **pause**key repeatedly until printer recognizes the next label on the material.
	The label format as set in the software does not correspond with the real label format	Cancel current print job.Change the label format set in the software. Restart print job.
`No label size`	The size of the label is not defined in the programming.	Check programming.
`No Link`	No network link	Check network cable and connector. Please contact your network administrator.
		For operation without network connection set parameter "Network error" to `Off`. *See "Configuration" on page 17.*
`No record found`	Refers to the optional memory card; database access error	Check programming and card contents.
`No SMTP server`	The printer is configured for SMTP, but there is no SMTP server, or the SMTP server is not currently available.	Switch off SMTP in the configuration. **Caution!** Then a warning cannot be sent by e-mail (EAlert). Please contact your network administrator.

Error message	Cause	Remedy
No Timeserver	Timeserver is selected in the configuration, but there is no Timeserver, or the Timeserver is not currently available.	Switch off Timeserver in the configuration. Please contact your network administrator.
`Out of paper`	Out of label roll	Load labels.
	Error in the paper feed	Check paper feed.
`Out of ribbon`	Out of transfer ribbon	Insert new transfer ribbon.
	Transfer ribbon melted during printing	Cancel current print job. Change the heat level via software. Clean the printhead. *See "Cleaning the Printheads" on page 69.* Load transfer ribbon Restart print job.
	The printer is loaded with thermal labels, but the software is set to transfer printing	Cancel current print job. Set software to direct thermal printing. Restart print job.
`Protocol error`	Printer has received an unknown or invalid command from the computer.	Press the **pause** key to skip the command or press the **cancel** key to cancel the print job.
`Read error`	Read error when reading from the memory card	Check data of the card. Backup data, reformat card.
`Remove ribbon`	Transfer ribbon is loaded although the printer is set to direct thermal printing	for direct thermal printing remove ribbon
		for thermal transfer printing set the printer in the configuration or in the software to transfer printing

Error message	Cause	Remedy
`Structural err.`	Error in the file list of the memory card, data access is uncertain.	Format memory card.
`Unknown card`	Card not formatted. Type of card not supported	Format card, use different type of card.
`USB error Device stalled`	A USB device has been detected, but it is not working.	Do not use the USB device.
`USB error Too much current`	The USB device consumes too much current.	Do not use the USB device.
`USB error Unknown device`	Failure to detect USB device	Do not use the USB device.
`Voltage error`	Hardware error	Switch the printer off and then on. If error recurs call service. It is shown which voltage has failed. Please note.
`Write error`	Hardware error	Repeat the write process, reformat card.
`Write protected`	PC card write protection is activated.	Deactivate the write protection.
`Wrong revision`	Error when updating the firmware. Firmware not compatible with the hardware version	Load the compatible firmware.

16 Media

Media Dimensions

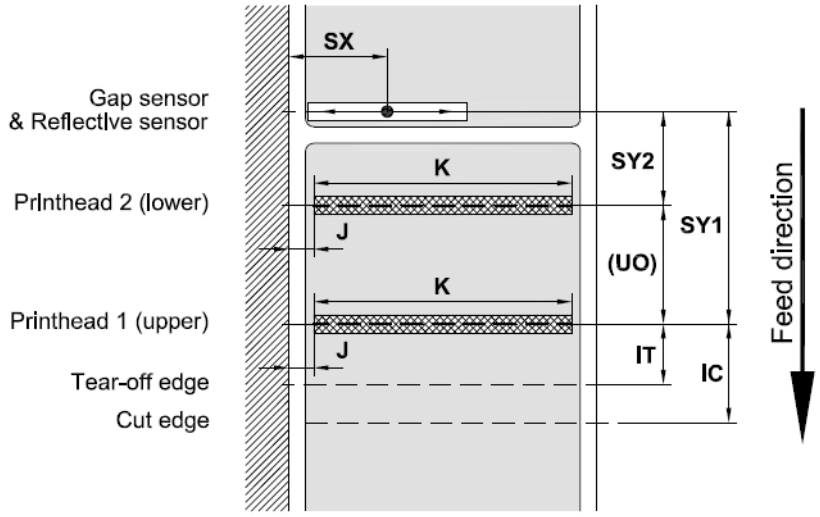


Dim.	Designation	Dim. in mm	
		Plexo! 453	Plexo! 653
B	Label width	20 - 116	50 - 176
H	Label height	20 - 2000	20 - 1500
-	Tear-off length	> 30	
-	Cut length with cutter with perforation cutter	 > 2 > 12	
-	Perforation length	> 2	
A	Label distance	> 2	
C	Width of liner or endless material	25 - 120	50 -180
Dl	Left margin	≥ 0	

Dim.	Designation	Dim. in mm	
		Plexo! 453	Plexo! 653
Dr	Right margin	≥ 0	
E	Label thickness	0.025 - 0.7	
F	Liner thickness	0.03 - 0.1	
G	Thickness label with liner	0.055 - 0.8	
Q	Thickness endless material	0.03 - 0.8	
V	Label feed	> 22	

- Small label sizes, thin materials or strong glue can lead to limitations. Critical applications need to be tested and cleared.
- Note the bending stiffness ! Material must be flexible to follow the radius of the print roller!

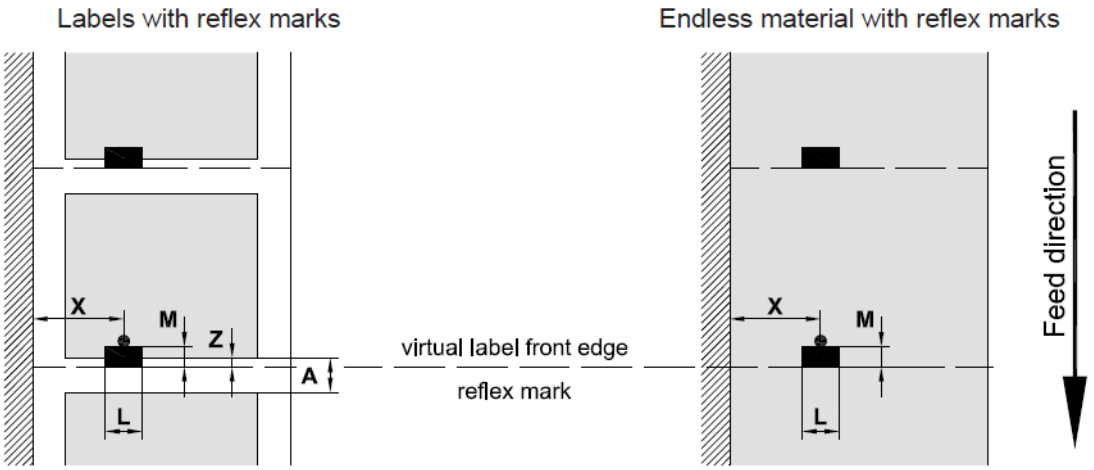
Device Dimensions



Dim.	Designation	Dim. in mm	
		Plexo! 453	Plexo! 653
IC	Distance printhead 1 (upper) - cut edge - with cutter CU	18.8	

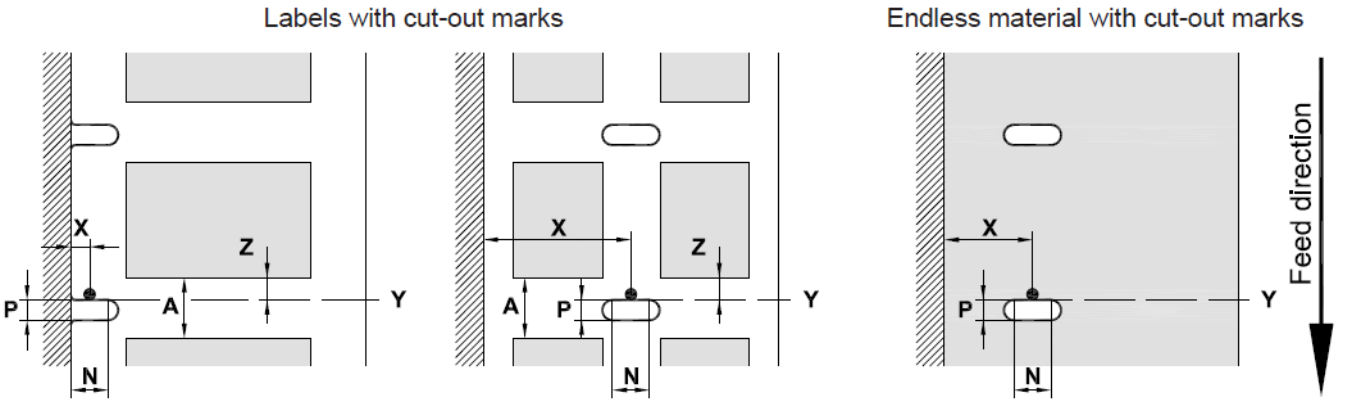
Dim.	Designation	Dim. in mm	
		Plexo! 453	Plexo! 653
IT	Distance printhead 1 (upper) - tear-off edge	13.5	
J	Distance 1st heating point - material edge	2	3
K	Print width	105.6	162.6
SX	Distance gap/reflective sensor - material edge i.e. permissible distance of reflex or cut-out marks to the material edge	5 - 53	
SY1	Distance gap/reflective sensor - printhead 1 (upper)	135.3	
SY2	Distance gap/reflective sensor - printhead 2 (lower)	46.4	
UO	Distance printhead 2 (lower) - printhead 1 (upper)	88.9	

Reflex Mark Dimensions



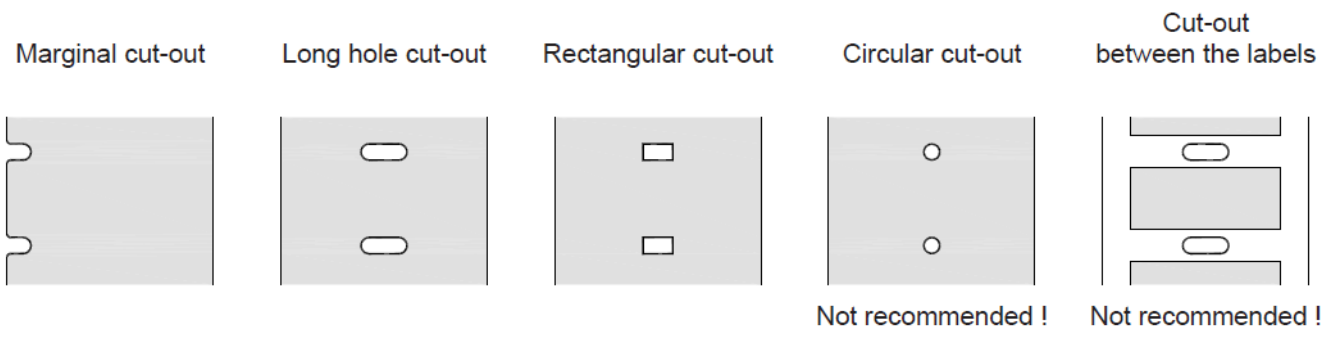
Dim.	Designation	Dim. in mm
A	Label distance	> 2
L	Width of reflex mark	> 5
M	Height of reflex mark	3 - 10
X	Distance virtual label front edge - actual label front edge • Adjust software settings	0 up to A / recomm. : 0
• Reflex marks must be on the back side of the material (liner). • Label sensor for reflex marks on the top side on request. • Specification is valid for black marks. • Recognition of colored marks may fail. Preliminary tests are needed.		

Cut-out Mark Dimensions



for marginal cut-out marks
minimum liner thickness 0,06 mm

Dim.	Designation	Dim. in mm
A	Label distance	> 2
N	Width of cut-out mark for marginal cut-out	> 5 > 8
P	Height of cut-out mark	2 - 10
X	Distance mark - material edge	5 - 53
Y	Sensor recognized virtual label front edge with gap sensor recognition	Rear edge cut-out
Z	Distance recognized front edge - actual label front edge • Adjust software settings	0 up to A-P



Index

B

Backfeed 48

C

Cleaning
- print roller 69
- printhead 69

Cleaning instructions 69
Connecting 7
Contents of delivery 6
Control Panel 11
Correctable error 13
Critical error 14
Cut Mode 47
Cut-out marks 107

D

Designing the print image 47
Device dimensions 104
Device overview 3

E

Endless material 103
Environment 2
Errors
- correction 97
- display 95
- messages 97
- states 95
- types 95

G

Graphic display 11

H

Head locking system, setting 43

I

Important information 1
Intended use 1
Irrecoverable error 13

K

Key
- cancel 15
- enter 16
- feed 14
- menu 14
- pause 15

Key functions
- offline menu 14
- print mode 14

L

Loading labels from roll 41
Loading material 41
Loading transfer ribbon 44
Loss of data 49
Loss of material 48

O

Offline menu 14

P

Pause 13
Pause on media low 49
Power save mode 14
Print roller, cleaning 69
Printer states 12
Printhead
- cleaning 69
- damage 47

Printing label 13
Problem solution 96

R

Ready 12
Reflex marks 106
RS-232 interface 49

S

Safety Instructions 1
Service work 2
Setting-up 6
Supply voltage 7
Switching on 9
Symbol displays 11

T

Transfer ribbon deflection, setting 45

U

Unpacking 6

V

Voltage 1