Intermec

Service Manual

EasyCoder®
PD41/PD42 Printer

Intermec

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EasyCoder®
PD41/PD42 Printer

Intermec Technologies Corporation

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Contents

Before You Begin

This section provides you with safety information, technical support information, and sources for additional product information.

Safety Summary

Your safety is extremely important. Read and follow all warnings and cautions in this document before handling and operating Intermec equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

Do Not Repair or Adjust Alone

Do not repair or adjust energized equipment alone under any circumstances. Someone capable of providing first aid must always be present for your safety.

First Aid

Always obtain first aid or medical attention immediately after an injury. Never neglect an injury, no matter how slight it seems.

Resuscitation

Begin resuscitation immediately if someone is injured and stops breathing. Any delay could result in death. To work on or near high voltage, you should be familiar with approved industrial first aid methods.

Energized Equipment

Never work on energized equipment unless authorized by a responsible authority. Energized electrical equipment is dangerous. Electrical shock from energized equipment can cause death. If you must perform authorized emergency work on energized equipment, be sure that you comply strictly with approved safety regulations.

Sicherheitsübersicht

Ihre Sicherheit ist äußerst wichtig. Lesen und befolgen Sie alle Warn- und Vorsichtshinweise in diesem Dokument, bevor Sie Intermec-Geräte verwenden und betreiben. Falls die Sicherheitswarnungen und Vorsichtshinweise nicht befolgt werden, kann es zu ernsthaften Verletzungen sowie Geräteschäden und Datenverlusten kommen.

Nicht alleine Reparaturen oder Einstellungen durchführen

Reparieren oder justieren Sie niemals alleine stromführende Geräte. Aus Sicherheitsgründen muss eine zweite Person anwesend sein, die erste Hilfe leisten kann.

Erste Hilfe

Nach einer Verletzung unverzüglich erste Hilfe oder medizinische Betreuung aufsuchen. Verletzungen dürfen nicht vernachlässigt werden, auch wenn sie noch so unbedeutend erscheinen.

Wiederbelebung

Wiederbelebungsversuche müssen unverzüglich eingeleitet werden, falls jemand verletzt wird und die Atmung aussetzt. Verzögerungen können zum Tod führen. Bei Arbeiten an oder in der Nähe von Hochspannung müssen Ihnen die zugelassenen Erste-Hilfe-Methoden vertraut sein.

Stromführende Geräte

Niemals an stromführenden Geräten arbeiten, es sei denn Sie wurden von einer verantwortlichen Stelle dazu berechtigt. Stromführende Geräte sind gefährlich. Stromschläge durch stromführende Geräte können zu tödlichen Verletzungen führen. Falls zugelassene Notreparaturen an stromführenden Geräten vorgenommen werden müssen, ist darauf zu achten, dass die genehmigten Sicherheitsvorschriften strikt eingehalten werden.

Safety Information

Your safety is extremely important. Read and follow all warnings and cautions in this document before handling and operating Intermec equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

This section explains how to identify and understand dangers, warnings, cautions, and notes that are in this document. You may also see icons that tell you when to follow ESD procedures and when to take special precautions for handling optical parts.

A warning alerts you of an operating procedure, practice, condition, or statement that must be strictly observed to avoid death or serious injury to the persons working on the equipment.

Warnung: Ein Warnhinweis macht Sie auf ein Betriebsverfahren, eine Praktik, einen Zustand oder eine Anweisung aufmerksam, die genauestens befolgt werden muss, um schwere oder tödliche Verletzungen der an den Maschinen arbeitenden Personen zu vermeiden.

A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

Vorsicht: Ein Vorsichtshinweis macht Sie auf ein Betriebsverfahren, eine Praktik, einen Zustand oder eine Anweisung aufmerksam, die genauestens befolgt werden muss, um Schäden oder eine Zerstörung der Maschine bzw. die Zerstörung oder den Verlust von Daten zu vermeiden.

This icon appears at the beginning of any procedure in this manual that could cause you to touch components (such as printed circuit boards) that are susceptible to damage from electrostatic discharge (ESD). When you see this icon, you must follow standard ESD guidelines to avoid damaging the equipment you are servicing.

Because finger oils can impede the performance of scanner parts and dissolve the reflective coating of the plastic mirrors, always wear finger cots or non-powdered latex gloves when handling optical parts.

Note: Notes either provide extra information about a topic or contain special instructions for handling a particular condition or set of circumstances.

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at **www.intermec.com** and click **Support** > **Returns and Repairs** > **Warranty**.

Disclaimer of warranties: The sample code included in this document is presented for reference only. The code does not necessarily represent complete, tested programs. The code is provided "as is with all faults." All warranties are expressly disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.

Web Support

Visit the Intermec web site at **www.intermec.com** to download our current manuals (in PDF). To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

Visit the Intermec technical knowledge base (Knowledge Central) at **www.intermec.com** and click **Support** > **Knowledge Central** to review technical information or to request technical support for your Intermec product.

Telephone Support

Services	Description	In the USA and Canada call 1-800-755-5505 and choose this option
Order Intermec products	• Place an order. • Ask about an existing order.	1 and then choose 2
Order Intermec media	Order printer labels and ribbons.	1 and then choose 1
Order spare parts	Order spare parts.	1 or 2 and then choose 4
Technical Support	Talk to technical support about your Intermec product.	2 and then choose 2
Service	• Get a return authorization number for authorized service center repair. • Request an on-site repair technician.	2 and then choose 1
Service contracts	• Ask about an existing contract. • Renew a contract. • Inquire about repair billing or other service invoicing questions.	1 or 2 and then choose 3

Outside the U.S.A. and Canada, contact your local Intermec representative. To search for your local representative, from the Intermec web site, click **About Us** > **Contact Us**.

Service Location Support

For the most current listing of service locations, click **Support** > **Returns and Repairs** > **Repair Locations**.

For technical support in South Korea, use the after service locations listed below:

AWOO Systems
102-1304 SK Ventium
522 Dangjung-dong
Gunpo-si, Gyeonggi-do Korea, South 435-776
Contact: Mr. Sinbum Kang
Telephone: +82-31-436-1191
E-mail: **sbkang@awoo.co.kr**

IN Information System PTD LTD
6th Floor
Daegu Venture Center Bldg 95
Shinchun 3 Dong
Donggu, Daegu City, Korea
E-mail: **jmyou@idif.co.kr** or **korlim@gw.idif.co.kr**

Who Should Read This Manual

This document is written for the person who is responsible for installing, configuring, and maintaining the EasyCoder PD41/PD42 printer.

This document provides you with information about the features of the EasyCoder PD41/PD42 printer, and how to install, configure, operate, maintain, and troubleshoot it.

Before you work with the EasyCoder PD41/PD42 printer, you should be familiar with your network and general networking terms, such as IP address.

Related Documents

This table contains a list of related Intermec documents and their part numbers.

Table

Document Title	Part Number
EasyCoder PD41 User's Guide	*1-960652-xx*
EasyCoder PD42 User's Guide	*934-009-xxx*
Intermec Fingerprint Command Reference Manual	*937-005-xxx*
Intermec Printer Language (IPL) Command Reference Manual	*937-007-xxx*
Intermec Fingerprint Developer's Guide	*934-019-xxx*
Intermec Printer Language (IPL) Developer's Guide	*934-013-xxx*

The Intermec web site at **www.intermec.com** contains our documents (as PDF files) that you can download for free.

To download documents

1. Visit the Intermec web site at **www.intermec.com**.
2. Click **Support** > **Manuals**.
3. In the **Select a Product** field, choose the product whose documentation you want to download.

To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

Other Copyright Information

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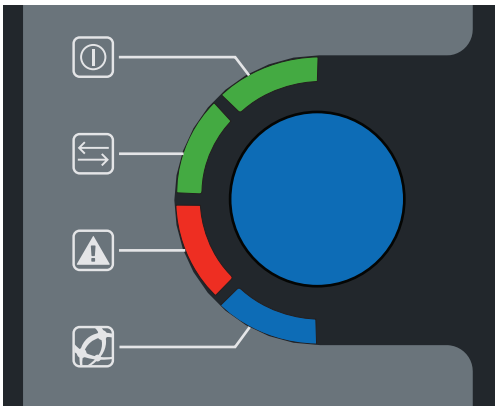
1 Troubleshooting the PD41/ PD42

This chapter describes how to troubleshoot the EasyCoder PD41/PD42 printer and how to identify and replace faulty parts. Do not attempt to repair the power supply or any circuit boards.

Error Handling

The EasyCoder PD41/PD42 printer communicates errors to the user via the red Error LED and the blue Ready-to-Work LED on the front panel. When an error condition occurs, these two will be turned on or flash depending on the cause of the error. On the PD42, additional error information is communicated through the display.



LEDs and the Print button

When all errors have been cleared, the Error LED is turned off, the error message disappears from the display and the Ready-to-Work indicator is turned back on.

Display Error Messages (Blue Ready-to-Work LED Blinks)

Error Symbol	Error Message	Solution
	Printhead lifted	Lower printhead.
	Maintenance	The printer is upgrading its firmware. Wait for it to complete the task.
	IP link error	Check if the network cable has been unplugged
	Press feed not done	Press Feed( ) or Testfeed(Test)

Display Error Messages (Blue Ready-to-Work LED Blinks) (continued)

Error Symbol	Error Message	Solution
	Label not taken.	Printing has been halted because a label is obstructing the LTS sensor. Remove label to resume printing.
	LSS too high, LSS too low.	These errors can occur when you run a testfeed without any media installed, or if you have incorrect media settings. Load the printer with media, restart the printer in Test mode and select the appropriate media type. For more information, see the *EasyCoder PD42 User's Guide* (P/N 934-009-xxx)
	IP Configuration Error.	The printer is trying to acquire an IP address from the network. Wait for it to complete the task.

Display Error Messages (Error LED Blinks)

Error Symbol	Error Message	Solution
	Field out of label.	You are attempting to print in an area that extends beyond the "print window." For more information, see the *EasyCoder PD42 User's Guide* (P/N 934-009-xxx)
	Out of media.	Load media in printer. See the *EasyCoder PD42 User's Guide* (P/N 934-009-xxx)
	Ribbon empty.	Load transfer ribbon. See the *EasyCoder PD42 User's Guide* (P/N 934-009-xxx). This error could also occur if you have just switched to direct thermal media, and the printer is expecting ribbon to be loaded. If this is the case, change Paper Type in Setup.
	Label not found.	The printer does not find a label gap or black mark. • Go into Setup mode and verify that the label length parameter is correct. • Verify that the Media type settings are correct. This error can occur if you are, for instance, using continuous media but your media settings are set to labels with gaps.
	Printhead hot.	The printhead is overheated and needs to cool down.Wait for printing to be resumed automatically.
	Testfeed not done.	Press Testfeed (Test).
	Cutter not found.	A cut-command has been sent but the printer cannot find the cutter. Check that the cutter is installed properly.
	Cutter not responding.	Check that the cutter is installed properly.

Other Printer Operation Problems

Problem	Solution	Refer to
The Power control lamp does not light up when the printer is started and there is no response when the print button is pushed.	• Check the power outlet and power cord • Check the power switch and cables to power module • Check the switching power module and the cables to the main board • Check the main board and cable to the panel module • Check the console board	"No Reaction at Power Up" on page 6
Error LED is turned on (solid light)	• Check if printer is out of media or ribbon • Check that the printhead is closed and locked • Check if media is jammed/tangled up • Check if label gap sensor is blocked by media • Check cutter, if any	"Cutter" on page 61
Error LED is turned on (flashing light)	• Check for bad software setting	
Error LED is off, but Ready-to-Work LED is flashing.	• Check that the printhead is closed and locked	
Printing started, but nothing is printed on the label	• Check if media is placed upside down or if media is not suitable for the application • Check if the ink-coated side of the transfer ribbons faces the media • Select the correct media and print type • Check that the printhead is properly connected to the print mechanism • Check that the printhead cables are properly connected to the main board • Check the main board	
When printing, label is jammed or tangled up	• Clear the media jam, and if label is stuck on thermal printhead, remove it using a soft cloth soaked with isopropyl alcohol or a cleaning card.	User's Guide

Other Printer Operation Problems (continued)

Problem	Solution	Refer to
When printing, part of the print image was not printed along the feed direction.	• Check for ribbon wrinkles and creases • Check if thermal printhead needs cleaning • Check if the printhead is damaged • Check printhead balance • Check if application program has errors • Check if power supply is working	“Power Supply” on page 63
Printout not in desired position	• Check for bad settings in the application. • Check if label gap sensor is disturbed by media, dust, or incorrectly loaded transfer ribbon • Check lateral position of label gap sensor • Calibrate label gap sensor in Autoadjust Mode • Check label gap sensor for faults or bad connection • Check the edge guide and media guides • Check the media • Check if the platen roller needs cleaning or replacing	*Fingerprint Command Reference Manual* (P/N 937-005-xxx) “” on page 9 User’s Guide “” on page 9 “Media Supply Post” on page 32 and “Media Guides” on page 46 “” on page 9 “Platen Module” on page 44
When printing, page skipping occurs	• Do a Test Feed or Check Media Settings • Check if label gap sensor is disturbed by media or dust	User’s Guide “” on page 9
Weak printout	• Check density setting • Check if thermal printhead needs cleaning • Check printhead pressure • Check printhead dot line position	User’s Guide User’s Guide “Printhead Module” on page 49
Uneven darkness across media path	• Check printhead balance	“Printhead Module” on page 49
When using cutter, label was not cut straight	• Check if media is loaded correctly	User’s Guide
When using cutter, label was not cut successfully	• Check if media is loaded correctly • Check that media thickness does not exceed 250 µm (9.8 mils)	User’s Guide
When using cutter, label could not feed or abnormal cutting occurs	• Check if cutter is installed properly • Check if paper feed rods are sticky. Clean if necessary using isopropyl alcohol.	“Installing the Cutter” on page 62
When using Label Taken Sensor, abnormal function occurs	• Check if LTS sensor is working • Check if media is loaded properly	“Label Taken Sensor (LTS)” on page 59 User’s Guide

No Reaction at Power Up

The electronics compartment contains wires and components with dangerous voltage (up to 380V). Always switch off the power and unplug the power cord before you remove the cover over the electronics compartment!

Im Elektronikfach gibt es Kabel und Komponenten, die hohe Spannungen (bis zu 380 V) führen. Immer die Stromversorgung abschalten und das Netzkabel abziehen, bevor die Abdeckung des Elektronikfachs abgenommen wird!

Printer Problems at Power Up

Problem	Solution	Refer to
Error during printing	• Check if the printer is out of media or transfer ribbon • Check that the printhead lever is closed and locked • If the printhead is closed and locked, but the problem persists, the headlift sensor may be out of order. Check connection to P34 on the main board. Check headlift microswitch. • Check if media is jammed/tangled up. Clear the jam and reload. Clean parts that may have been exposed to the media's adhesive using isopropyl alcohol or a cleaning card. • Check the light path between the upper and lower parts of the label gap sensor to see if it is obstructed by dust, adhesive, or stuck labels. Clean using isopropyl alcohol or a cleaning card. • Recalibrate the sensors by running a testfeed.	**"Headlift Sensor" on page 48**
No printing due to software error	• Check to see if a bad command was sent to the printer via Fingerprint or direct protocol • Check the Fingerprint application or the last issued instruction in Direct Protocol	*Fingerprint Command Reference Manual* (P/N 937-005-xxx

Printer Problems at Power Up (continued)

Problem	Solution	Refer to
The printer is not ready	• Check that the printhead is properly locked in a closed position. • Check that the network cable is plugged in. • Use the command SYSHEALTH$ to obtain an error diagnosis. Enter the line PRINT SYSHEALTH$ through a terminal connection to receive the printer's Ready-to-Work status.	
No reaction at power up	• Check the power outlet and power cord • Check the power switch and cables to power module • Check the main board and cable to the panel module • Check the 24 VDC output on CN1 on the power module between line and ground (there are 3 red line wires and 3 black ground wires). If there is no +24V, replace the entire power module. • Verify that the same electric potential is present in the other end of the cable (connected to socket P60 on the main board) to rule out the possibility of errors in the cable. • Check that the cable between CN1 on the power module and P60 on the main board is properly connected. • Check the status of the F1 and F2 fuses on the power module. If blown, replace the entire module. • Check the temperature in the power module. If it is too high, shut off the power and wait for the power supply to cool off (may take up to half an hour). If the error persists, examine the power module. • Check for main board problems • The electronics compartment contains wires and components with dangerous voltage (up to 380V). Always switch off the power and unplug the power cord before you remove the cover over the electronics compartment. • Check the fuse F1 on the main board, and try to determine the source of the error. Most likely, you will have to replace the main board. • Check the cable between main board and console board not connected or damaged. • Check that the cable is properly connected to P92 on the main board and P1 on the console board and that there is no visible damage. Replace if necessary. • Check for a faulty console unit • Connect the cable to a replacement console board without actually installing it (mind the risk of electrostatic discharges). If the trouble seems to be the console board, replace the entire panel module. • Check the console board • Check with some other electrical device	

Printer Problems at Power Up (continued)

Problem	Solution	Refer to
The printer is working, but nothing is printing	• Check that direct thermal media is loaded with the heat-sensitive side facing up. If not, reload the media. • Check if the ink-coated side of the thermal transfer ribbon faces the media. If not, reload the ribbon. • Check that the printer is set for correct media type, paper type, and print method. • Check that the printhead is properly inserted into the print mechanism. • Check that the cables running from the print mechanism to the main board are not visibly damaged and that they are properly connected to the main board, • Install a replacement printhead. • Use an oscilloscope to examine the printhead signals on the main board while trying to print, for example, a test label • Check if the label taken sensor is folded out and enabled and if there is a label left in the feed slot or the ambient light disturbs the label taken sensor.	"Printhead Module" on page 49. "Replacing the Main Board" on page 70. "Selected Test Points" on page 73
Printing is missing along the feed direction.	• Check the transfer ribbon for wrinkles and creases. Reload if necessary. If the problem persists, adjust ribbon tension. • Check the printhead for dirt, adhesive residue, contamination from the back side of the transfer ribbon, stuck labels, etc. If necessary, clean using isopropyl alcohol or a cleaning card. Never use any sharp tools. As a last resort, replace the printhead. • One or more of the heat-sensitive resistors ("dots") on the printhead has been damaged or is worn out. Replace the printhead. • If the printing is weak or non-existing on either the inner or outer part of the media, the printhead balance may need to be readjusted. This is most likely to occur when switching between media of different widths.	"Adjusting Ribbon Tension" on page 38 "To replace the printhead" on page 51 "To adjust printhead balance" on page 53

Printer Problems at Power Up (continued)

Problem	Solution	Refer to
Printout not in the desired position	• Check the application settings for possible explanations. • Check if the light path between the two parts of the label gap sensor is disturbed by dust, stuck labels, or an incorrectly loaded transfer ribbon. Clear or clean. • Check if the label gap sensor is positioned correctly across the media path to detect black marks or punched holes. If using irregularly shaped labels, the sensor should be aligned with the front tip of the label. • Calibrate the sensor. • Check if the label gap sensor is properly connected to CN8 and CN9 on the main board. • Check that the printer is set the proper paper type (Black mark/Gap paper/Plain paper). While feeding or printing a label, check signals on P37, pin 1 (Black Mark) and P36, pin 3 (Gap) on the main board while manually pulling a media with gaps or black marks through the two parts of the sensor. If no reaction, the sensor needs replacing. • Check that the edge guide on the media supply post guides the media so it runs flush with the guide plate. • Check that the inner media guide is placed flush to the inner gable and that the outer guide is adjusted according to the width of the media and is folded down so it engages the lower shaft. • Check that the media characteristics match the media specifications in the User's Guide in regard of position and size of slots, black marks, or punched holes. • In case of self-adhesive labels on a liner, consider if the liner has insufficient transparency or if there is some kind of printing on the liner that may interfere with the label gap sensor. • In case of tickets with black marks, consider if the black marks have sufficient blackness or if there is some kind of printing on the back of the media that may interfere with the label gap sensor. • Check if the platen roller is slippery, worn out, or dry and hard. Clean or replace if necessary.	"Label Gap Sensor Module" on page 46 "Media Supply Post" on page 32 "Media Guides" on page 46 "Platen Module" on page 44

2 Models and Options

This chapter contains general information about the EasyCoder PD41 and PD42 printers, including available options and technical specifications.

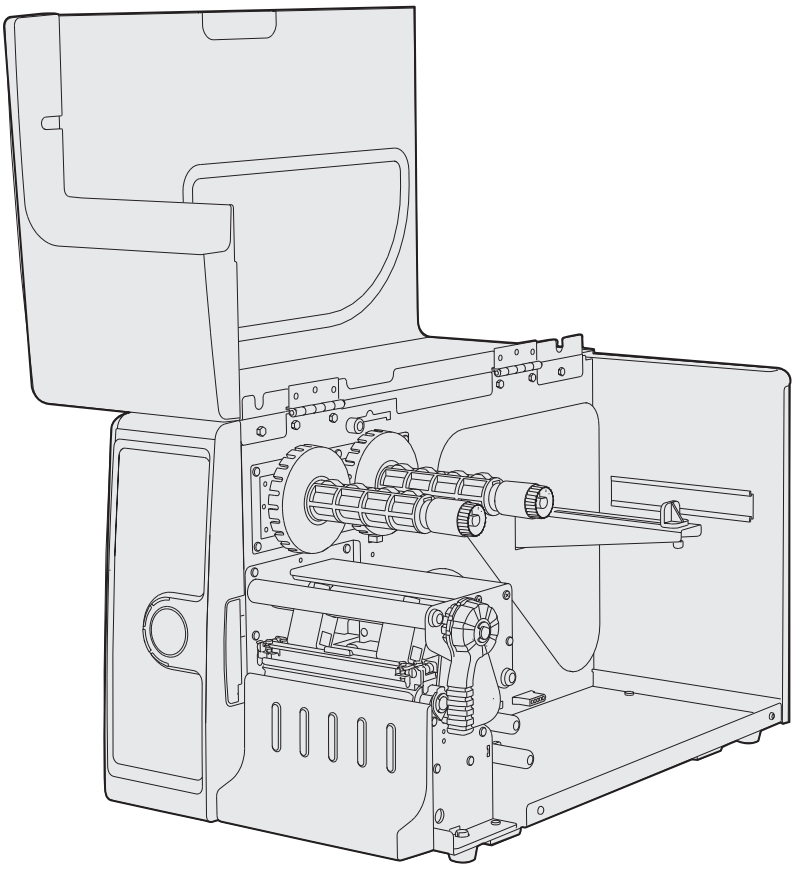
Models

The EasyCoder PD41/PD42 printer is available with a 200 or 300 dpi printhead. The label taken sensor is installed into all printers. The Real Time Clock module is in the PD42 only and is supported by the Fingerprint firmware.

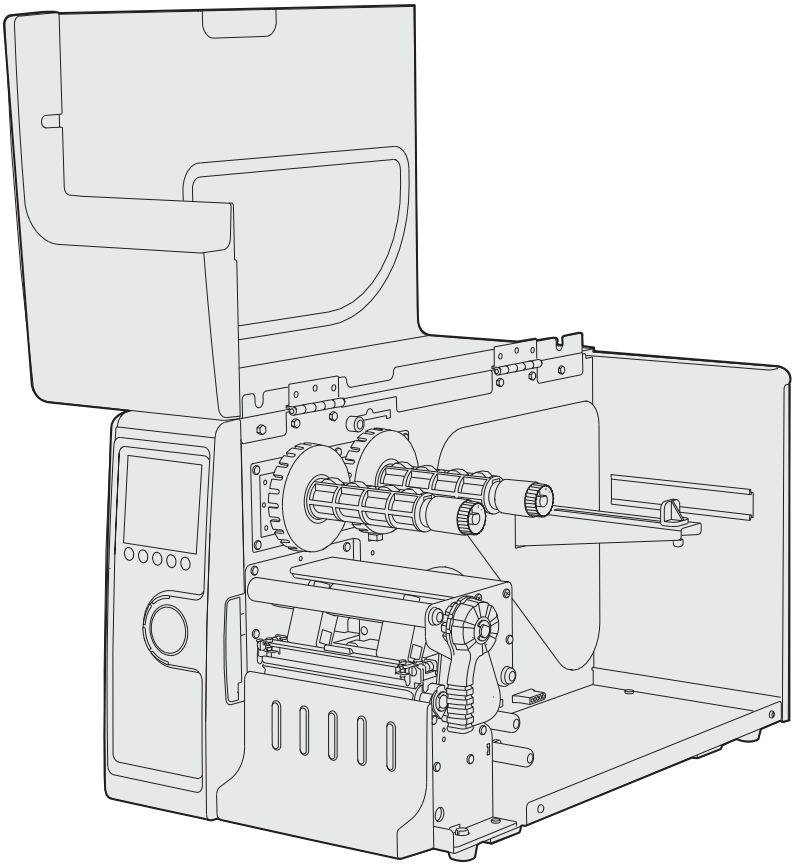
The PD42 is best described as an enhanced version of the PD41, which comes equipped with a display, larger memory, real time clock, and a USB host interface as a standard. The dimensions of the two printers are identical.

All models ship with either Fingerprint or IPL firmware pre-installed.

Note: All error messages in this version of the service manual relate to Fingerprint. IPL specific error messages are not covered in this manual.



EasyCoder PD41 printer



EasyCoder PD42 printer

Options

The following field-installable options are available for the PD41/PD42:

- Cutter kit
- Internal rewinder (for peel-off and batch takeup operation)
- EasyLAN Ethernet adapter
- Parallel 1284 interface
- Thermal printhead (200/300 dpi)

Instructions for installing these options are covered in Chapter 3.

Technical Specifications

EasyCoder PD41 Printer

Physical Dimensions		
Dimensions (WxLxH)	276 x 454.4 x 283.0 mm (10.9 x 17.9 x 11.2 in)	
Weight (excl. media)	13 kg (28.7 pounds)	
Power Supply		
Input rating	~100-240V 2-1A 50/60 Hz	
Power consumption	• Stand-by: 12 W • Normal operation/printing: 80 W • Peak: 250 in	
Printing		
Print technique	Direct Thermal/Thermal Transfer	
Printhead resolutions	8 dots/mm (203.2 dpi) or 11.8 dots/mm (300 dpi)	
Print speed 8 dots/mm (203 dpi) 11.8 dots/mm (300dpi)	 50.8 to 152.4 mm/sec (2 to 6 in/sec) 50.8 to 101.6 mm/sec (2 to 4 in/sec)	
Print Width Max. 8 dots/mm (203 dpi) 11.8 dots/mm (300dpi)	 104 mm (4.1 in) 105.7 mm (4.2 in)	
Print Length Max. 8 dots/mm (203 dpi) 11.8 dots/mm (300dpi)	Fingerprint 1270 mm (50 in) 558.2 mm (22 in)	IPL 600 mm (23 in) 406.4 mm (16 in)
Modes of Operation		
Tear-off (straight-through)	Yes	
Cut-off	Option with cutter	
Peel-off (self-strip)	Option with internal rewinder	
Firmware (Fingerprint)		
Operating system	Fingerprint v10.x.x	Includes Direct Protocol
Smooth fonts	TrueType and TrueDoc fonts	
Resident scalable fonts	15	
Character sets	• 23 single-byte character sets standard. • UTF-8 support as standard.	
Resident bar codes	61	

EasyCoder PD41 Printer (continued)

Firmware (IPL)	
Operating system	IPL v10.x.x
Smooth fonts	TrueType and TrueDoc fonts
Resident scalable fonts	13 (+21 simulated bitmap)
Character sets	• 23 single-byte character sets standard • UTF-8 support as standard
Resident bar codes	31
Environment	
Operating temperature	+5°C to +40°C (+41°F to 104°F)
Storage temperature	-20°C to 70°C (-4°F to 122°F)
Operating humidity	20 to 80% non-condensing
Storage humidity	10 to 90% non-condensing
Media	
Media width	25 to 118 mm (1 to 4.6 in) Max 114 mm (4.5 in) with cutter
Media roll diameter	213 mm (8.4 in) max. 190 mm (7.5 in) with internal rewinder
Internal rewinder diameter	Max 140 mm (5.51 in)
Media roll core diameter	38.1 to 76.2 mm (1.5 to 3 in)
Media thickness	60 µm to 250 µm (2.3 to 9.8 mils)
Transfer Ribbon	
Material	Wax, hybrid, or resin
Winding	Ink on either inside or outside of roll
Ribbon width	30 to 110 mm (1.18 to 4.33 in)
Ribbon roll diameter (outer)	76 mm (2.99 in) equivalent to 450 m (1471 ft.) of ribbon.
Inner core diameter	25.2 to 25.6 mm (1 in)
Sensors	
Label gap/black mark/out of media	Yes
Printhead lifted	Yes
Label taken	Yes
Ribbon end	Yes
Controls	
LED indicators	Power, Data/Ready, Error, Ready-to-Work™
Keys	1 Print Button + 5 Soft Keys
Electronics	
Microprocessor	ARM 9
Standard memory	4 MB flash, 8 MB SDRAM.

EasyCoder PD41 Printer (continued)

Interfaces	
RS-232 serial	Standard
USB	Standard
Ethernet	Option
IEEE 1284 parallel	Option
CompactFlash	Standard
Accessories and Options	
Internal rewinder and batch takeup	
Cutter	
Printhead 203/300 dpi	
EasyLAN ethernet interface	
Parallel IEEE 1284 interface	
Real time clock	

EasyCoder PD42 Printer

Physical Dimensions		
Dimensions (WxLxH)	276 x 454.4 x 283.0 mm (10.9 x 17.9 x 11.2 in)	
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Input rating	~100-240V 2-1A 50/60 Hz	
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Print technique	Direct Thermal/Thermal Transfer	
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Modes of Operation		
Tear-off (straight-through)	Yes	
Cut-off	Option with cutter	

EasyCoder PD42 Printer (continued)

Peel-off (self-strip)	Option with internal rewinder
Firmware (Fingerprint)	
Operating system	Fingerprint v10.x.x Includes Direct Protocol
Smooth fonts	TrueType and TrueDoc fonts
Resident scalable fonts	15
Character sets	• 23 single-byte character sets standard. • UTF-8 support as standard.
Resident bar codes	61
Firmware (IPL)	
Operating system	IPL v10.x.x
Smooth fonts	TrueType and TrueDoc fonts
Resident scalable fonts	13 (+21 simulated bitmap)
Character sets	• 23 single-byte character sets standard • UTF-8 support as standard
Resident bar codes	31
Environment	
Operating temperature	+5°C to +40°C (+41°F to 104°F)
Storage temperature	-20°C to 70°C (-4°F to 122°F)
Operating humidity	20 to 80% non-condensing
Storage humidity	10 to 90% non-condensing
Media	
Media width	25 to 118 mm (1 to 4.6 in) Max 114 mm (4.5 in) with cutter
Media roll diameter	213 mm (8.4 in) max. 190 mm (7.5 in) with internal rewinder
Internal rewinder diameter	Max 140 mm (5.51 in)
Media roll core diameter	38.1 to 76.2 mm (1.5 to 3 in)
Media thickness	60 µm to 250 µm (2.3 to 9.8 mils)
Transfer Ribbon	
Material	Wax, hybrid, or resin
Winding	Ink on either inside or outside of roll
Ribbon width	30 to 110 mm (1.18 to 4.33 in)
Ribbon roll diameter (outer)	76 mm (2.99 in) equivalent to 450 m (1471 ft) of ribbon.
Inner core diameter	25.2 to 25.6 mm (1 in)
Sensors	
Label gap/black mark/out of media	Yes
Printhead lifted	Yes
Label taken	Yes
Ribbon end	Yes

EasyCoder PD42 Printer (continued)

Controls	
Graphical display	LCD, 240*160 pixels with LED backlight
LED indicators	Power, Data/Ready, Error, Ready-to-Work™
Keys	1 Print Button + 5 Soft Keys
Electronics	
Microprocessor	ARM 9
Standard memory	8 MB flash, 16 MB SDRAM.
Interfaces	
RS-232 serial	Yes
USB	Yes
Ethernet	Option
IEEE 1284 parallel	Option
CompactFlash	Yes
USB host	Yes
Accessories and Options	
Internal rewinder and batch takeup	
Cutter	
Printhead 203/300 dpi	
EasyLAN ethernet interface	
Parallel IEEE 1284 interface	
Real time clock	

3 Replacing Parts

This chapter explains how to replace the various parts of the EasyCoder PD41/PD42 printer. The chapter contains the following sections:

- Front Panels
- Side Panels
- Chassis
- Media Supply
- Transfer Ribbon Mechanism
- Print Mechanism
- Rewinder Module
- Label Taken Sensor
- Cutter
- Power Supply
- Main Board
- Upgrading Firmware

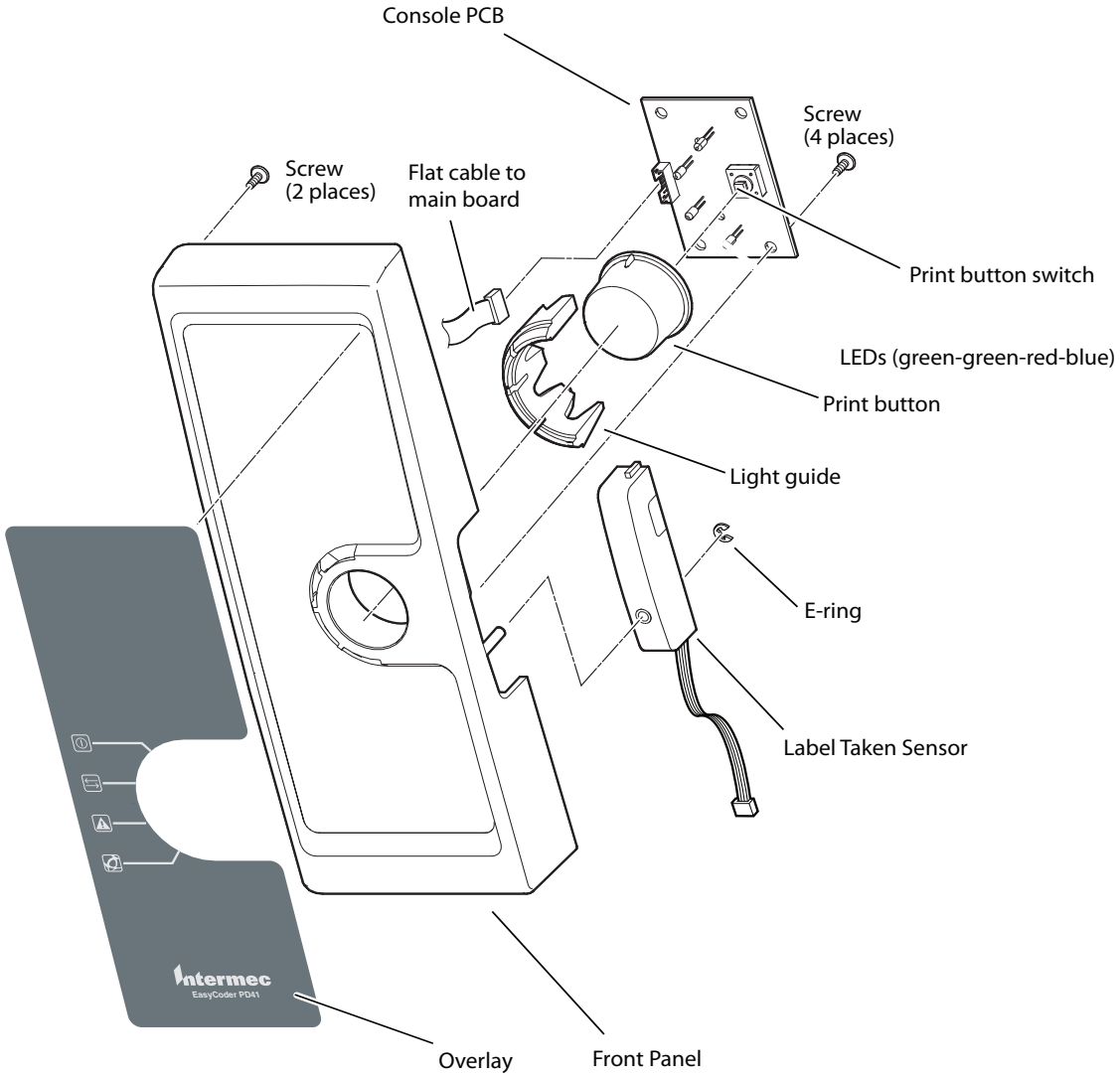
Front Panels

This section describes the front panels for the PD41/PD42 and how to replace them.

Front Panel (PD41)

The PD41 has a front panel molding with four colored LED control lamps and a print button.

The control lamp LEDs are fitted on a console PCB that also contains the switch for the print button. An overlay, covered with a transparent plastic window, provides the icons for the LEDs. The console PCB is connected to connector P92 (“CONSOLE”), on the main board via a separate flat cable. The Label Taken Sensor uses a separate cable that connects to connector P38 (“LTS”), also on the main board.

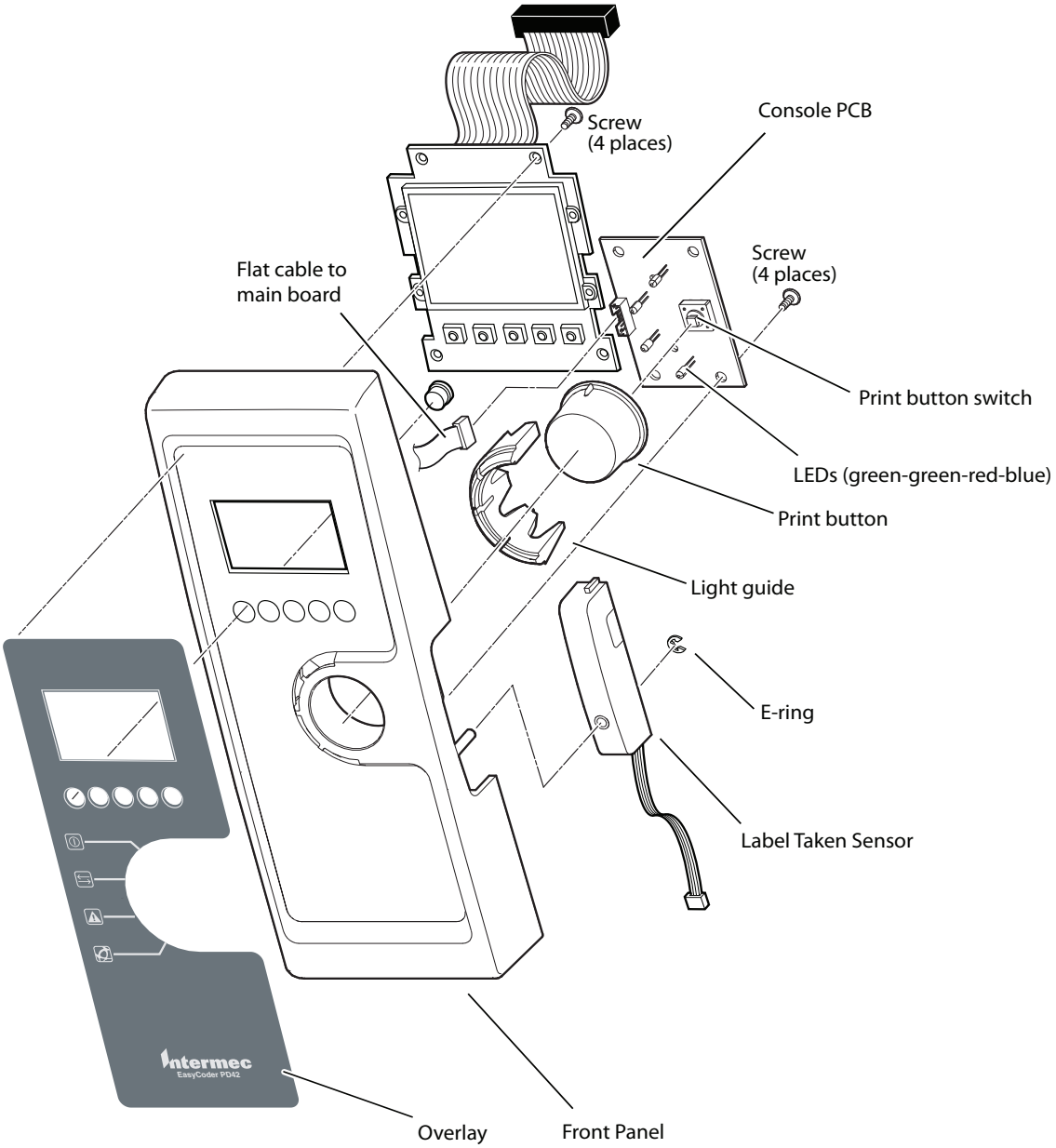


PD41 Front Panel: Exploded View

Front Panel (PD42)

The EasyCoder PD42 has a front panel molding with a LCD, four colored LED control lamps and a Print button.

The control lamp LEDs are fitted on a console PCB that also contains the switch for the print button. An overlay, covered with a transparent plastic window, provides the icons for the LEDs. The console PCB is connected to connector P92 (“CONSOLE”) on the main board via a separate flat cable. Another flat cable runs from the display to the connector P46 (“LCD”) on the main board. The Label Taken Sensor uses a separate cable which connects to connector P38 (“LTS”), also on the main board.



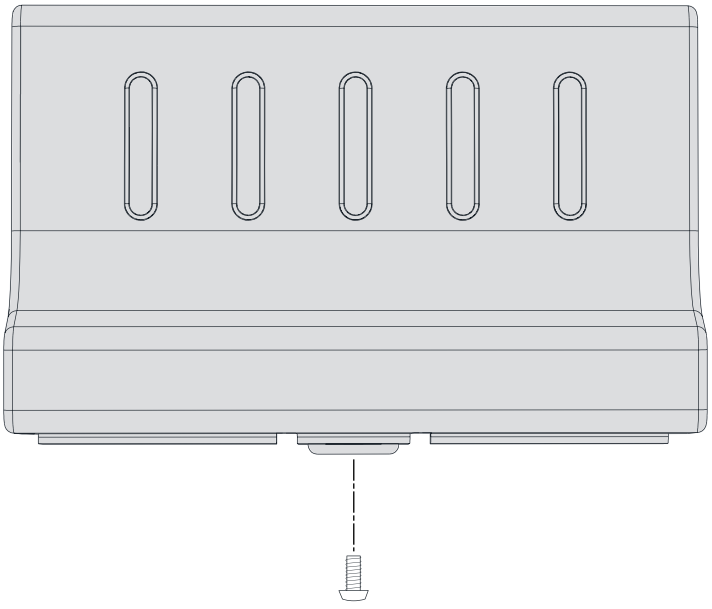
PD42 Front Panel: Exploded View

To replace the front panel

1. Remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Disconnect the cables (Console PCB and LTS) from the main board and release them from the clips and the spiral binding.
3. Disconnect the display flat cable (for the PD42 only).
4. From inside the electronics compartment, remove the two screws that hold the front panel assembly at the top front of the center section.
5. Lift the front panel assembly up and out so the panel molding disengages the two keyholes in the center section.
6. Replace the entire assembly or individual parts (the display PCB on the PD42, the LTS sensor).
7. To install the front panel, reverse steps 1 to 6.

Bottom Right Panel

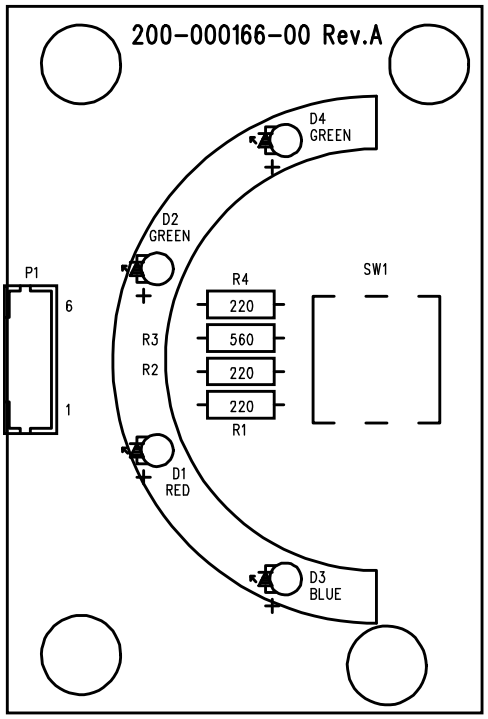
All models have a panel fitted to the bottom plate in front of the print mechanism. This panel is temporarily removed when loading media for peel-off (self-strip) operation when a rewinder (For help, see "Rewinder Module" on page 57) is installed. It must be permanently removed before installing an optional cutter (For help, see "Cutter" on page 61). The panel is held in place by a knurled screw inserted beneath the bottom plate.



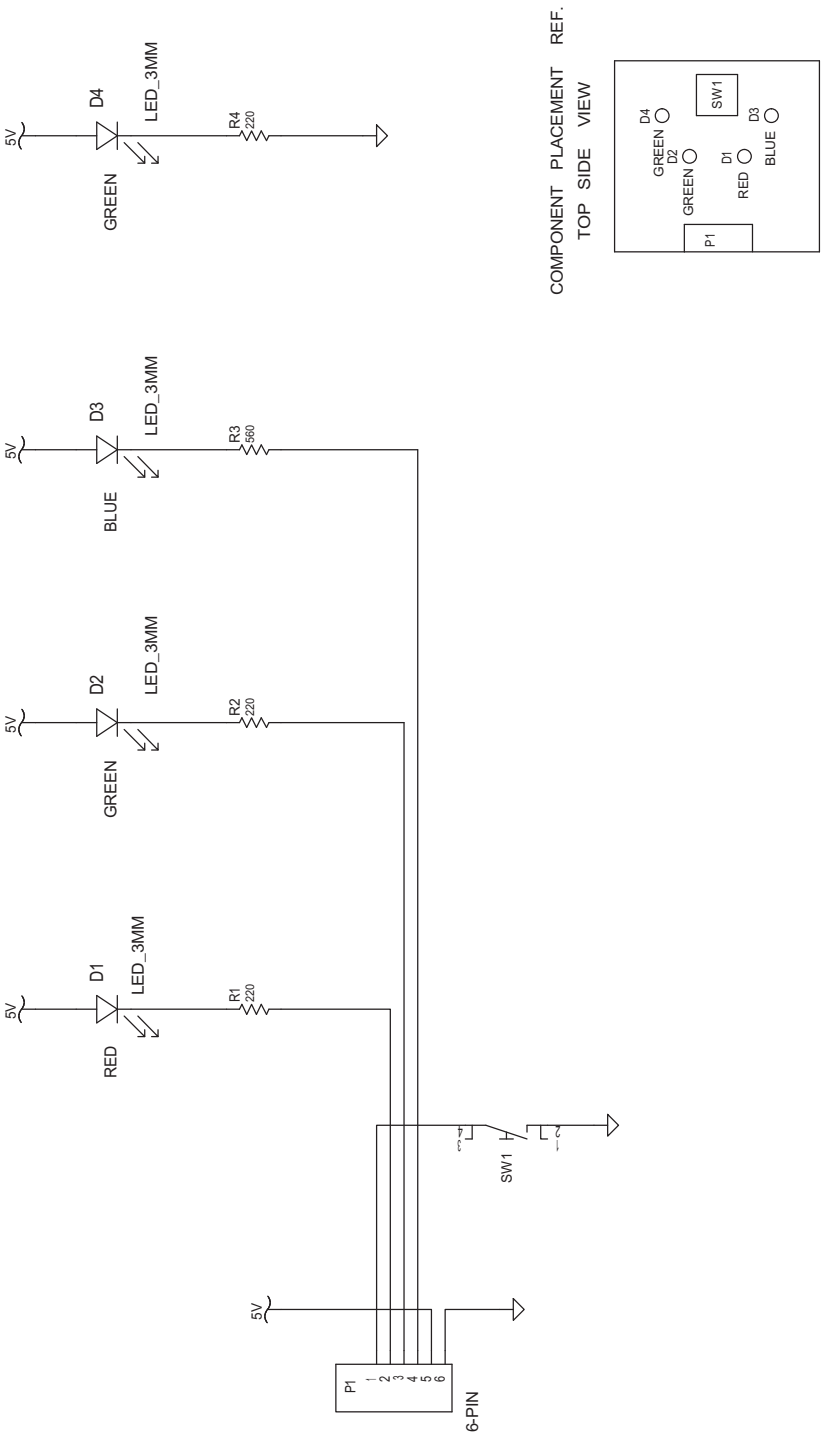
Bottom Right Panel With Thumbscrew

Console PCB

The same console PCB is used on both the PD41 and PD42 printers. It has four LEDS and a Print button.



Console PCB: Components



Console PCB: Schematics

Side Panels

This section describes the right-hand door assembly that covers the media compartment and the left-hand side panel that covers the electronics compartment.

Right-Hand Door

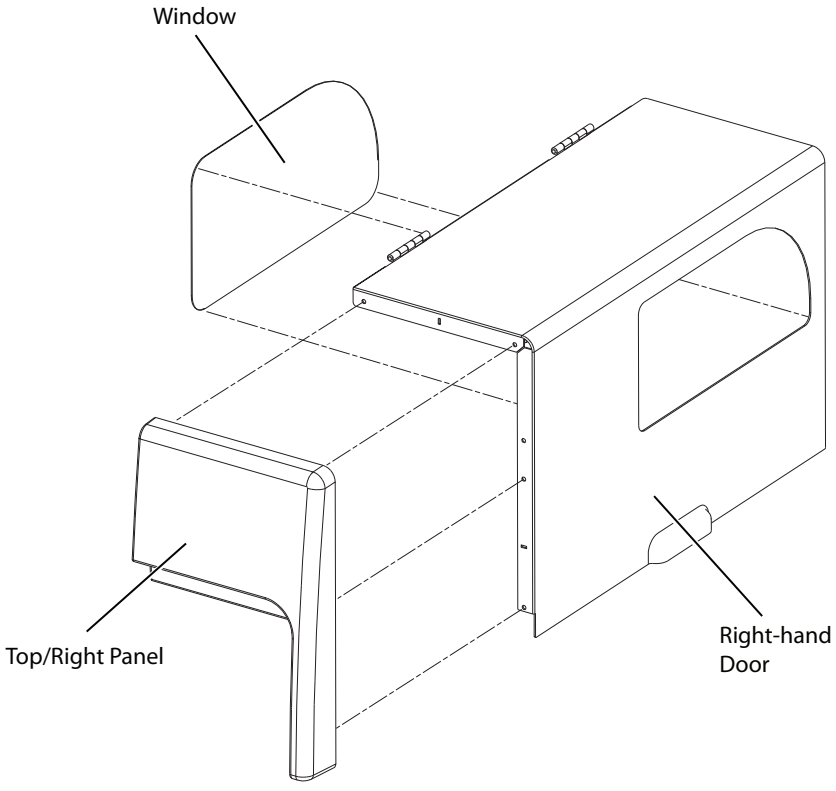
The right-hand door covers the media compartment, which contains the print mechanism, the transfer ribbon mechanism, the media supply, and the optional rewinder. The door is attached to the center section with two hinges and can be opened 180° to facilitate ribbon and media load.

The door assembly consists of a hinged door to which the top right panel is fitted using four screws. A clear plastic inspection window is glued to the inside of the door. A media and ribbon load instructions label is fitted inside the top part of the door.

The door assembly is available as a complete unit. The top/right panel can be replaced separately and is attached to the door using a total of four screws (not included).

To remove the right-hand door

Remove the four screws that attach the hinges to the center section.



Right-Hand Door

Left-Hand Panel

The left-hand panel covers the electronics compartment. It is a one-piece metal panel, which is fitted to the center section using two screws and to the rear plate and the bottom plate using a series of leaf springs along the edges.

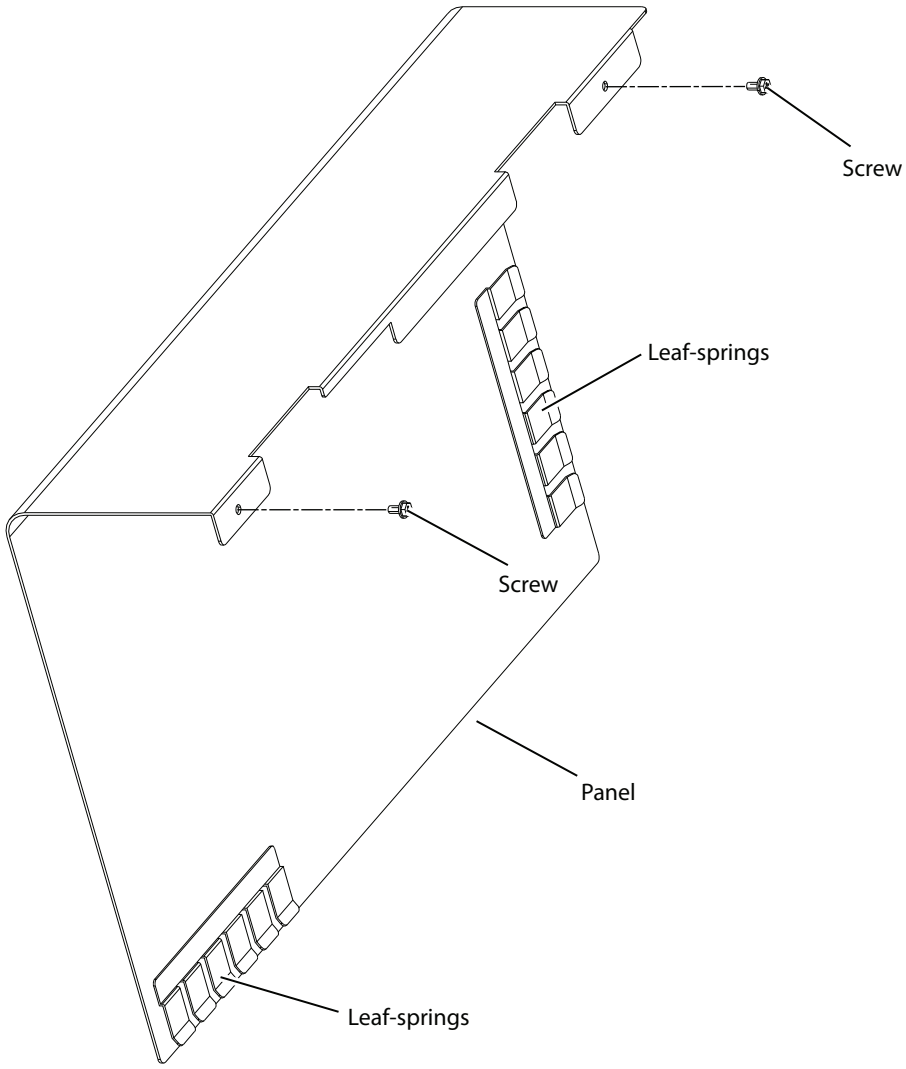
The electronics compartment contains wires and components with dangerous voltage (up to 380V). Always switch off the power and unplug the power cord before you remove the cover over the electronics compartment!

Im Elektronikfach gibt es Kabel und Komponenten, die hohe Spannungen (bis zu 380 V) führen. Immer die Stromversorgung abschalten und das Netzkabel abziehen, bevor die Abdeckung des Elektronikfachs abgenommen wird!

Never run the printer without the left-hand panel installed, as this may cause radio interference. Approvals are only valid when the cover is installed.

Niemals den Drucker ohne angebrachte linke Seitenwand betreiben, da dies zu RF-Störungen führen kann. Zulassungen sind nur bei angebrachter Abdeckung gültig.

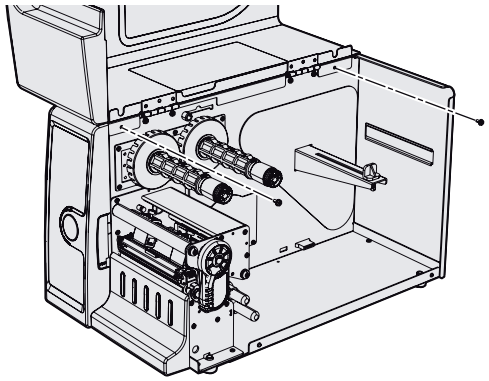
Take standard precautions against ESD (Electrostatic Discharges) before touching any electronics components inside the electronics compartment.



Left-Hand Panel

To remove the left-hand panel

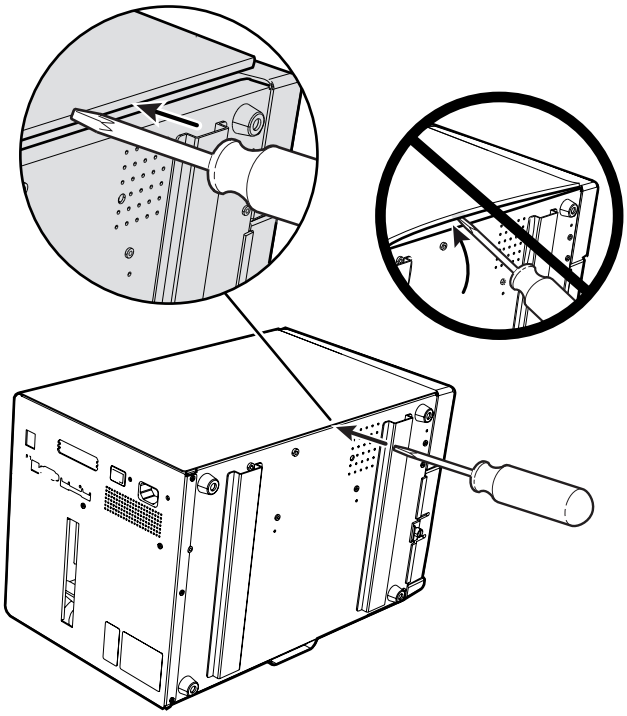
1. Disconnect the power cord.
2. Open the right-hand door.
3. Remove the screw located on the left side of the front hinge and the screw on the right side of the rear hinge.



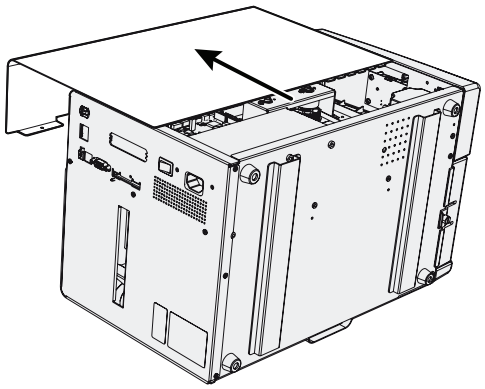
4 Close the right-hand door.

5 Lay the printer down on its side, with the electronics compartment facing up.

6 Dislocate the left-hand panel by placing the tip of a slotted screwdriver at the edge of the panel and gently pushing the handle towards the top of the printer. DO NOT attempt to pry it loose. Protect the paint by inserting a thin piece of cardboard or similar between the plate and the screwdriver.



7 Remove the panel from the printer.



To install the left-hand panel

1. Making sure that the leaf springs along the rear edge of the panel embrace the edge of the rear plate, push down the panel. Check that the leaf springs along the bottom edge fit the bottom plate.
2. Open the right-hand door.
3. Secure the panel using two screws inserted from the media compartment.
4. Reconnect the power cord.

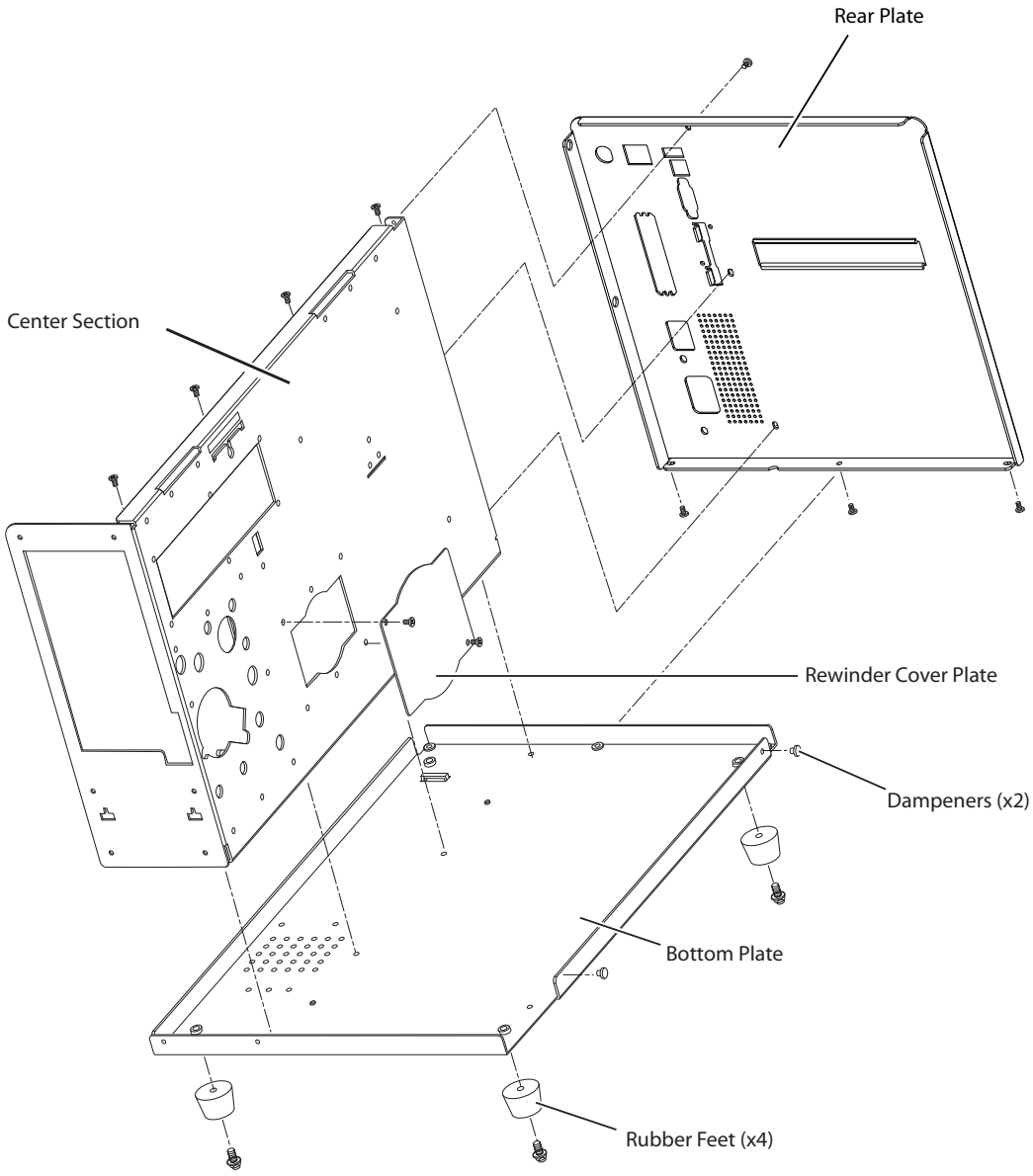
Chassis

This section describes the chassis, which consists of the center section, the bottom plate, and the rear plate.

Chassis Overview

The chassis is the printer's main frame to which various modules are attached, such as the panels and doors, the print mechanism, the transfer ribbon mechanism, the electronics, and the media supply post. It consists of three main parts:

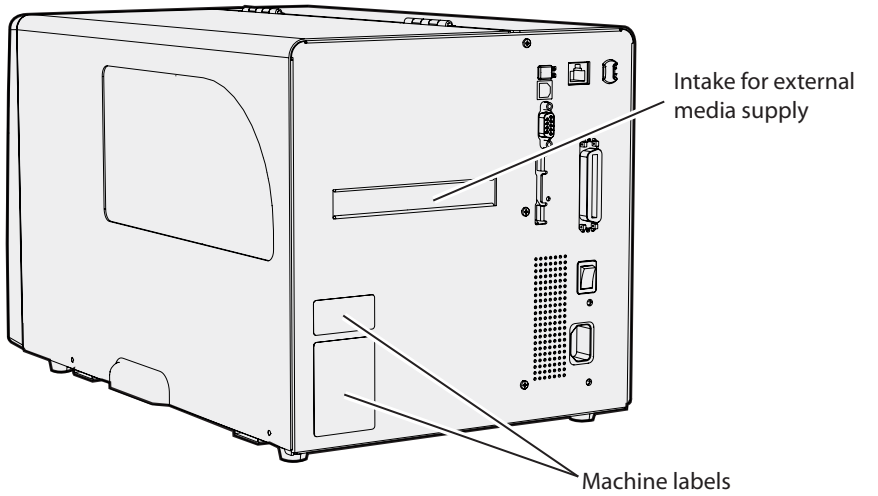
- Bottom plate with four rubber feet and two dampeners for the right-hand door
- Center section
- Rear plate



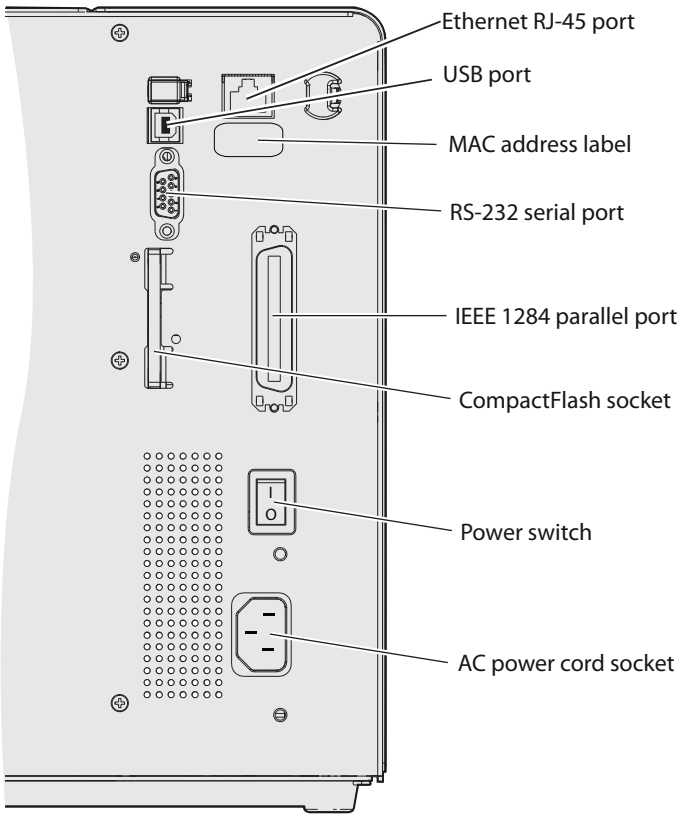
Chassis Overview

Rear Plate

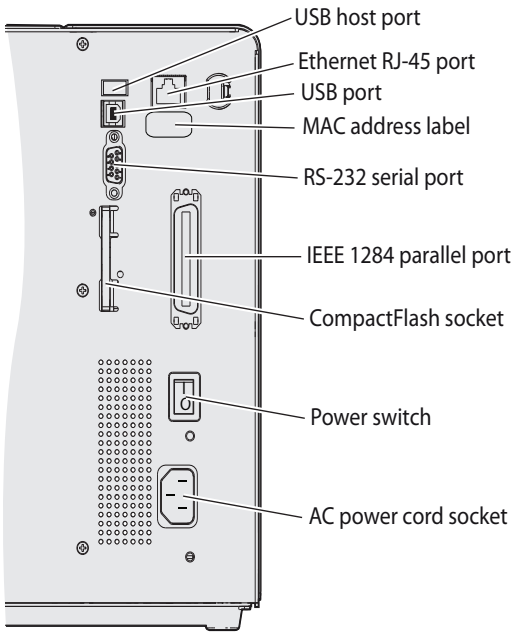
The rear plate contains the On/Off switch, the AC power cord socket assembly, the serial and USB port connectors, and the CompactFlash card slot. It also has slots for the optional parallel interface and Ethernet connectors, which are fitted on the main board.



Rear View of the PD41/PD42



Rear Connectors on the PD41



Rear Connectors on the PD42

Media Supply

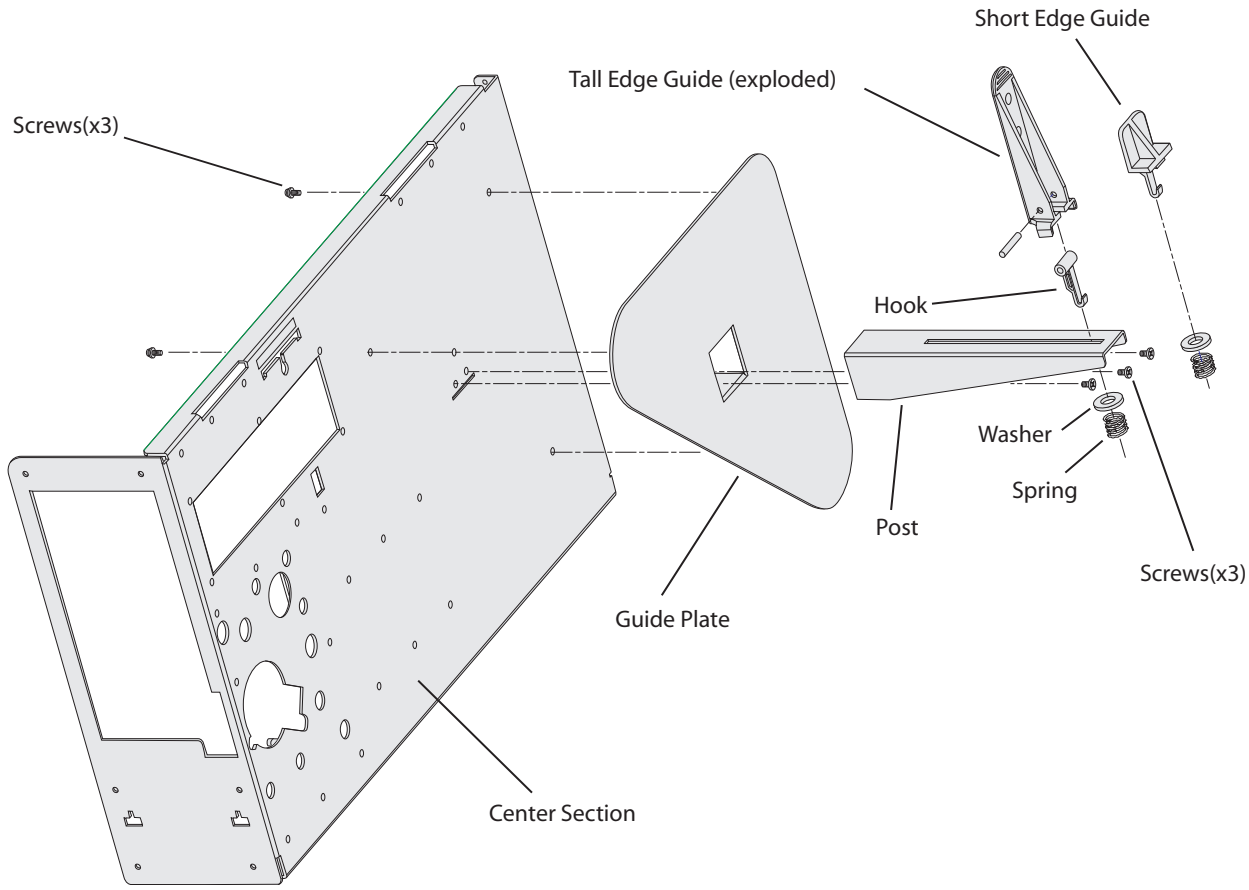
This section describes the media supply post and the two different types of edge guides available.

Media Supply Post

The media supply post is intended for media rolls loaded inside the media compartment. The printer can also use an external supply of media. For example, fan-folded tickets placed behind the printer and routed through the slot in the rear plate.

The printer comes with two edge guides: one of them is fitted on the supply post; the other one is packed separately. The short guide makes it easy to fit the media roll, but does not support the entire side of the roll. The tall edge guide supports most of a full media roll, but must be folded to a horizontal position to allow a roll or empty core to be removed and a new roll to be loaded. Which guide to use depends mainly on the characteristics of the media in use. For example, a “slippery” liner versus a “coarse” roll of tags. If the printer is placed in a completely horizontal position, or if it is tilted to the right.

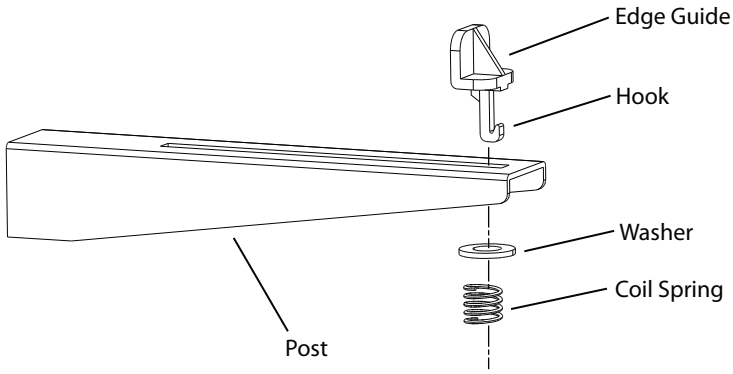
The supply post is fitted to the center section using three screws. It runs through a square hole in the triangular guide plate, which is attached to the center section from inside the electronics compartment using three screws.



Media Supply Post: Exploded View

To remove the edge guide

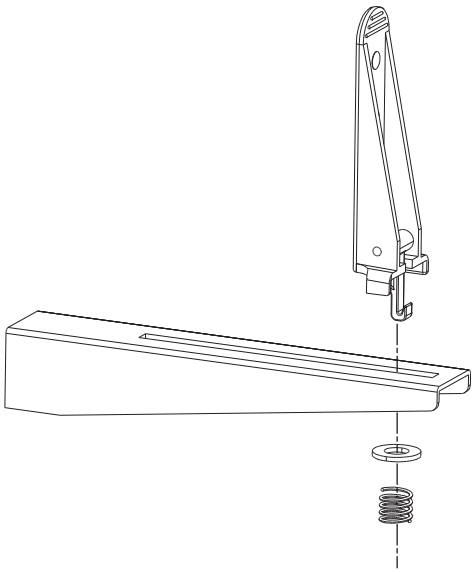
1. Unhook the coil spring from the hook at the bottom of the plastic edge guide underneath the post.
2. Remove the coil spring and the washer, then pull up the edge guide and save it for possible later use.



To install the edge guide

1. Insert the edge guide into the slot in the post.
2. First fit the washer and then the coil spring from underneath the post to the protruding part of the edge guide and engage the coil spring to the hook.

Note: The high edge guide is hinged to allow media load. Before removing an empty core or loading a roll of media, the guide must be lowered to a horizontal position. Similarly, after loading the media it must be flipped back so it points straight up. Like the low edge guide, it can be adjusted along the post to fit different media widths.



Caution

Make sure you put the high edge guide in vertical position before you close the side door, or the guide could get damaged.

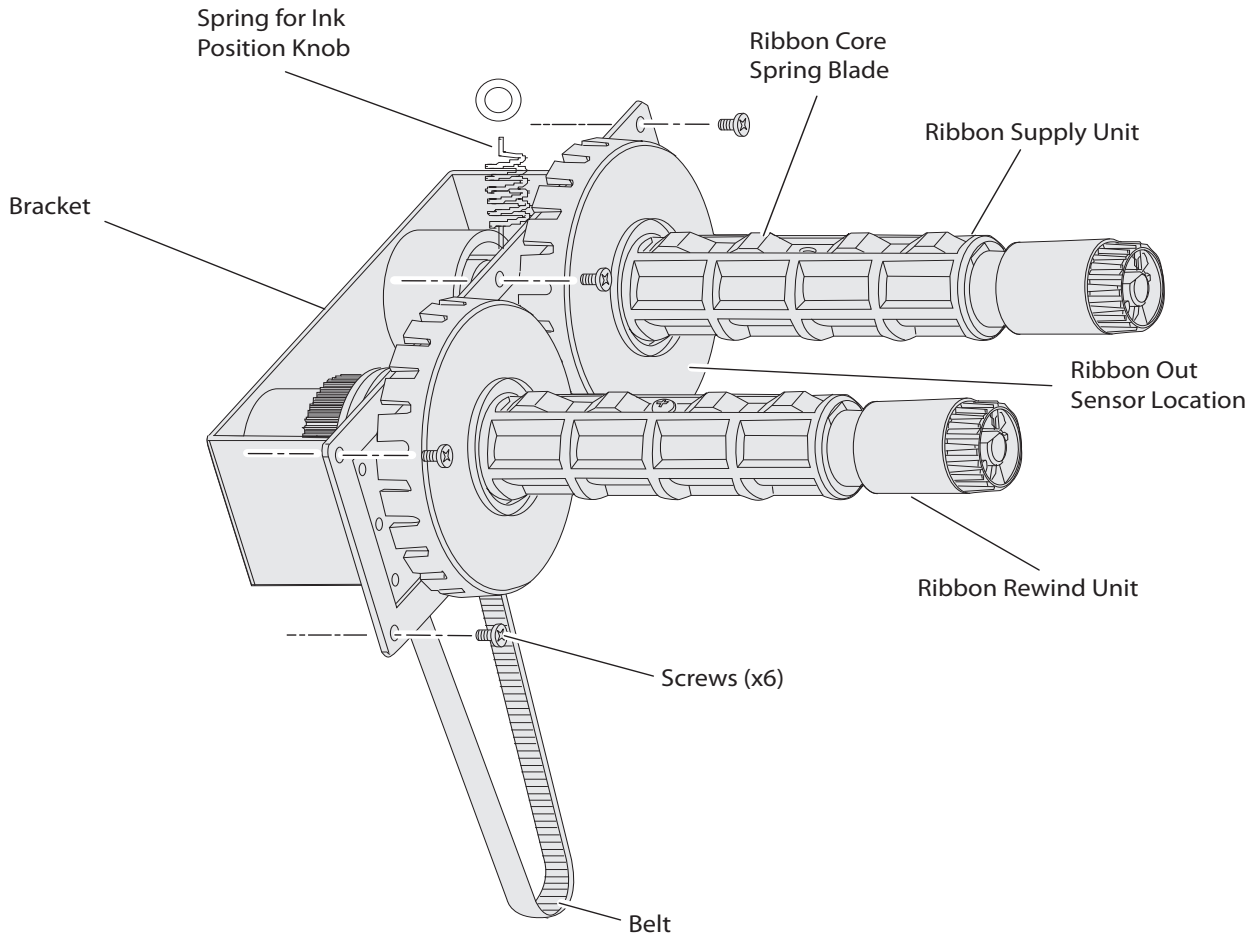
Sicherstellen, dass die Führung mit der hohen Kante in die vertikale Stellung gebracht wird, bevor die Seitenklappe geschlossen wird. Andernfalls könnte die Führung beschädigt werden.

Transfer Ribbon Mechanism

This section describes the thermal transfer ribbon mechanism.

Ribbon Module

The thermal transfer mechanism holds the supply of thermal transfer ribbon and winds up the spent ribbon after printing. It consists of a self-contained unit that is attached to the center section and driven by a belt from a pulley on the platen roller shaft (For help, see "Print Mechanism" on page 41). In addition to this unit, there is also a ribbon out sensor and an ink position selector attached to the center section.



Ribbon Module

The ribbon module can be replaced as a unit. It also has four replaceable parts—the belt, the ribbon core spring blades, the ribbon out sensor, and the ink position knob.

To replace the ribbon module

1 Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).

2 Slip the belt that drives the platen from its pulley (For help, see "Motor, Pulleys, and Belts" on page 42).

3 Use a pair of narrow pliers to disconnect the spring between the ribbon supply and the ink position knob.

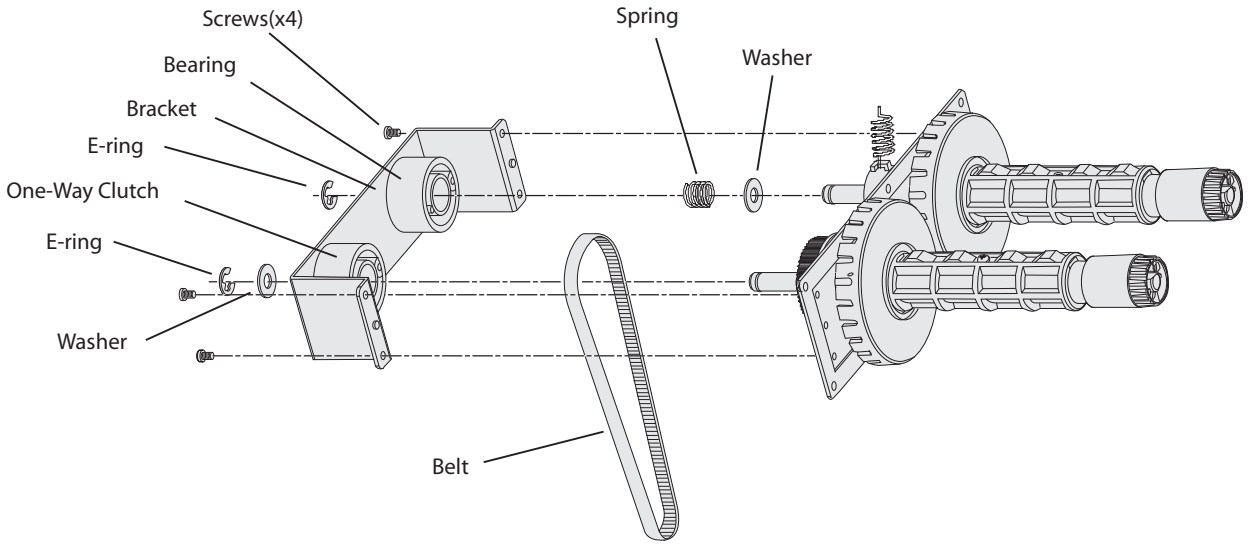
4 Remove the six screws that hold the ribbon module to the center section from the media compartment side.

5 Tilt the ribbon module so you can remove the belt from the pulley on the platen roller shaft.

6 Do not dismantle the module any further, unless you need to replace the belt. Reassemble in reverse order.

Ribbon Module Belt

The ribbon module belt is used to drive the ribbon rewind unit.



Ribbon Module Exploded View

To replace the ribbon module belt

1 Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).

2 Slip the belt that drives the platen from its pulley (For help, see "Motor, Pulleys, and Belts" on page 42).

3 Remove the E-rings and the washer from the ends of the ribbon supply and rewind shafts.

4 Remove the four screws that hold the inner bracket to the main body of the ribbon module and pull out the bracket.

Caution

DO NOT loosen the screws that hold the bearing and the one-way clutch to the bracket. Doing so will affect the factory-adjustment of the supply and rewind units and can cause ribbon creasing problems.

Die Schrauben, mit denen das Lager und die Kupplung an der Halterung befestigt sind, NICHT lockern. Dies verändert die Werkseinstellung der Zufuhr- und Aufwickelmodule und kann zu Bandfaltungsproblemen führen.

5 Remove the belt from the pulley on the rewind unit. Make sure that the spring and washer stay on the supply unit shaft.

6 Reassemble in reverse order.

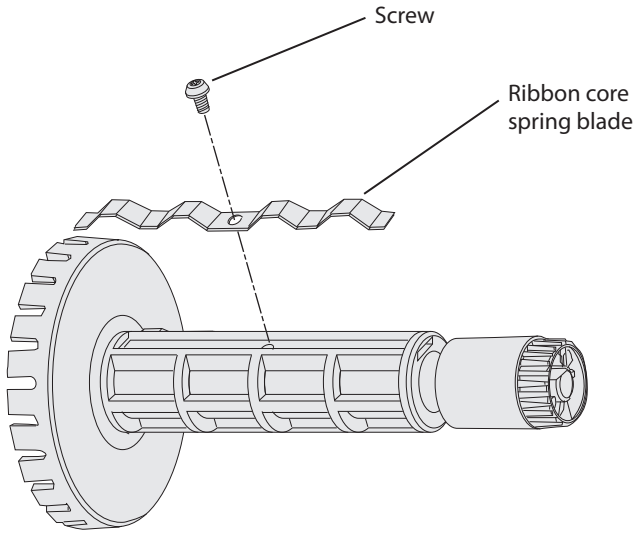
Ribbon Supply and Rewind Units

The ribbon supply and ribbon rewind units look exactly the same, but differ in having internal springs with different strength. Only the ribbon core spring blade is replaceable as described in the next section.

At the outer end of each unit is a knob for adjusting the ribbon tension, see below.

Replacing the Ribbon Core Spring Blade

The ribbon core spring blade is held by a single screw.



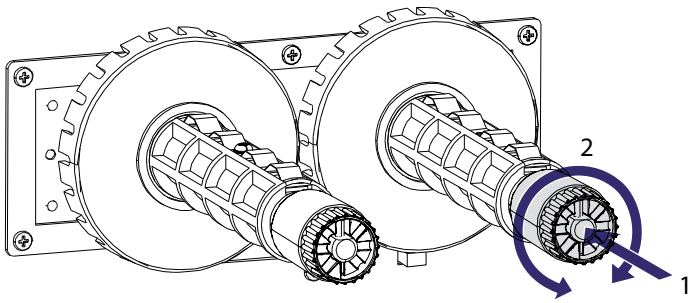
Ribbon Core Spring Blade

Adjusting Ribbon Tension

The knob at the outer end of each unit is engraved with numbers from 1 to 4, where 1 is maximum friction and 4 is minimum friction. Factory default is #1 on the supply unit and #2 on rewind unit. If the friction settings prevent the ribbon from running with the same speed as the media, smudging may occur.

If ribbon wrinkling occurs during printing, push the knob on the ribbon supply hub inwards (1) and rotate it clockwise to increase the breaking force (2).

If the printer has problems pulling the labels (especially when using a ribbon less than 50 mm/2 inches wide), push the knob on the ribbon supply hub inwards (1) and rotate it counterclockwise to decrease the breaking force (2).



Adjusting Ribbon Tension

Ribbon Out Sensor

The ribbon out sensor is attached to the center section from the electronics compartment using a single screw. The sensor is connected to connector P39 (RIBBON) on the main board.

The sensor assembly consists of a LED and a sensor mounted on a circuit board. The LED emits a beam of light that is detected by the sensor. The ribbon supply unit has a flange with slots situated, so the light is intermittently let through or interrupted as the flange rotates. If no rotation is detected during printing, an out-of-ribbon condition is assumed. This causes error "Out of transfer ribbon" (Error 1027), and the red LED emits a solid glow if the printer is set up for thermal transfer printing. If the printer is set up for direct thermal printing, the ribbon out sensor is not used.

To replace the ribbon out sensor

Note: Before replacing the sensor, check that the malfunction is not caused by dust or foreign objects. Also disconnect and connect the cable to the main board a few times to remove any oxide.

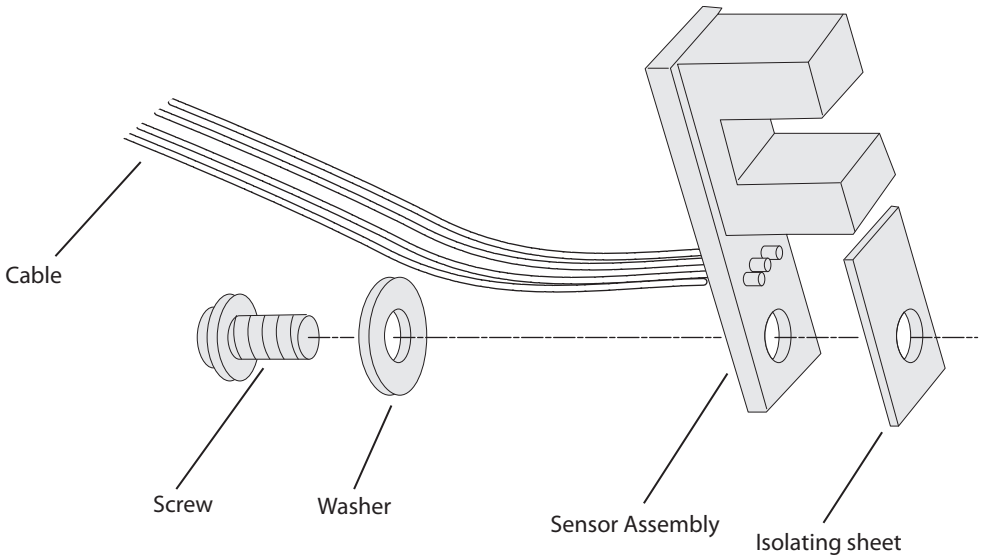
1 Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).

2 Disconnect the cable from P39 (RIBBON) at the top of the main board.

3 Remove the cable from the clip and plastic spiral binding.

4 From inside the electronics compartment, remove the single screw and washer that holds the sensor PCB to the center section.

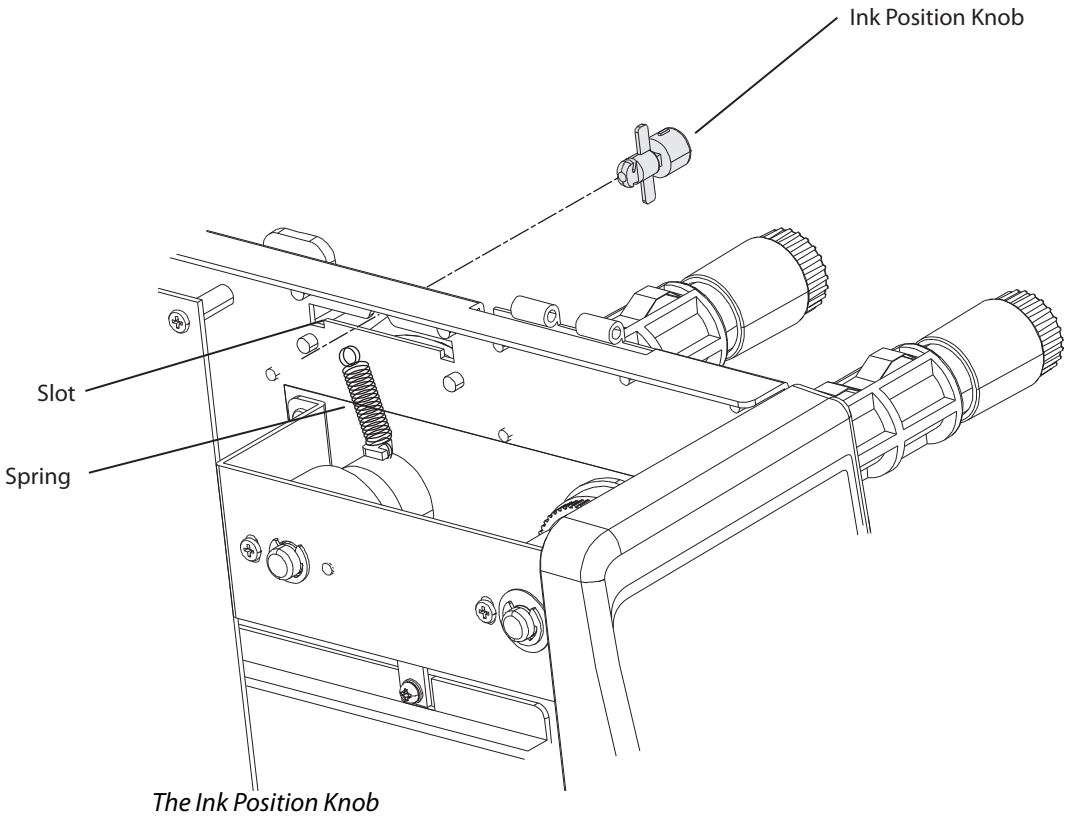
5 Pull out the sensor and the isolating sheet.



Ribbon Out Sensor Exploded View

Ink Position Knob

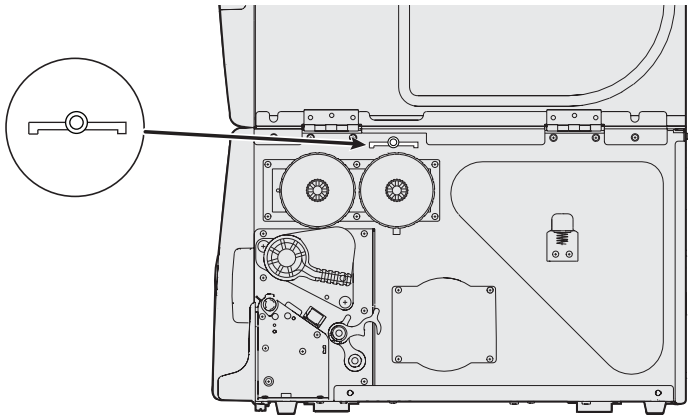
The ink position knob is used to set the printer for thermal transfer ribbon wound with the ink facing either outwards or inwards.



The Ink Position Knob

To remove the ink position knob

1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Disconnect the spring from the ink position knob inside the electronics compartment using tweezers or a pair of narrow-tipped pliers.
3. Move the knob to the center of the slot, rotate it a quarter of a turn, and pull it out into the media compartment.



4 Install the new ink position knob in reverse order. Do not forget to move it to either end of the slot before closing the right-hand door.

Caution

It is important that the knob is locked in either position or it may be damaged when the right-hand door is closed.

Es ist wichtig, dass der Knopf in einer seiner Stellungen arretiert ist; andernfalls kann er beim Schließen der rechten Klappe beschädigt werden.

Print Mechanism

This section describes the print mechanism and the stepper motor that drives both the platen roller and the transfer ribbon takeup unit.

Print Unit

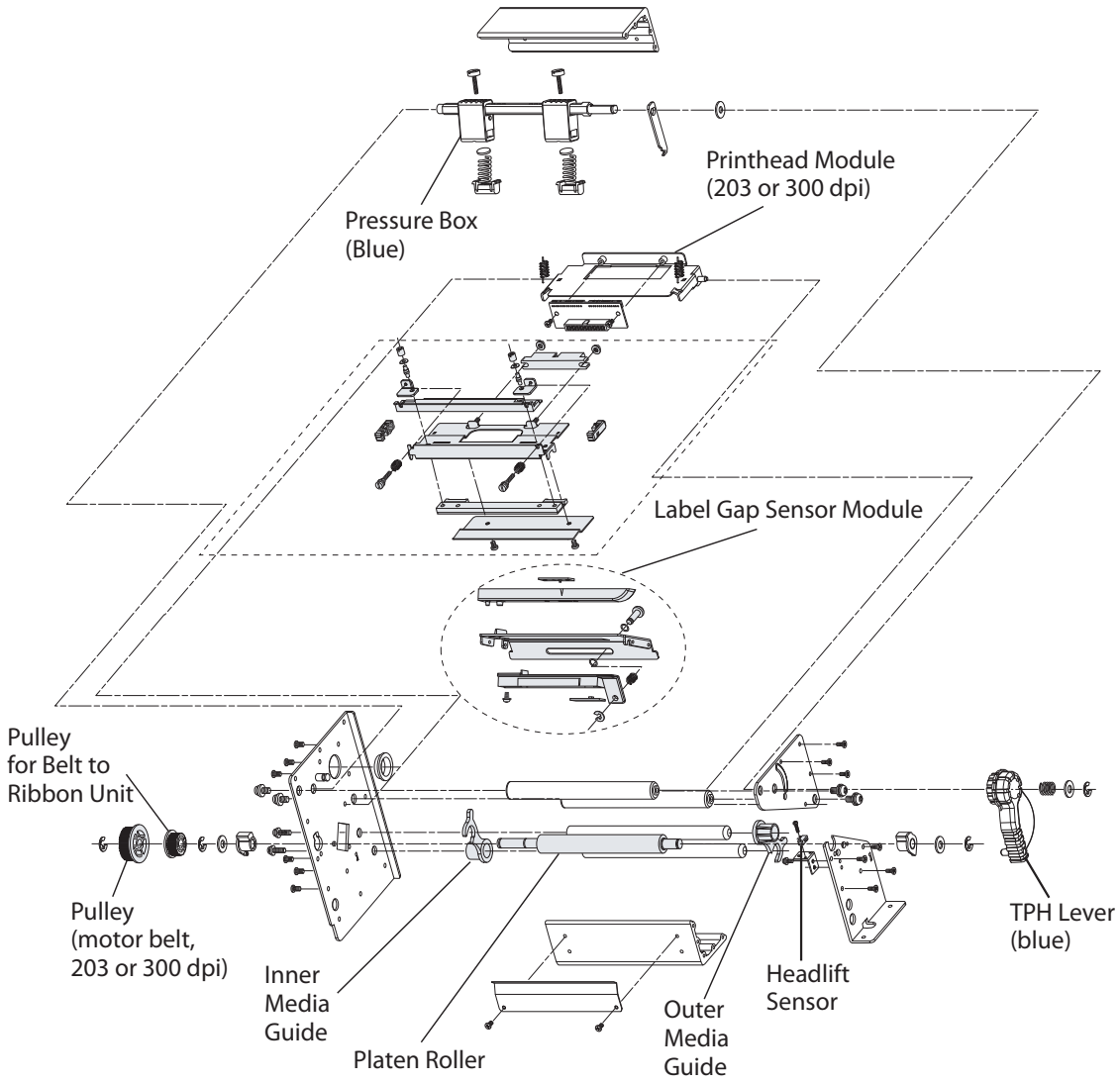
The print unit is not a self-contained unit, but is integrated with the center section. The basic printer configuration includes a 203.2 dpi (8 dots/mm) printhead which can be upgraded to one capable of 300 dpi (11.81 dots/mm). However, this requires that the printhead PCB is also exchanged. When ordering the Print Unit Assembly, the Printhead module is not included.

Caution

Use Intermec-approved printheads only. Using a printhead that is incompatible with the printer will void the warranty and is likely to damage the main board beyond repair.

Nur von Intermec zugelassene Druckköpfe benutzen. Wenn ein Druckkopf benutzt wird, der nicht für den Drucker geeignet ist, wird dadurch die Garantie nichtig und die Hauptplatine kann so stark beschädigt werden, dass sie nicht mehr reparierbar ist.

To help understanding the design of the print unit, an exploded view of all parts is shown below. Cables are omitted for clarity.



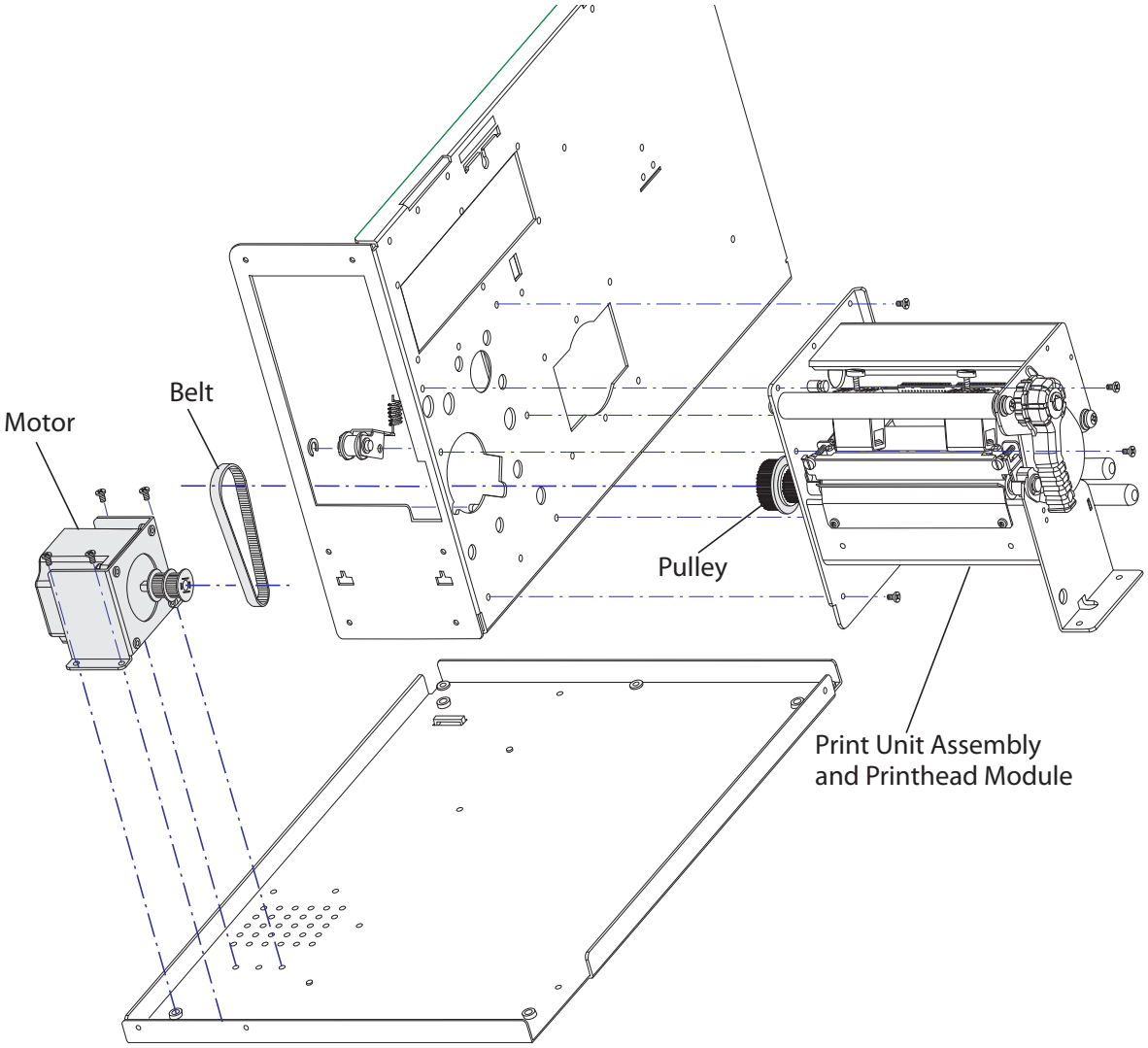
Print Unit Exploded View

Motor, Pulleys, and Belts

The stepper motor drives both the platen roller and the transfer ribbon rewind unit via a series of belts and pulleys.

As a standard, the stepper motor has double pulleys to be prepared for the installation of an optional rewinder (as described in **"Rewinder Module" on page 57**). The motor and belt are available as spare parts. The tension of the belt is automatically adjusted by a sprinkled arm-and-wheel arrangement attached to the center section.

The stepper motor module is attached to the bottom plate using four screws. The motor is connected by a four-wire cable harness to connector P31("MOTOR") on the main board.



Motor, Pulleys and Belts

To replace the stepper motor

1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Disconnect the cable from P31 on the main board and free the cable from the spiral bindings and the cable clip.
3. Remove the four screws that hold the stepper motor module to the bottom plate. A screwdriver with a magnetic tip is highly recommended.
4. Disconnect the belt(s) from the motor's pulley and pull out the motor.
5. Install the motor in reverse order. If the printer is equipped with a rewinder, fit the platen roller belt on the inner pulley (the pulley closest to the motor housing) and the rewinder belt to the outer pulley.

To replace the belt

1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Disconnect the cable from P31 on the main board and free the cable from the spiral bindings and the cable clip.
3. Remove the four screws that hold the stepper motor module to the bottom plate.
4. Disconnect the belt(s) from the motor's pulley and pull out the motor.
5. Install belt and motor in reverse order. If the printer is equipped with a rewinder, fit the platen roller belt on the inner pulley (that is, the pulley closest to the motor housing) and the rewinder belt to the outer pulley.

Note: If the printer is not equipped with a rewinder, it has only one belt. Do not remove the motor. Pull the belt off of the platen roller pulley and then off the motor pulley. Fit the new belt in reverse order. Temporarily disconnecting the tension adjuster spring makes the process easier.

To replace the pulley

1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Pull off the belt from the pulley. Temporarily disconnecting the tension adjuster spring makes the process easier.
3. Remove the E-ring that holds the pulley on the platen roller shaft.
4. Install the pulley in reverse order.

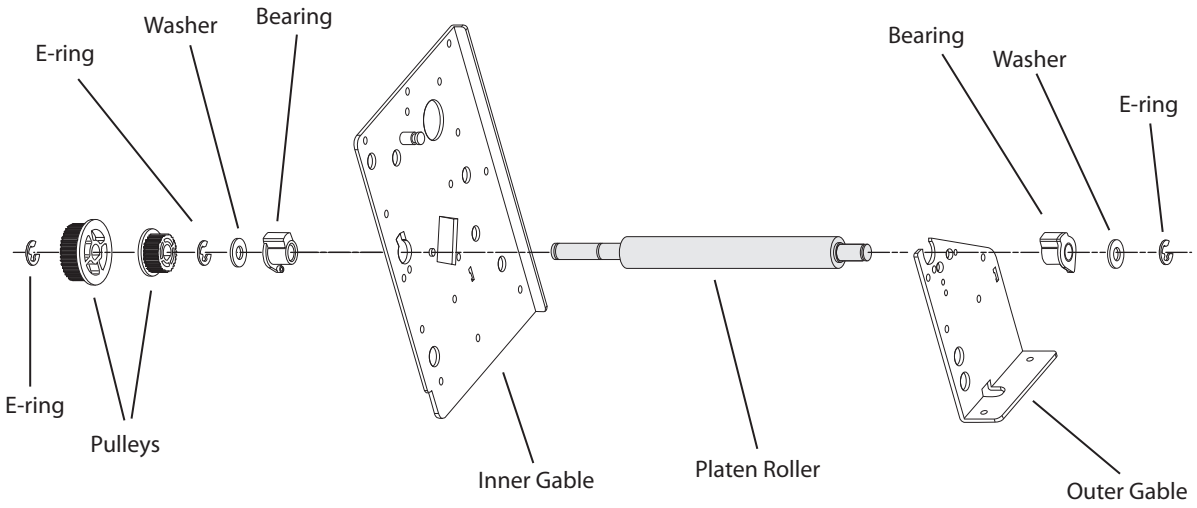
Platen Module

The platen module is comprised of a rubber-coated roller and a shaft. Its purpose is to drive the media through the print mechanism and serve as a counter-force to the thermal printhead. The silicone rubber is subject to wear and requires the platen roller to be replaced, usually with long intervals.

Caution

When cleaning the platen roller, only use isopropyl alcohol. Other chemicals may make the silicone rubber crack, get hard or slippery, or dissolve the surface. Never use sharp tools to remove stuck labels. Do not rotate the platen roller manually until the power has been off a minute or more, or the stepper motor may generate current that can damage the electronics. You could also disconnect the stepper motor cable from the main board.

Beim Reinigen der Druckwalze nur Isopropylalkohol benutzen. Andere Chemikalien können zur Rissbildung im Silikongummi führen, bzw. diesen hart oder schlüpfrig machen oder die Oberfläche auflösen. Steckende Etiketten niemals mit scharfen Werkzeugen entfernen. Die Druckwalze nicht manuell drehen, solange die Stromversorgung nicht mehr als eine Minute ausgeschaltet ist. Der Schrittmotor könnte andernfalls Strom erzeugen, der die Elektronik beschädigen kann. Es könnte auch das Schrittmotorkabel von der Hauptplatine getrennt werden.



Platen Module Exploded View

To replace the platen roller

1. Disconnect the power cord and remove the left-hand panel (see "To remove the left-hand panel" on page 27).
2. Remove the front panel as described on page 22.
3. Remove the E-ring from the inner end of the platen roller shaft and remove the motor belt and pulley.
4. Remove the ribbon rewinder belt and pulley.
5. Remove the E-rings and washers from either end of the platen roller shaft.

6 Remove the bearings.

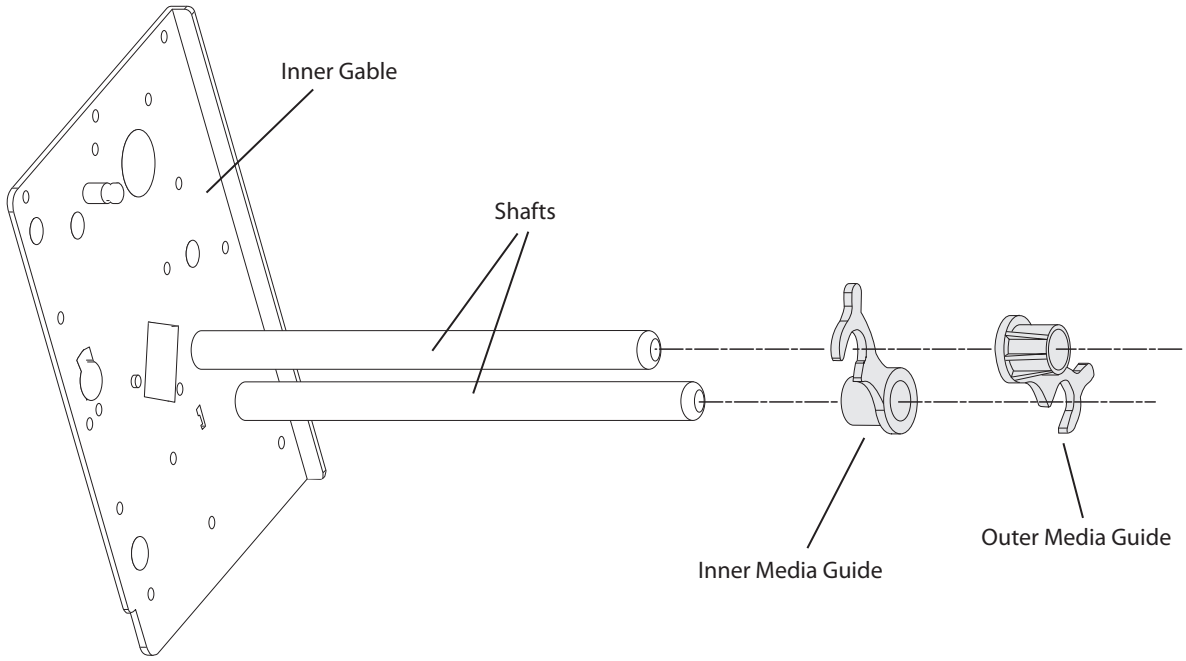
7 Pull out the platen roller.

8 Install the platen roller, bearings, washers, E-rings, pulleys, and front panel in reverse order.

Media Guides

The media guides are made of blue plastic and are designed to guide the media in a straight line through the print mechanism. The inner guide should always be fitted flush to the inner gable of the print module whereas the outer one should be adjusted to fit the width of the media without compressing it. It can be folded upward to facilitate media load.

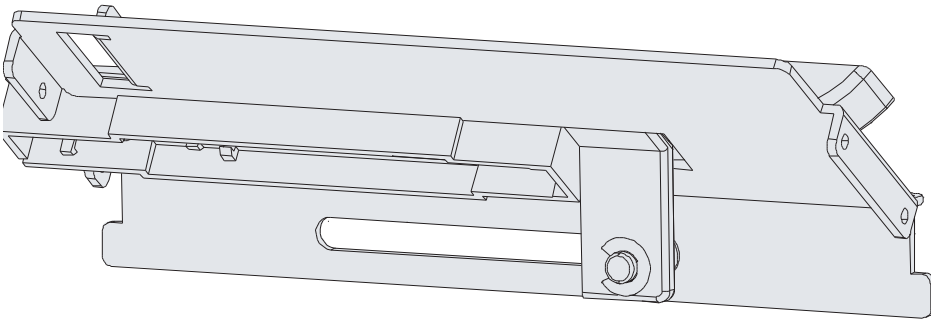
The media guides are pressed onto their respective shafts and can easily be removed and installed by hand. Take care to fit the guides as illustrated below (the flat side should face the media).



Media Guides Exploded View

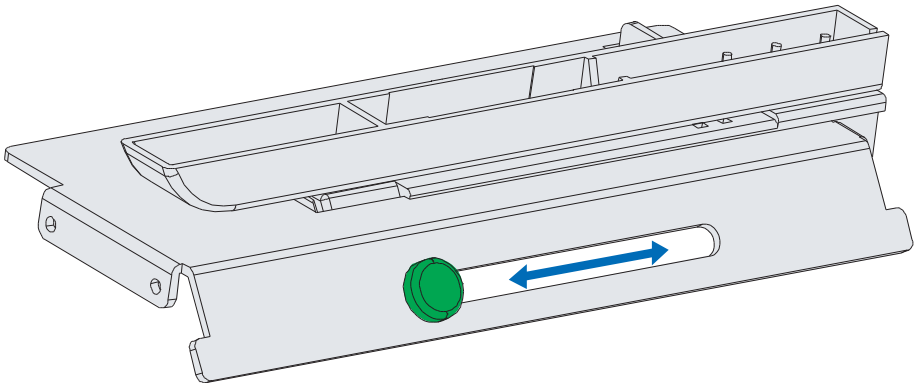
Label Gap Sensor Module

The label gap sensor detects gaps, slots, or black marks in the media as it is fed between the two sensor boards. The lower board contains a LED and a light sensor, whereas the upper board only has a sensor. By comparing the detection of light/no light with the paper type setup (black mark/gap paper/plain paper), the firmware can determine the position of the labels or similar along the media path and also detect out-of-media conditions.



Label Gap Sensor Module: Front View

The label gap sensor's point of detection can be moved manually across the media path from 0 to 57 mm (0 to 2.24 in) from the inner edge of the media. The point of detection is indicated by a narrow white triangle visible from the front of the print mechanism when the printhead is open.



Label Gap Sensor Module: Rear View

The sensitivity of the sensor is automatically adjusted when you run a testfeed. For more information, see the printer user's guide.

You can also adjust the sensor with Fingerprint commands. For help, see the *Intermec Fingerprint Command Reference Manual* (937-005-xxx).

To replace the label gap sensor module

Note: Before replacing the module, check that there is no dirt, dust, adhesive residue, or stuck labels that blocks the light between the two sensors. To clean the sensors, it may be necessary to take out the module as described below.

1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Open the right-hand door and remove the bottom right-hand panel (For help, see "Bottom Right Panel" on page 22).

3 Remove the E-ring, washer, and bearing from the outer end of the platen roller (the end in the media compartment).

4 Remove the six screws that hold the outer gable of the printhead.

5 Fold the outer gable aside, taking care not to damage the headlift sensor and its cable (see **"Headlift Sensor" on page 48**).

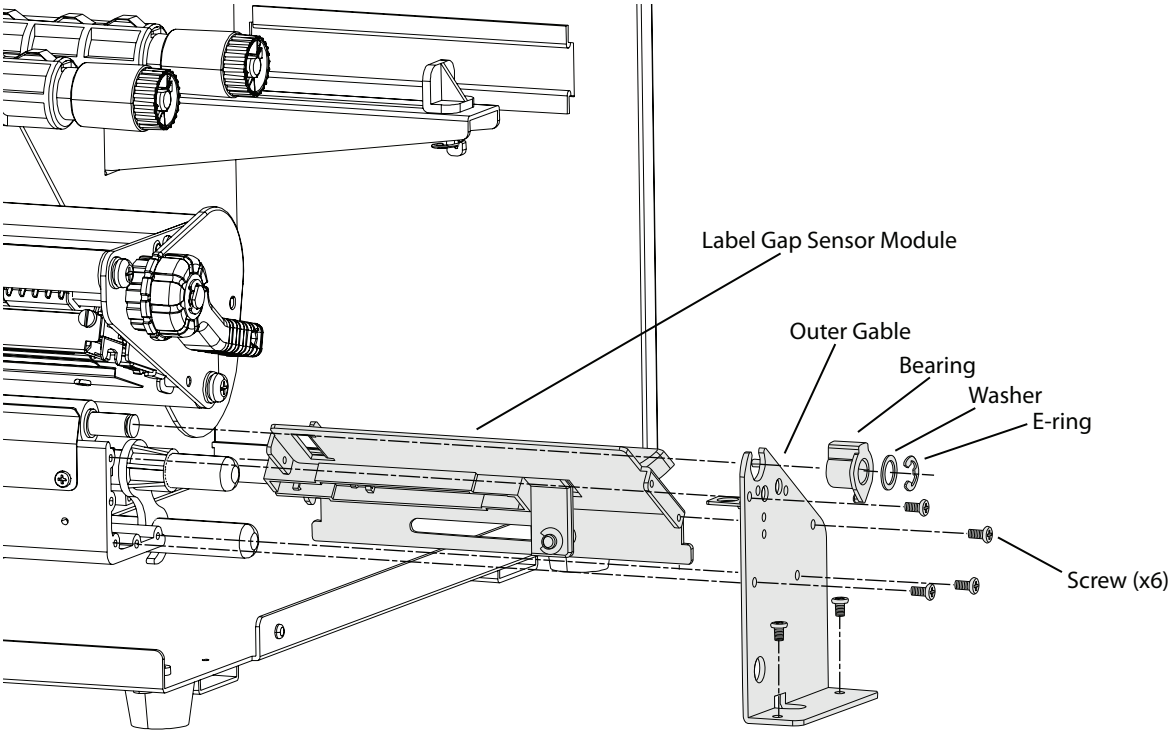
6 Remove the single screw that holds the label gap sensor module in the electronics compartment. It is situated immediately to the rear of the black sensor module.

7 Disconnect the cables from P36 ("GAP") and P37("MARK") on the main board. Free the cables from the spiral bindings and the cable clip.

8 Pull out the entire label gap sensor module into the media compartment.

9 Do not dismantle the module. The entire module is available as a replacement part.

10 Install the label gap sensor module in reverse order.



Label Gap Sensor Assembly Exploded View

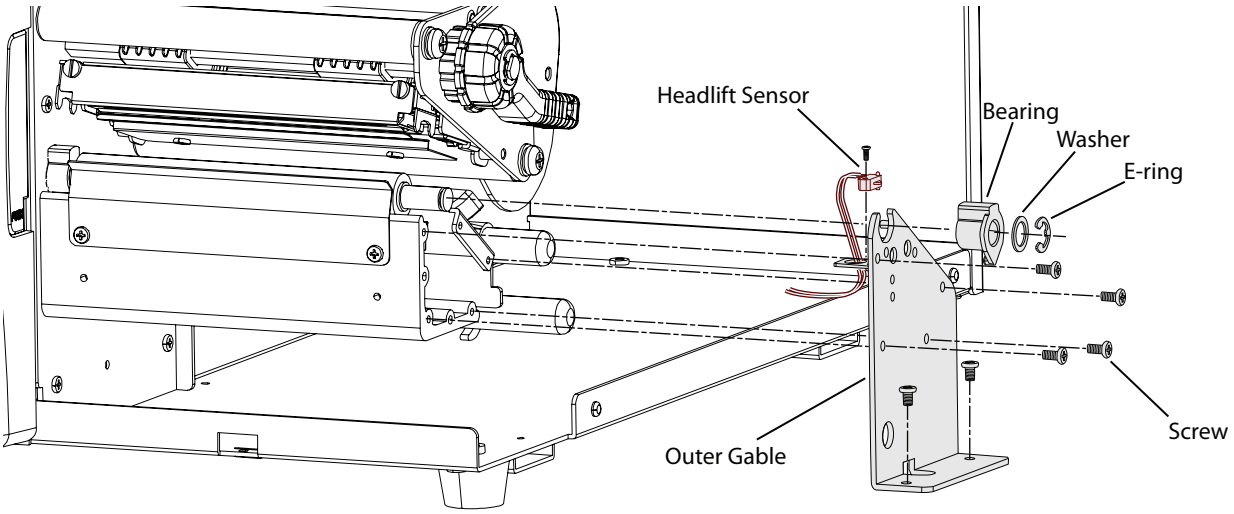
Headlift Sensor

The headlift sensor is a microswitch fitted inside the outer gable of the print mechanism, immediately below the platen roller bearing. The microswitch is activated by an arm connected to the printhead lever. If attempting to print while the headlift sensor indicates that the printhead is open, Error 11 "printhead lifted" occurs.

The headlift sensor is connected to P34 (“HEADLIFT”) on the main board.

To replace the headlift sensor

1. Disconnect the power cord and remove the left-hand panel (For help, see **“To remove the left-hand panel” on page 27**).
2. Disconnect the cable from P34 (“HEADLIFT”) on the main board. Free the cable from the spiral binding and the cable clips.
3. Remove the E-ring, washer, and bearing from the outer end of the platen roller (the end in the media compartment).
4. Remove the six screws that hold the outer gable of the printhead.
5. Remove the screw that holds the headlift sensor and the L-shaped bracket to the outer gable.
6. Carefully retract the headlift sensor cable from inside the electronics compartment through the hole in the center section (you may have to remove several cable clips inside the electronics compartment).
7. Install the new headlift sensor and bracket in reverse order.



Printhead Module

The printing is performed by the thermal printhead, which consists of a line of very small, closely spaced resistors on a ceramic tile fitted across the media path. When a current is led through the resistors, commonly called “dots,” these will be heated very quickly. When the current is shut off, the dots cool down just as fast.

As the media is fed past the dots, the heated dots will produce a number of black spots on heat sensitive (direct thermal) media, or on other face materials via a thermal transfer ribbon. The spots can be combined into bitmap patterns, which make up characters, bar codes, images, lines, and boxes.

The direct thermal printing method requires special media coated with a thin layer of heat-sensitive chemicals. As the media is fed past the dots, the heat from the dots will make the chemicals react, producing a dark salt, which makes up the imprint under each dot.

In the thermal transfer printing method, a special ink-coated transfer ribbon is used. When the ribbon is heated by a dot on the printhead, the ink melts and sticks to the receiving face material, where the ink immediately becomes solid again, producing a black spot. Transfer ribbons normally do not smear at room temperature, neither before nor after printing. Nor do the printed labels smear, even if the printout may be smudged by extensive rubbing if an unfortunate combination of ribbon and face material is used. The thermal transfer method makes it possible to use a wide range of face materials for printing, for example papers, boards, plastics, foils, etc. However, an original transfer ribbon from Intermec should always be used.

Information on how to switch between direct thermal and thermal transfer printing is provided in the user's guide of each respective printer.

The EasyCoder PD41/PD42 printer can be fitted with two printheads with different densities:

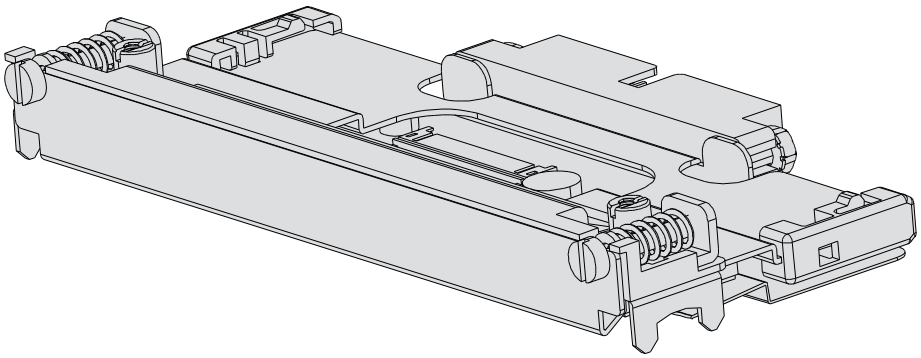
- In a 203.2 dpi printhead (8 dots/mm), each dot under standardized conditions will produce a black spot which has a diameter of 4.92 mils (0.125 mm).
- In a 300 dpi printhead (11.81 dots/mm), each dot under standardized conditions will produce a black spot which has a diameter of 3.33 mils (0.086 mm).

Depending on dot temperature, exposure time, media and ribbon characteristics, etc., the spot may actually be somewhat smaller (weak print) or larger (black print). However, that does not affect the calculation of distances, sizes, and positions.

Note: When switching to a printhead with a different density, the printhead PCB must also be replaced.

The printhead is subject to wear both from the direct thermal media (or ribbon) and from the rapid heating and cooling process during printing. Thus, the printhead will require periodic replacement.

Time between printhead replacements depends on the print images, the type of direct thermal media (or ribbon) in use, the amount of energy to the printhead, the print speed, the ambient temperature, and several other factors.



Printhead

Note: While replacing the printhead, the power must be off. The firmware will not detect the new printhead resistance until the printer has been restarted.

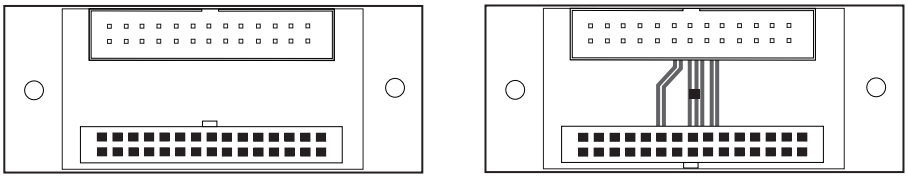
Take precautions against electrostatic discharges by touching a grounded object. For example, the chassis of the printer (assuming the printer is connected to a grounded wall socket).

Follow ESD Procedures

To replace the printhead

1. Switch off the power to the printer.
2. Open the side door.
3. Lift the printhead by pulling out the printhead lever and flipping it counterclockwise a quarter of a turn.
4. Remove any transfer ribbon.
5. Remove the old printhead by pulling it out straight forward.

Note: Steps 6-9 describe how to replace the printhead's PCB (Printed Circuit Board), which is required if you are switching to a printhead with a different density (for instance, going from 203 dpi to 300 dpi). If you are just replacing a worn-out printhead, proceed to step 10.



203 dpi Printhead PCB (left) and 300 dpi Printhead PCB (right)

6. To facilitate the removal of the PCB, center the balance boxes.

7 Use an appropriate tool, for instance a straight-slot screwdriver, to carefully pry the printhead cable connector loose from the PCB.

8 Loosen the screws and remove the old PCB.

9 Attach the new PCB with the screws and connect the printhead cable. Adjust the position of the balance boxes so that they do not obstruct the procedure.

10 Connect the new printhead.

11 Reload the transfer ribbon, lower the printhead, close the side door and switch on the power.

Extending the Life of the Printhead

Some simple measures can be taken by the user to extend the life of the printhead:

- Clean the printhead regularly, as described in the user's guide. Not only will a dirty printhead produce an inferior printout, but any residue on the dots will prevent heat to dissipate through the media.
- Use as low density setting as possible. Too much energy to the printhead will wear it out rapidly.
- Do not use higher speed setting than necessary.
- Low ambient temperature requires more energy to the printhead dots than room temperatures and will therefore cause more wear to the printhead. High print speed accelerates the wear. Thus, at low temperatures, select as low a print speed as acceptable.
- Do not use a higher printhead pressure than necessary.
- Never print outside the media path. Dots that are not in contact with the media will not be cooled properly.
- When using media with less than full width, be careful to adjust the printhead balance so there is an even pressure across the media. Not only will an uneven pressure impair the printout quality, but it may also prevent the dots from being cooled properly. Moreover, a sharp outer media edge in direct contact with the printhead may cause excessive mechanical wear on some dots, which may be visible when printing on wider media later.
- When using preprinted labels or labels with some type of varnish or non-standard top coating for direct thermal printing, use original Intermec labels or inks recommended by leading manufacturers of direct thermal media. The labels must not contain any aggressive substances such as chloride or grinding substances such as titanium dioxide.
- Only use transfer ribbons recommended by Intermec.

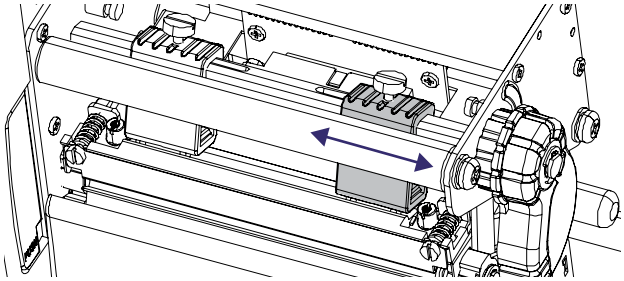
Adjusting the Printhead

The printer is factory-adjusted for full-size media width. When using media less than full width, Intermec recommends that you adjust the position of the printhead balance boxes so an even pressure is applied across the media.

A poorly adjusted printhead pressure may be detected by a weaker printout on either side of the media path.

To adjust printhead balance

1. Open the side door.
2. Remove the ribbon.
3. Lift the printhead.
4. Move the balance box on the right side (outer) outward (to the right) for wider media and inwards (to the left) for more narrow media.



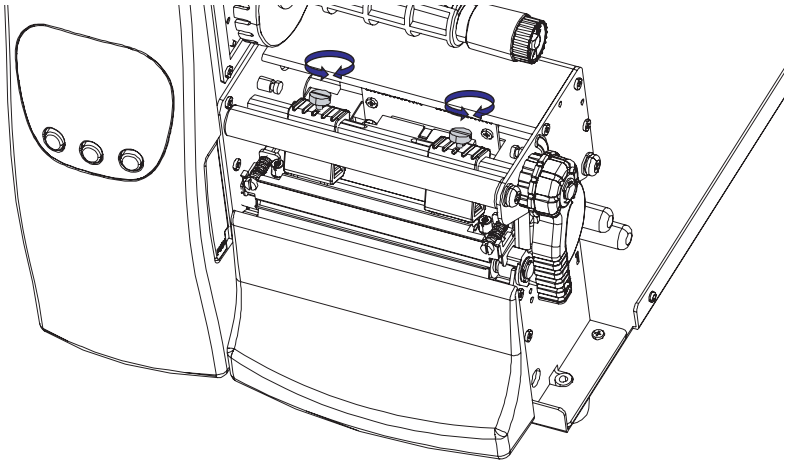
5. Engage the printhead and load the ribbon.
6. Test and readjust if necessary.

The pressure of the thermal printhead against the platen roller is factory-adjusted. However, if the printing is weaker on one side of the media or if the thermal transfer ribbon starts to crease (indicated by unprinted white streaks along the media feed direction), it may be necessary to readjust the printhead pressure.

To adjust printhead pressure

Note: Before attempting to adjust the printhead pressure, try to fix the problem by moving the outer balance box as described in the previous section.

1. Open the side door.
2. Remove the ribbon.
3. Lift the printhead by pulling out the printhead lever and flipping it counterclockwise a quarter of a turn.
4. Use a straight-slot screwdriver to turn the screw at the top of the balance boxes clockwise to increase the pressure or counterclockwise to decrease the pressure. To reset the factory default setting, turn the screws down completely and then 9 turns up (counterclockwise).



5 Engage the printhead and load the ribbon.

6 Test and readjust if necessary.

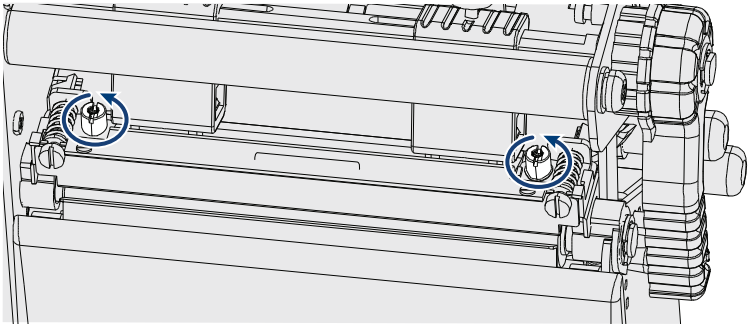
When using thick or stiff media, the printhead needs to be moved forward so the dot line is precisely aligned with the top of the platen roller. The platen roller and printhead must of course be perfectly parallel as well.

To adjust the printhead dot line position

1 Open the side door.

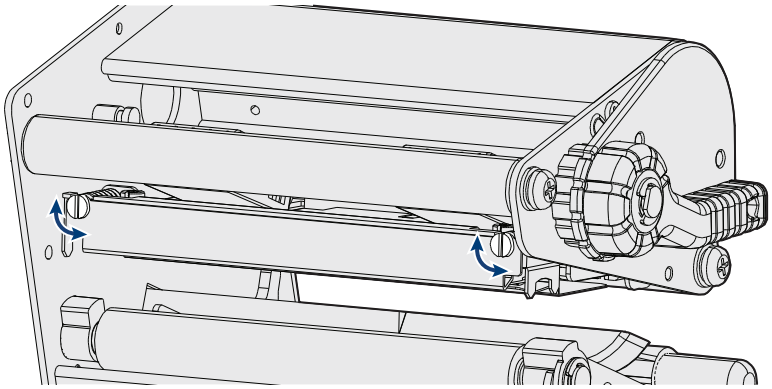
2 Remove the ribbon and lower the printhead.

3 Use a straight-slot screwdriver to turn the two screws at the top of the printhead bracket counterclockwise a single turn.



4 Turn the printhead lever to raise the printhead.

5 Carefully turn both screws at the front of the printhead clockwise a quarter of a turn at a time (a full turn corresponds to 0.55 mm, which is a lot). Be sure to make identical adjustments on both screws! If you are unsure, tighten both screws by turning them counterclockwise as far as they go and start over.



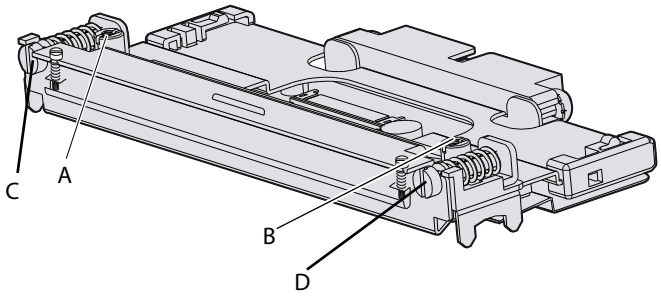
6 Engage the printhead and lock the printhead by tightening the two screws at the top of the printhead bracket (the reverse action of Step 3).

7 Load the ribbon (only in case of thermal transfer printing).

8 Test the print quality and readjust if necessary.

To reset dot line position to factory default setting

1 Release screws A and B (half a turn is enough).

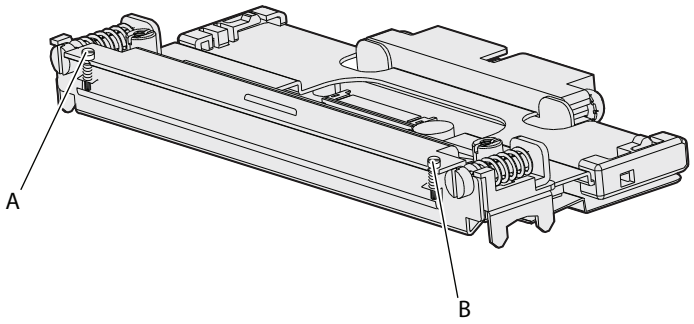


2 Tighten screws C and D (counterclockwise) as far as they will go. Be careful not to overdo it, as it may damage the threads.

3 Unscrew screws C and D 5 full turns (200 dpi printhead) or 1 ½ turns (300 dpi printhead).

4 Tighten screws A and B.

The ribbon shield mechanism is located on the thermal printhead. It has two adjustable screws, A and B, as shown below.



Ribbon Shield Adjustment Screws

If labels come out looking as depicted below, you may want to try adjusting the ribbon shield.

Low Quality Printout: These bar codes show the results of ribbon wrinkling.

To adjust ribbon shield

1. If the label printout matches Test label A, turn screw A clockwise. If the printout matches Test label B, turn screw B clockwise.
2. Twist the screw half a turn clockwise and perform a new test print.
3. Continue until you achieve a smooth printout quality.

Screw adjustment must not exceed two full turns or paper may not feed smoothly. In such a case, turn the screws counterclockwise completely and start over.

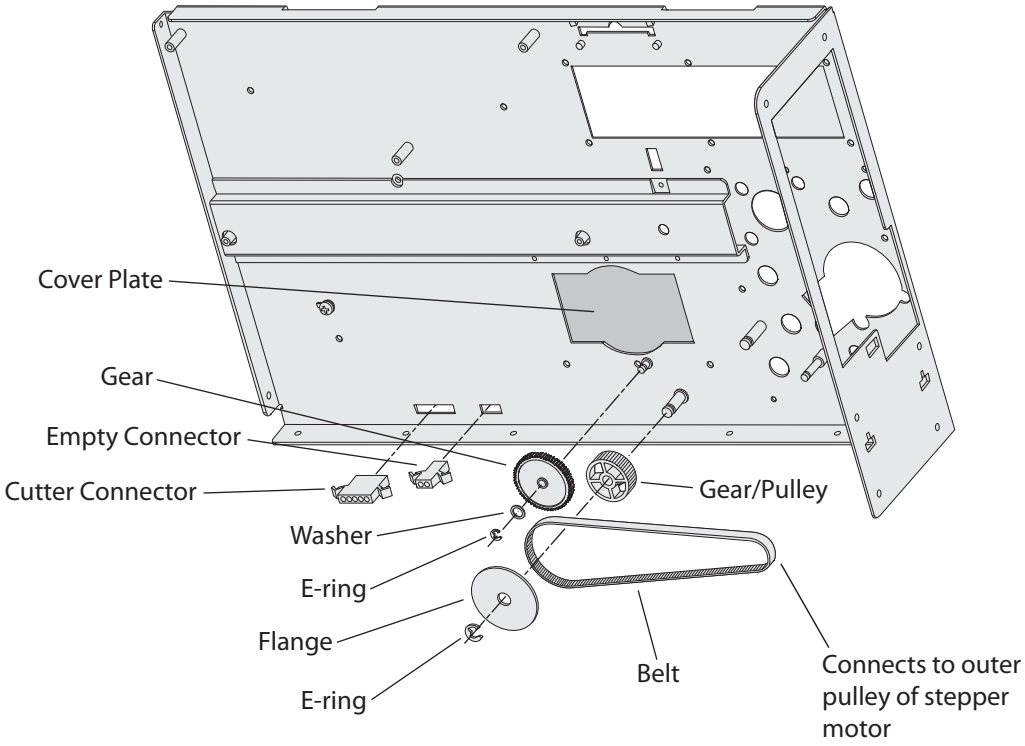
To reset ribbon shield to factory default setting

1. Tighten screws A and B (see above) so that the springs are fully compressed. Be careful not to overdo it, as it may damage the threads.
2. Unscrew screws A and B 4 ½ turns.

Rewinder Module

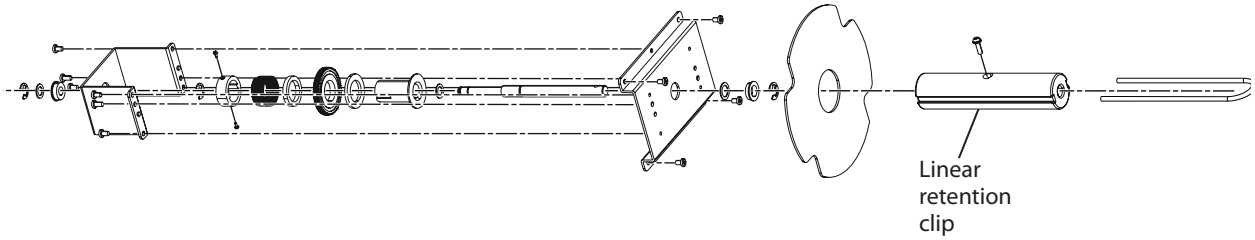
This section describes the optional internal rewinder required for peel-off (self-strip) and batch takeup operation.

The rewinder module is an optional device for the EasyCoder PD41/PD42 printer. The printer is prepared with belt, pulley, and gear train for driving the rewinder using the same stepper motor that also drives the platen roller and transfer ribbon rewinder. A removable plate covers the hole in the center section for the rewinder.



Rewinder Module: Driving components

The rewinder module consists of the parts depicted below. Only the liner retention clip is available as a spare part.



Rewinder Module: Exploded view

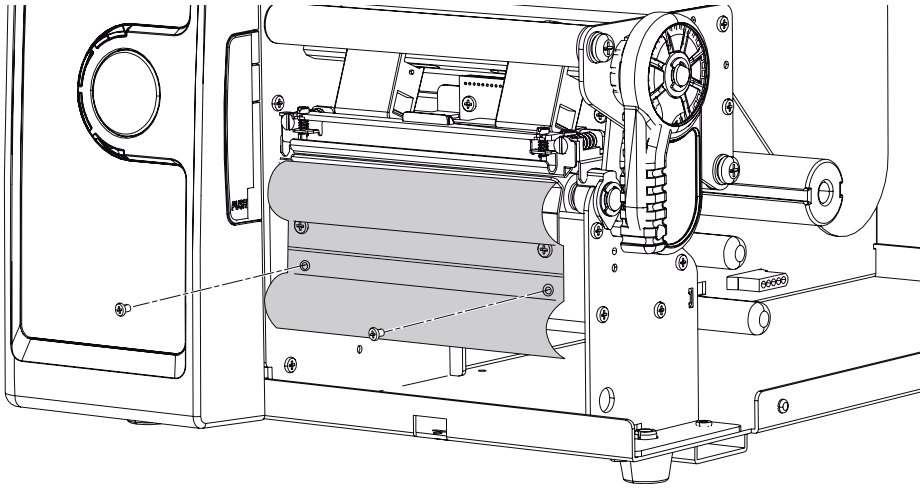
Installing the Rewinder

The installation kit contains:

- One rewinder module with liner retention clip
- One liner retention guide
- Four M3x4.5 screws

To install the rewinder

1. Open the side door.
2. Remove the rewinder option cover plate, held by two phillips screws (see previous page).
3. Remove the liner retention clip from the rewinder unit. Attach the rewinder unit to the center section of the printer using two of the screws included in the kit together with the two that were previously used to hold the cover plate in place.
4. For batch takeup operation only: Remove the screw that holds the front cover. Remove the front cover (In batch takeup operation, labels are wound up on the internal rewinder instead of being peeled off at the tear bar).
5. For batch takeup operation only: Attach the liner retention guide.



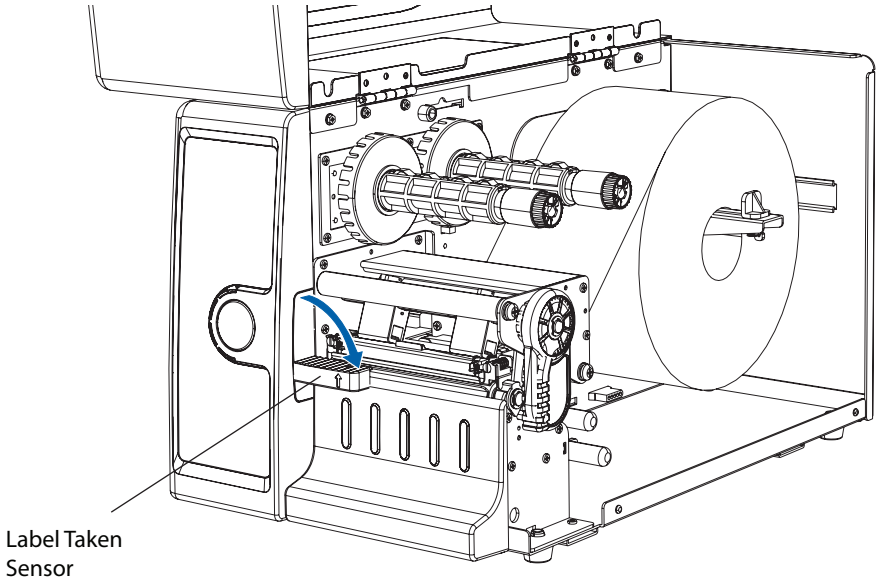
6. Install media as described in the printer user's guide.

Label Taken Sensor (LTS)

This section describes the Label Taken Sensor, which is a standard feature on the EasyCoder PD41/PD42 printer.

The purpose of the Label Taken Sensor is to detect if a label has been removed after printing and—if not—hold the printing of the next label. It works equally well when the media is manually torn off after printing as when the labels are automatically separated from the liner. The latter requires an optional rewinder module (see **"Rewinder Module" on page 57**).

The LTS is normally folded up into the side of the front panel but can be folded down to a horizontal position after the right hand door has been opened. In the horizontal position, it detects labels approximately 15 mm (0.59 in) from the inner edge of the media path and approximately 22 mm (0.86 in) in front of the printhead's dot line.



Note: If you are running a software application, the LTS must be activated before it can be used. When you are not using the LTS, be sure to flip it back in vertical position and de-activate it in the application. Also note that the LTS cannot be used when a paper cutter is installed.

The LTS has a plastic housing, which is hinged on a pin protruding from the inside of the panel module. The housing contains a circuit board with a LED and a light-sensitive sensor. The sensors are connected to P38 (marked "LTS") on the main board. When the light from the LED is reflected back from the back side of a label and hits the sensor, a "label present" condition is assumed. If no light is detected, a "label taken" condition is assumed. Thus, the sensor is somewhat sensitive to the ambient light conditions and to the reflection properties of the back side of the media.

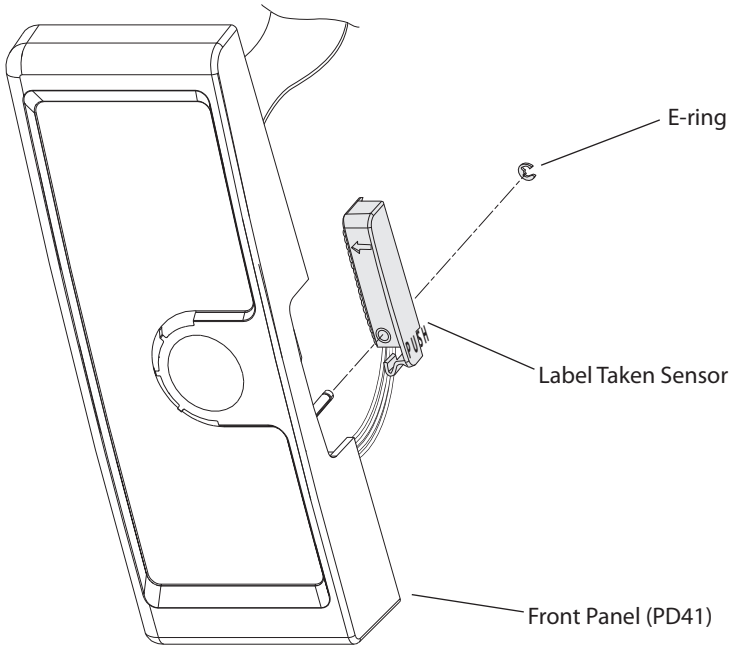
Before replacing the LTS, troubleshoot it by checking that:

- The sensor is in its horizontal position.
- Nothing blocks the LED and the sensor, for example dust or stuck labels.
- The back side of the media is able to reflect the light.
- The cables of the sensor are undamaged and properly connected to P38 ("LTS") on the main board.

To replace the Label Taken Sensor

Take standard precautions against ESD (Electrostatic Discharges) before touching any electronics components.

1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Remove the front panel (For help, see "To replace the front panel" on page 22).
3. Remove the E-ring that holds the LTS and pull it away. The LTS is only available as a complete unit.
4. Assemble in reverse order.



Label Taken Sensor

Cutter

The cutter is an optional device which is used to cut off sections of continuous media after printing. When a cutter is installed, the Label Taken Sensor cannot be used (For help, see **"Label Taken Sensor (LTS)" on page 59**). The cutter can cut non-adhesive media 64 to 114 mm (2.52 to 4.4 in) wide and with a thickness of 60 to 250 µm (2.3 to 9.8 mils).

Caution

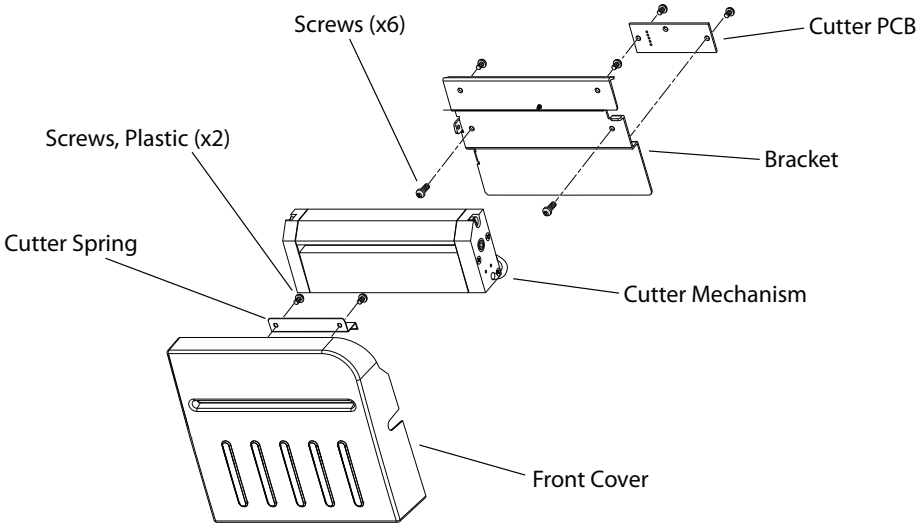
Never use the cutter to cut through any kind of adhesive. The adhesive will get stuck on the shears and can render the cutter inoperable or even damage it. If you need to cut self-adhesive labels, be careful to only cut through the liner between labels.

Mit der Schneidvorrichtung niemals klebstoffhaltiges Material schneiden. Der Klebstoff haftet an den Scheren an und kann die Schneidvorrichtung unwirksam machen oder beschädigen. Falls selbstklebende Etiketten geschnitten werden müssen, darf dies nur durch den Bogen zwischen Etiketten erfolgen.

The main parts of the cutter are:

- Cutter mechanism
- Cutter PCB

The cutter is controlled from the software application, such as Fingerprint, InterDriver, or LabelShop). For more information, see the printer user's guide.



Installing the Cutter

The installation kit contains all of the parts shown above, along with cables for connection to the main board.

To install the cutter

1. Remove the screw that holds the front cover. Remove the front cover.
2. Remove the tear bar, which is held by two Phillips screws.
3. Attach the cutter mechanism to the printer using the two Phillips screws included in the kit.
4. Plug the cutter cable into the connector in the center section. Secure the cable to the bottom plate using the two cable clips included in the kit.
5. Hook the cutter cover onto the cutter mechanism and lock the cover with the screw at the bottom.

Clearing Media Jams in Cutter

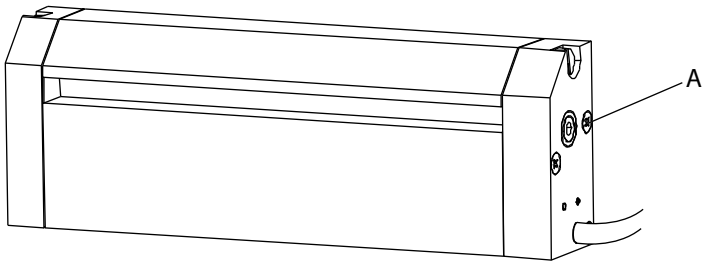
Warning

Never insert fingers or tools into the cutter while the power is on. Risk of personal injury or damage to the cutter if the cutter starts to run by mistake.

Nie Finger oder Werkzeuge in die Schneidvorrichtung stecken, während die Stromversorgung eingeschaltet ist. Falls die Schneidvorrichtung versehentlich aktiviert wird, besteht Verletzungsgefahr und außerdem kann die Schneidvorrichtung beschädigt werden.

To clear a media jam inside the cutter mechanism

1. Switch off the power to the printer.
2. Insert a 3 mm hexagon screwdriver in the hole on the side of the cutter (A) and turn the cutter blade clockwise.



3. After the media jam is cleared, switch on the power to the printer, and the cutter blade will go back to its original position.

Note: It is recommended to use labels with a minimum length of 30 mm (1.2 in).

Power Supply

The power supply unit is primary-switched with a power correction factor controller in order to comply with the CE regulations, which require a sine-shaped load curve. It is designed for input voltages in the range of 110/240 VAC, 50 to 60 Hz directly from the socket. The power module converts the current using switching technique and delivers +24 VDC (± 2%) to the main board via a cable harness from CN1 on the power module to P60 ("POWER") on the main board.

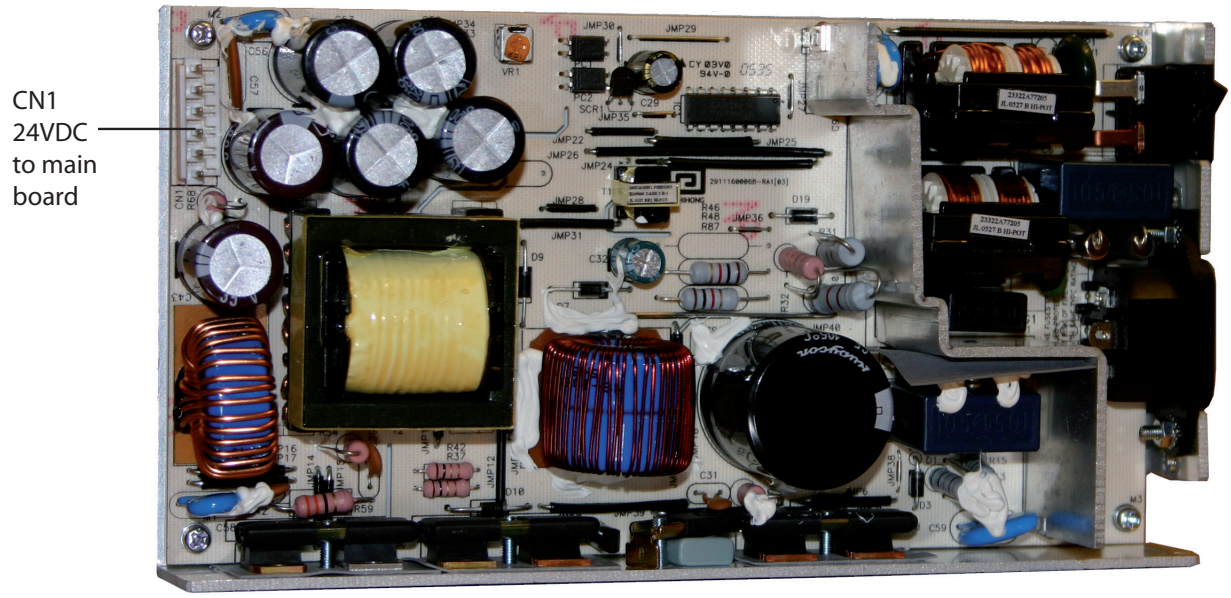
The power supply is equipped with over-temperature protection and high voltage protection. If any of these are triggered, the module will shut down immediately and you will have to turn the printer off and then back on (once the cause of the error has been identified and eliminated).

Power Consumption

Stand-by:	~12W
Normal operation:	~80W
Peak:	~280W

The power supply unit contains wires and circuits with dangerous voltages. For safety reasons, it is strictly forbidden to try to repair a power supply unit or to replace a blown fuse. Whenever a fuse blows, always replace the entire power supply unit.

Das Netzteilmodul enthält Kabel und Schaltkreise, die gefährliche Spannungen führen. Aus Sicherheitsgründen ist es streng untersagt, ein Netzteilmodul zu reparieren oder eine durchgebrannte Sicherung auszutauschen. Falls eine Sicherung durchbrennt, muss das gesamte Netzteilmodul ausgetauscht werden.



PD41/PD42 Power Supply Unit

To replace the power supply module

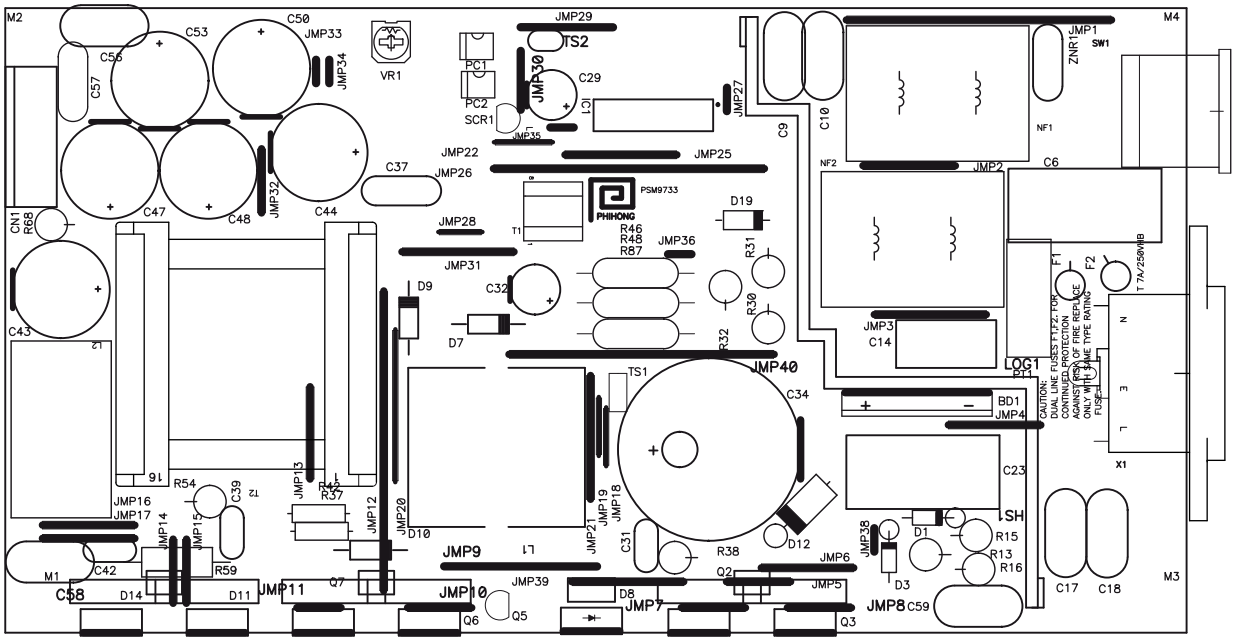
1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Disconnect the cable harness which connects the power module to the main board.
3. Remove the two screws that hold the power module to the bottom plate.
4. Remove the two screws that hold the power module to the back plate.
5. Lift out the entire unit.
6. Install the power module in reverse order.

Caution

Once the new power module is in place, make sure it makes proper contact with the bottom plate as this is essential to provide adequate cooling for the unit.

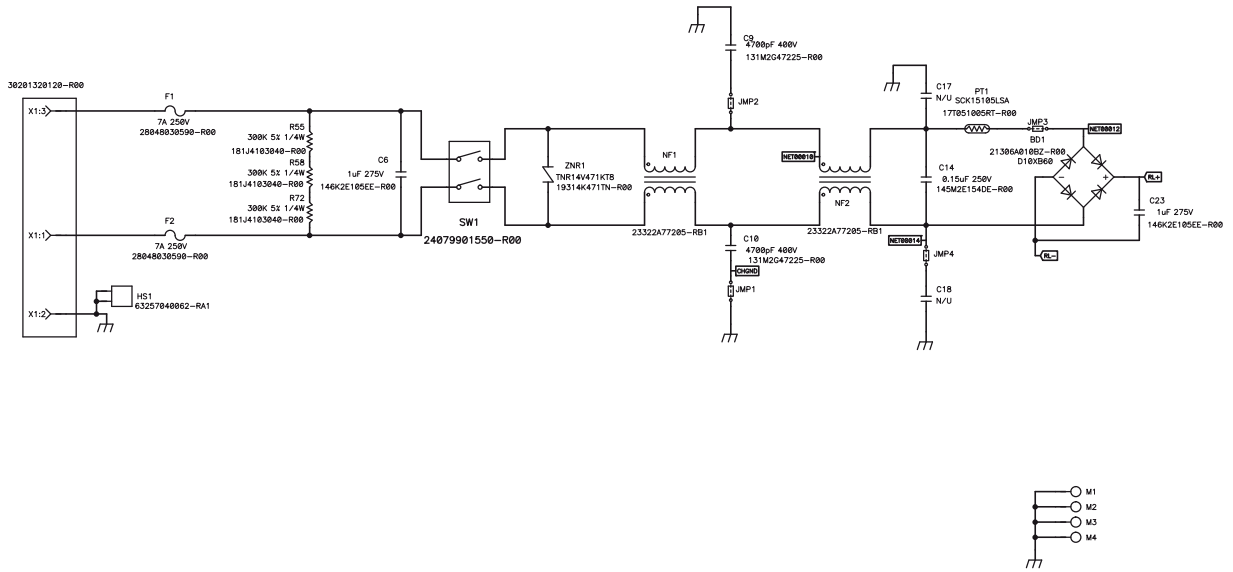
Nachdem das neue Antriebsmodul eingesetzt ist, muss sichergestellt werden, dass es korrekten Kontakt mit der unteren Platte hat, da nur so die ausreichende Kühlung der Einheit gewährleistet werden kann.

Components

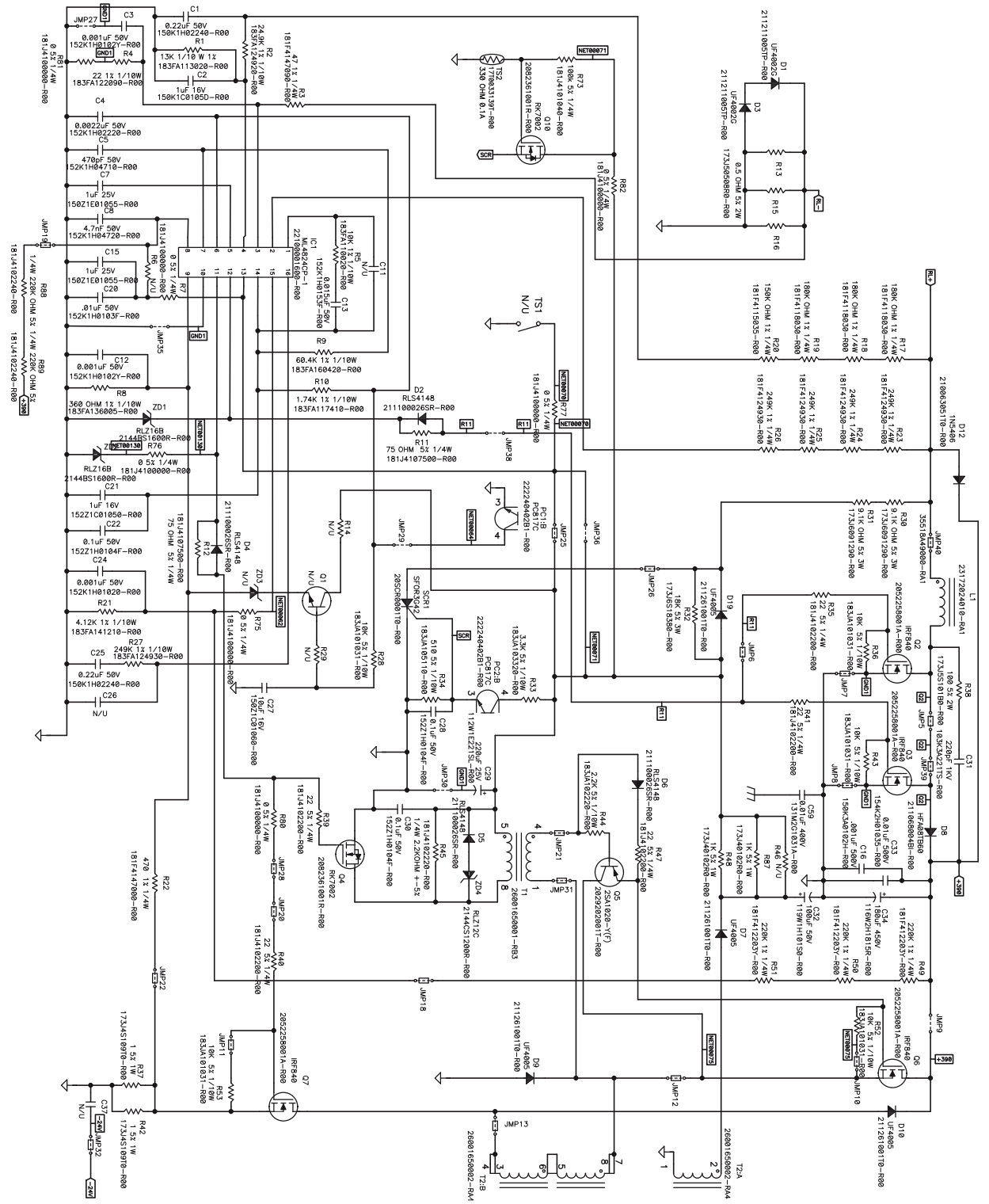


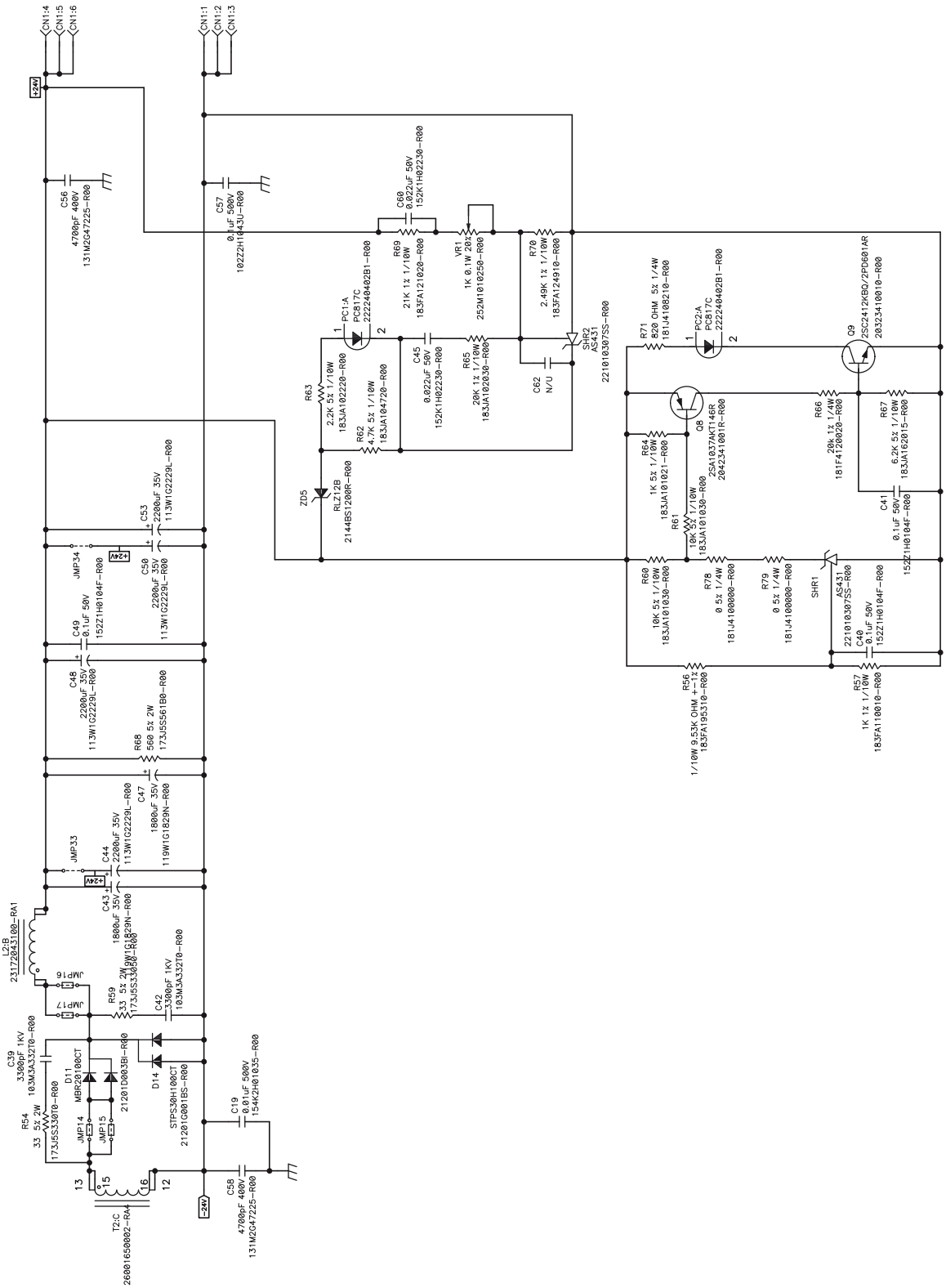
Components on PD41/PD42 Power Supply

Schematics



Schematic forPD41 only

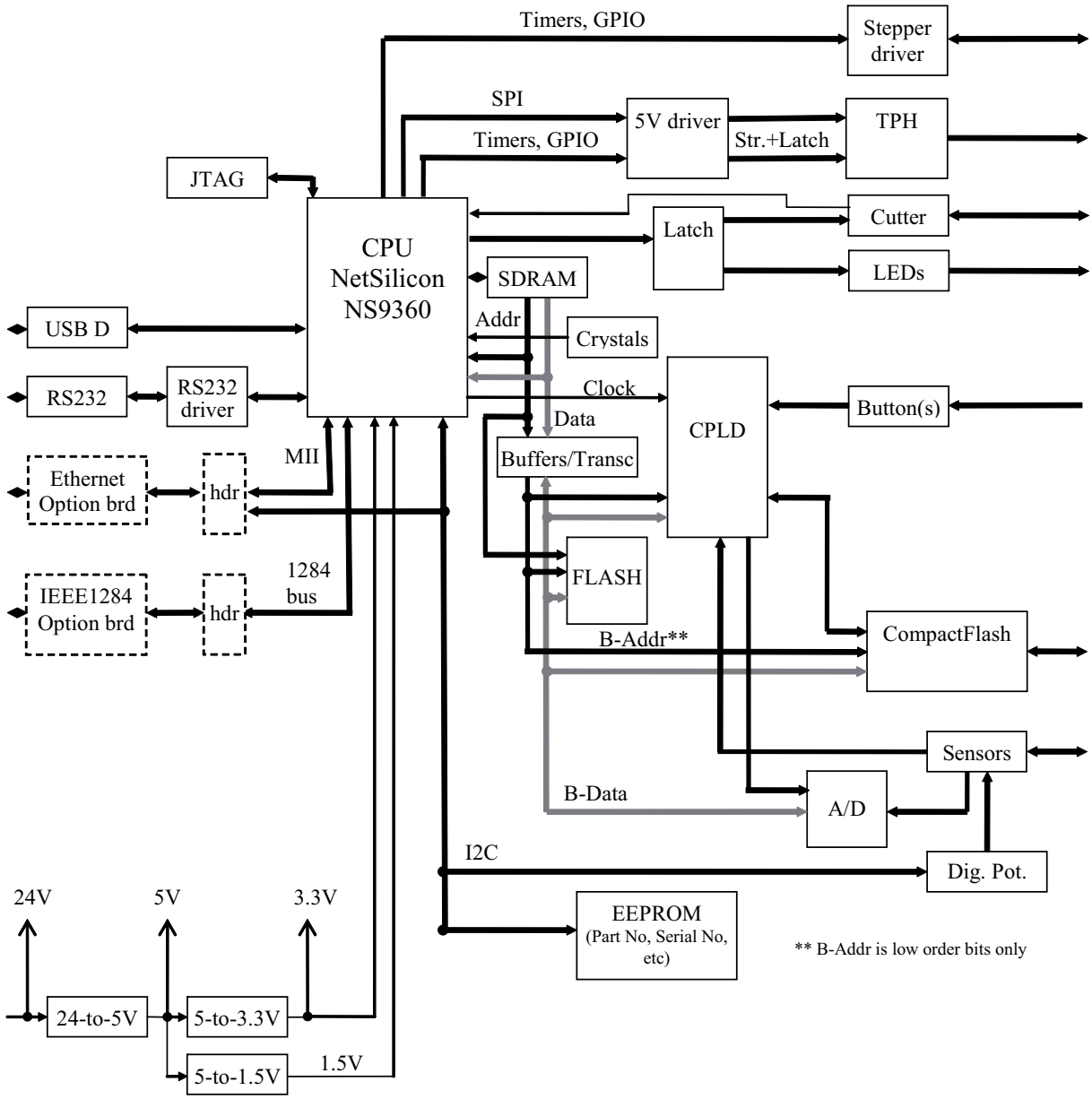




Main Board

The main board is a four-layer board with most of its circuits surface-mounted. Inside the laminate is a combined VCC layer (5V/3.3V/2.5V) and a GND layer. The front and back sides are signal routing layers. The following list represents a selection of important components and functions that are fitted on the main board:

- Processor core
- Thermal printhead driver
- Stepper motor control logic
- Sensor drivers
- Power connector and voltage converters
- Interfaces for external communication, including USB, serial, parallel, and ethernet
- Interfaces for internal communication with stepper motor, accessories, and sensors
- 4 MB (PD41) or 8 MB (PD42) flash memory for code storage, fonts, forms and parameters
- 8 MB (PD41) or 16 MB (PD42) SDRAM for firmware execution and temporary storage
- 2 kbits serial EEPROM for part and serial numbers and identification
- A/D converter for sensor adjustment
- Compact flash memory card expansion (up to 2 GB)
  - CompactFlash Type II (5.0 mm thickness) cannot be used
  - CF+ cards may not work



Main Board Block Diagram (PD41)

Replacing the Main Board

The electronic compartment contains wires and components with dangerous voltage. Always switch off the power and unplug the power cord before you remove the cover over the electronics compartment!

Im Elektronikfach gibt es Kabel und Komponenten, die hohe Spannungen führen. Immer die Stromversorgung abschalten und das Netzkabel abziehen, bevor die Abdeckung des Elektronikfachs abgenommen wird!

Do not attempt to replace individual components on the main board. Replace the entire board instead.

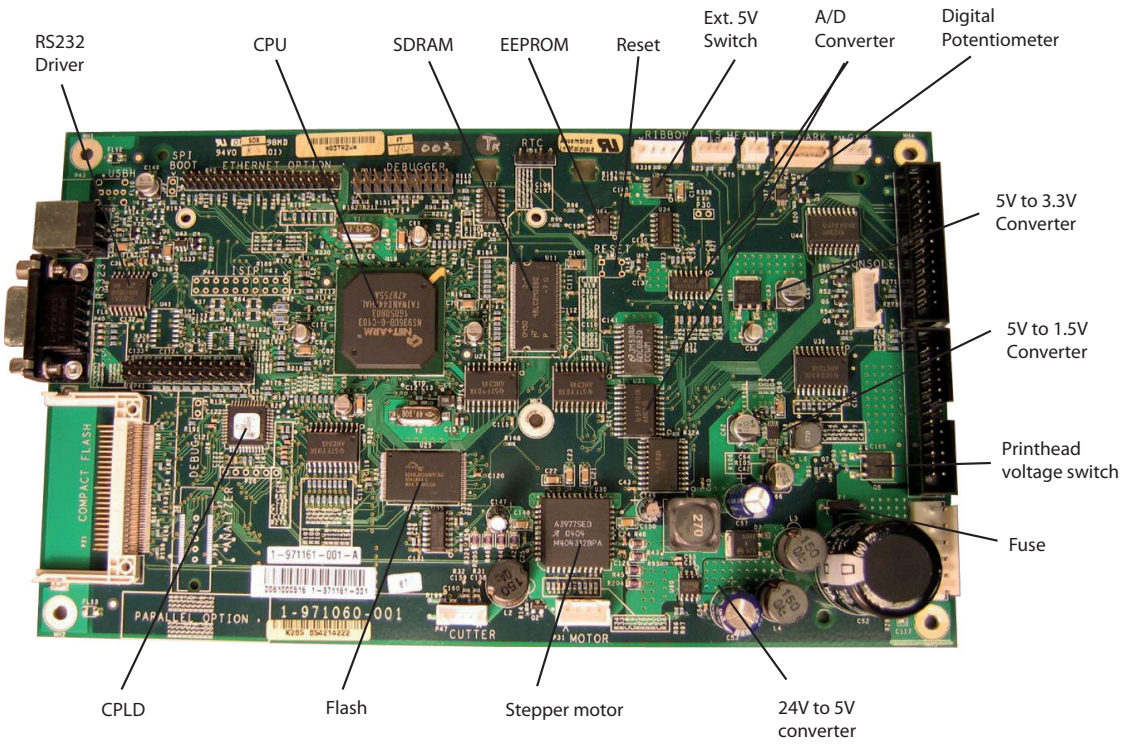
Nicht versuchen, einzelne Komponenten auf der Hauptplatine auszutauschen. Es muss die gesamte Platine ausgetauscht werden.

Take standard precautions against ESD (Electrostatic Discharges) before touching any electronics components.

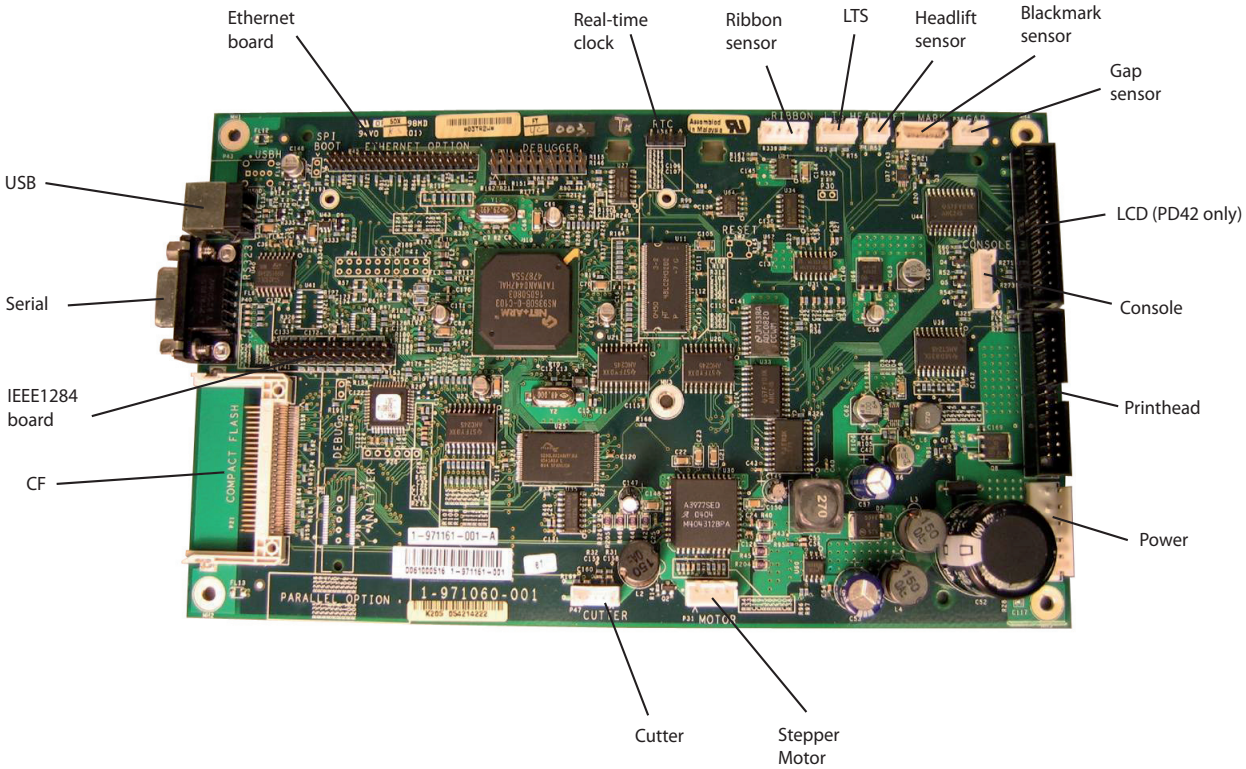
To replace the main board

1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Disconnect all cables from the main board (it may be a good idea to label them first).
3. Remove any CompactFlash memory card.
4. Remove any Ethernet and parallel interface option boards.
5. Remove the five screws and washers that hold the main board.
6. Lift out the main board and install in reverse order.

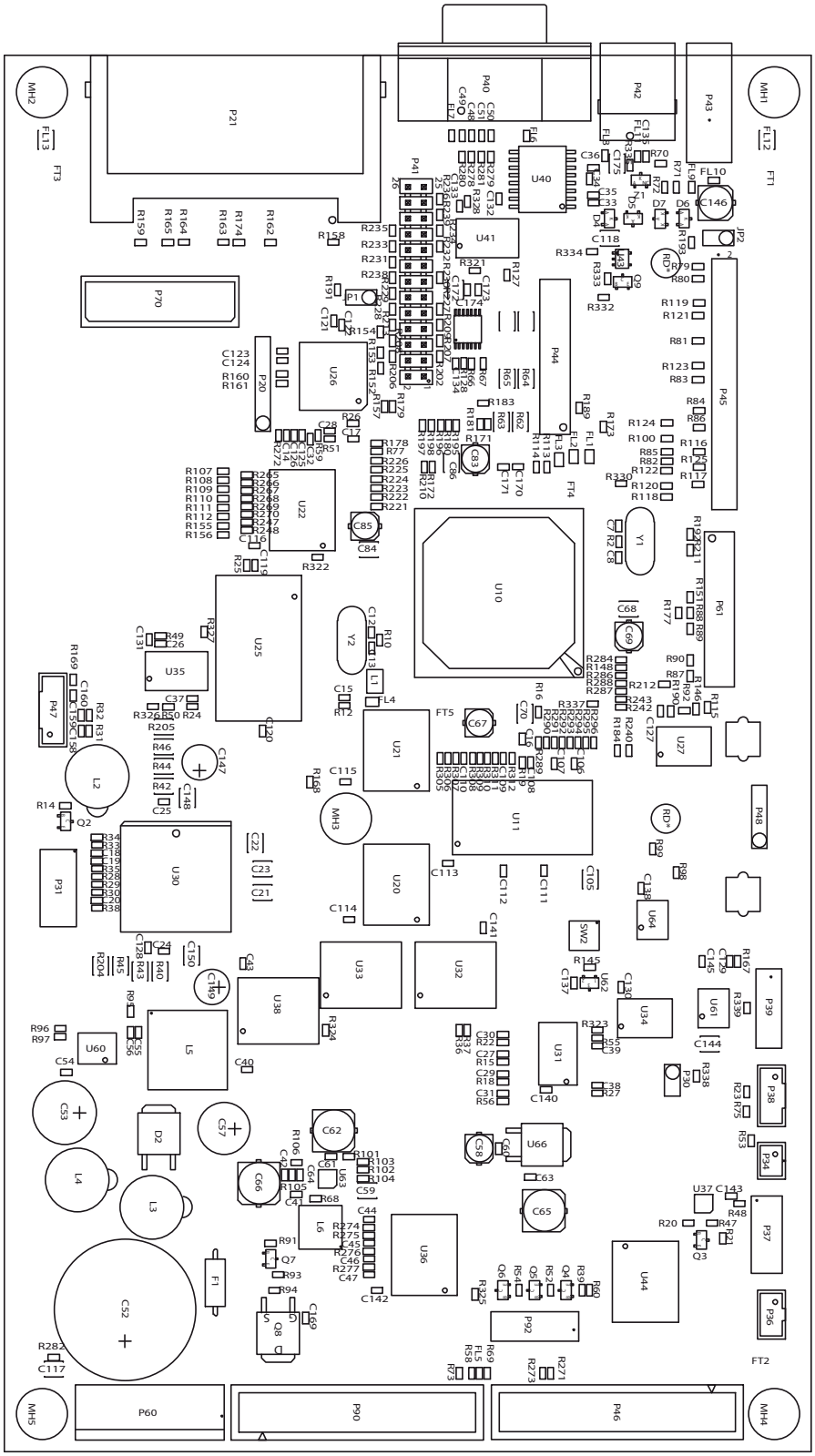
Circuits Overview



Main Board, Interfaces



Main Board, Components and Reference Points

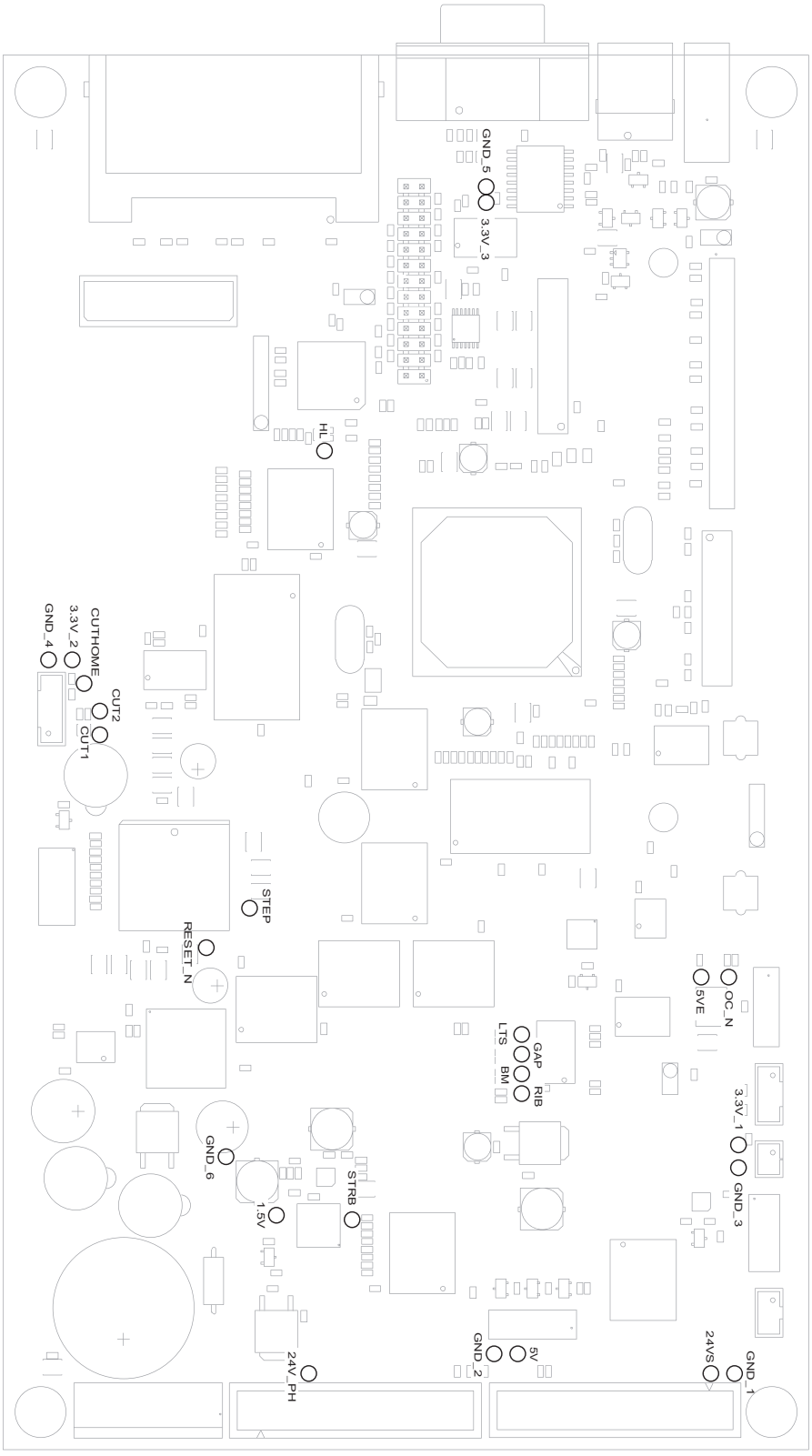


Selected Test Points

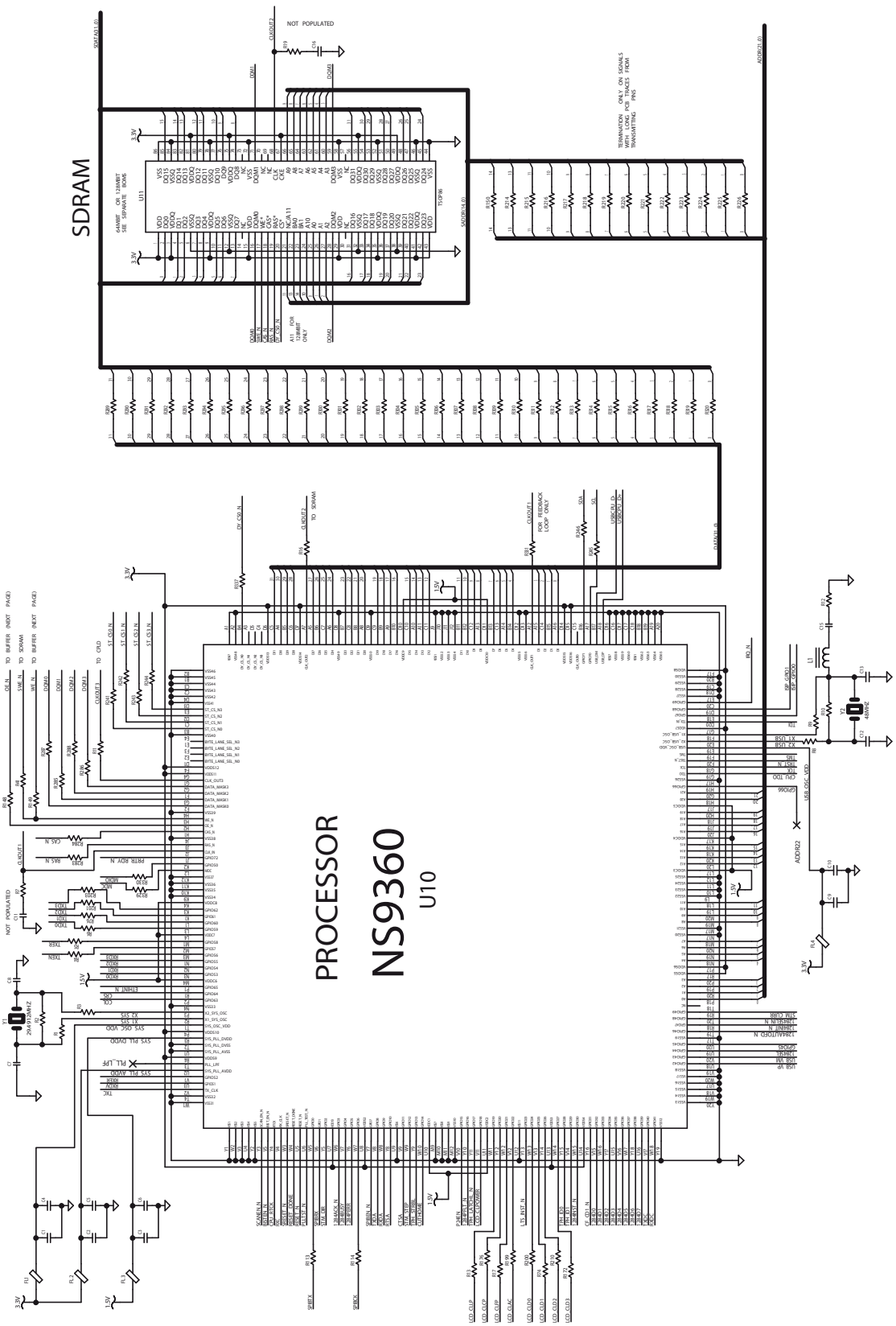
All testpoints are marked with silkscreen on the bottom side of the main board. Some of them can also be accessed from the top side, but are more difficult to find since they are not marked out.

Test Points on Main Board

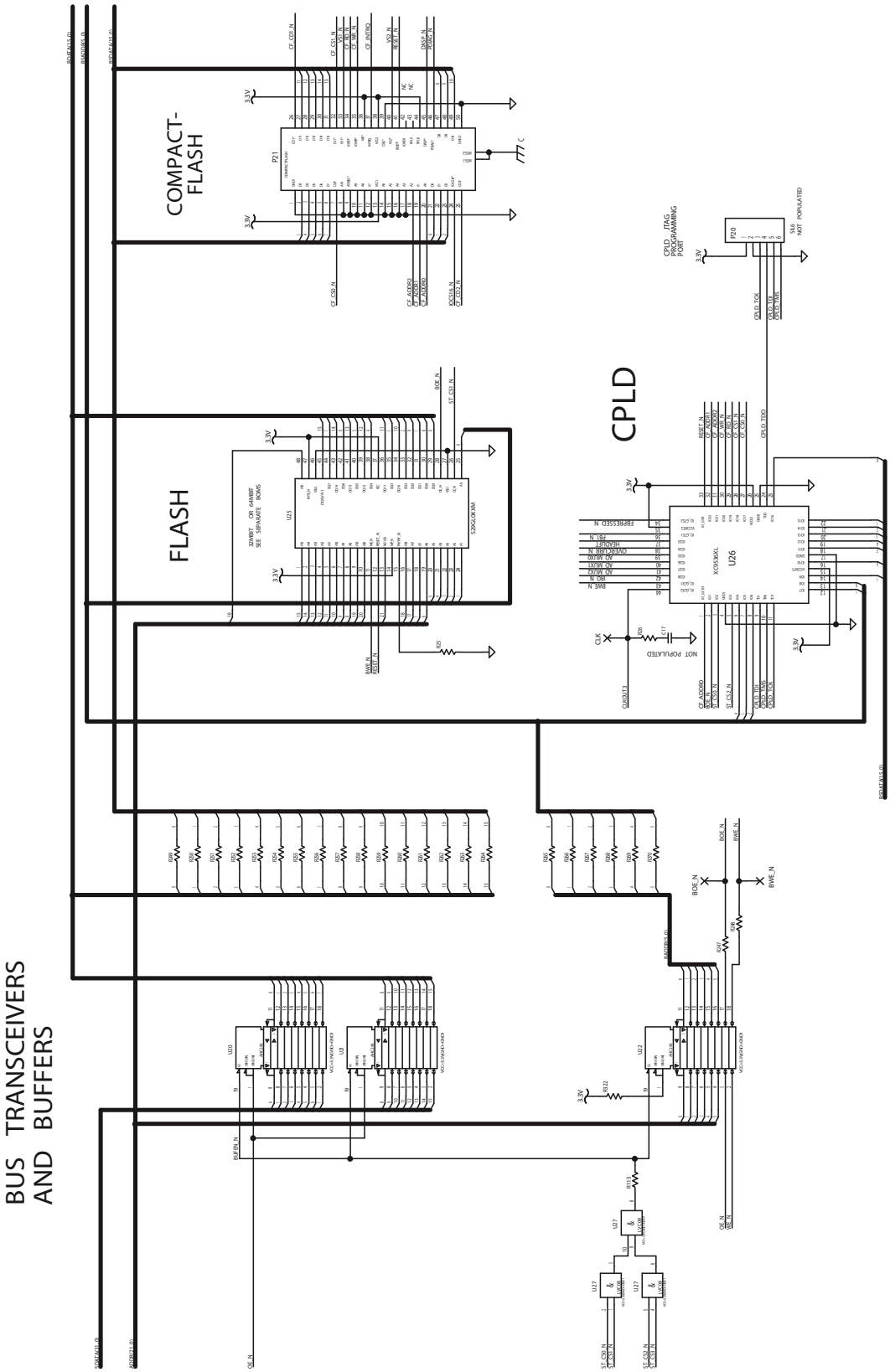
Signal	Note
24VS	+24V supply voltage (to stepper motor), max ±0.3V
5V	Logic supply voltage, max ±0.2V
3.3V_x	Logic supply voltage, max ±0.2V
1.5V	Logic supply voltage, max ±0.1V
GND_x	Logic ground
STRB	Printhead strobe, toggles high when activated
24V_PH	Printhead +24V supply, +24V when printing
STEP	Stepper motor clock
RIB	Ribbon sensor A/D, toggling when ribbon supply bobbin is rotating
LTS	Label taken sensor A/D, high level when label is sensed
HL	Headlift sensor A/D, high level when printhead lifted
GAP	Gap sensor A/D, high level in label gap
BM	Blackmark sensor A/D, low level in blackmark
RESET_N	System reset, high when printer is active
5VE	+5V supplied to external ports, max ±0.25V
OC_N	Overcurrent on 5VE, low when short circuit on 5VE
CUT1, CUT2	Cutter control, Outputs ({CUT1;CUT2}): {0;1} – Forward {1;0} – Reverse {1;1} – Brake {0;0} – Stop (high impedance)
CUTHOME	Cutter status, high level in home position



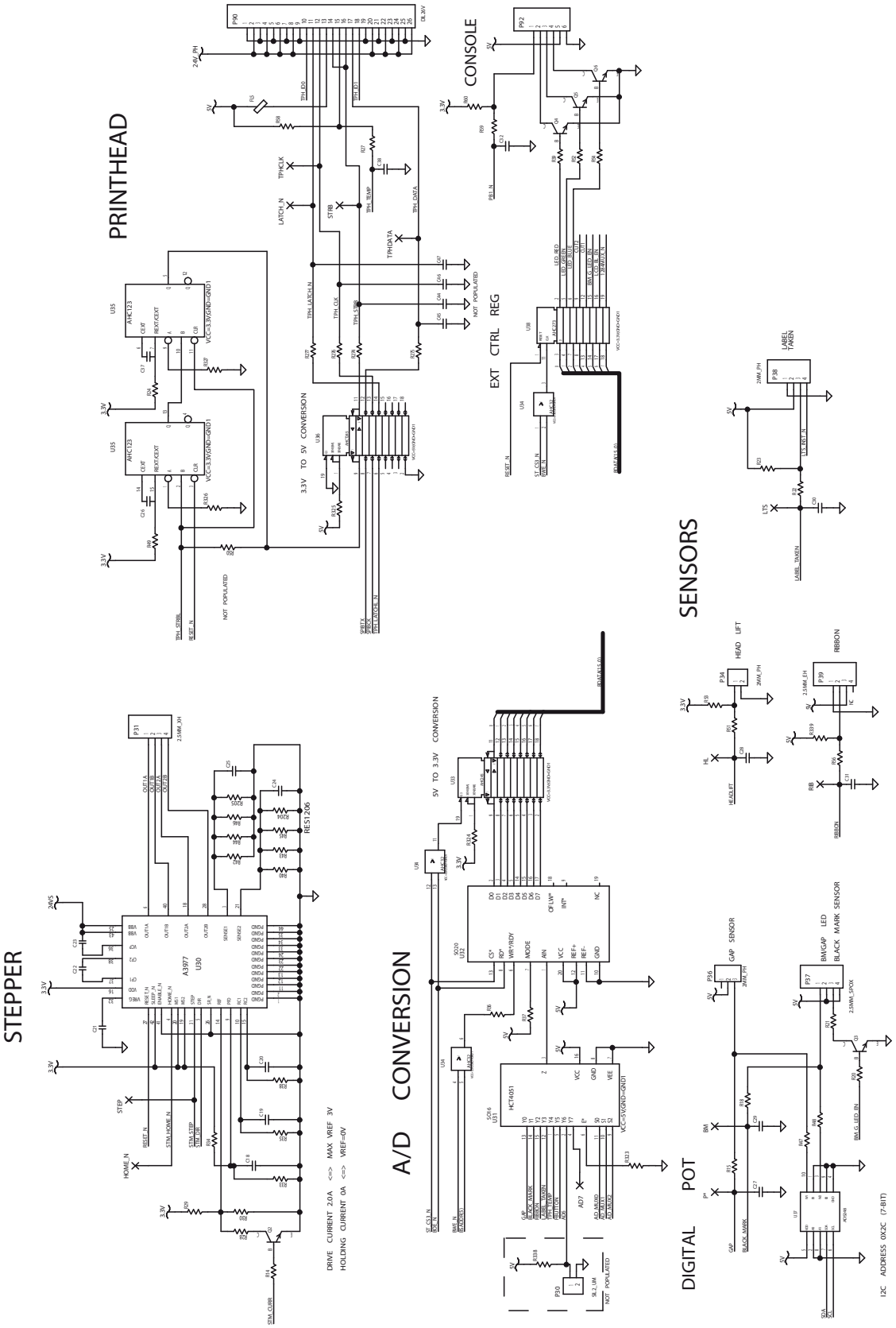
Test points on Main Board



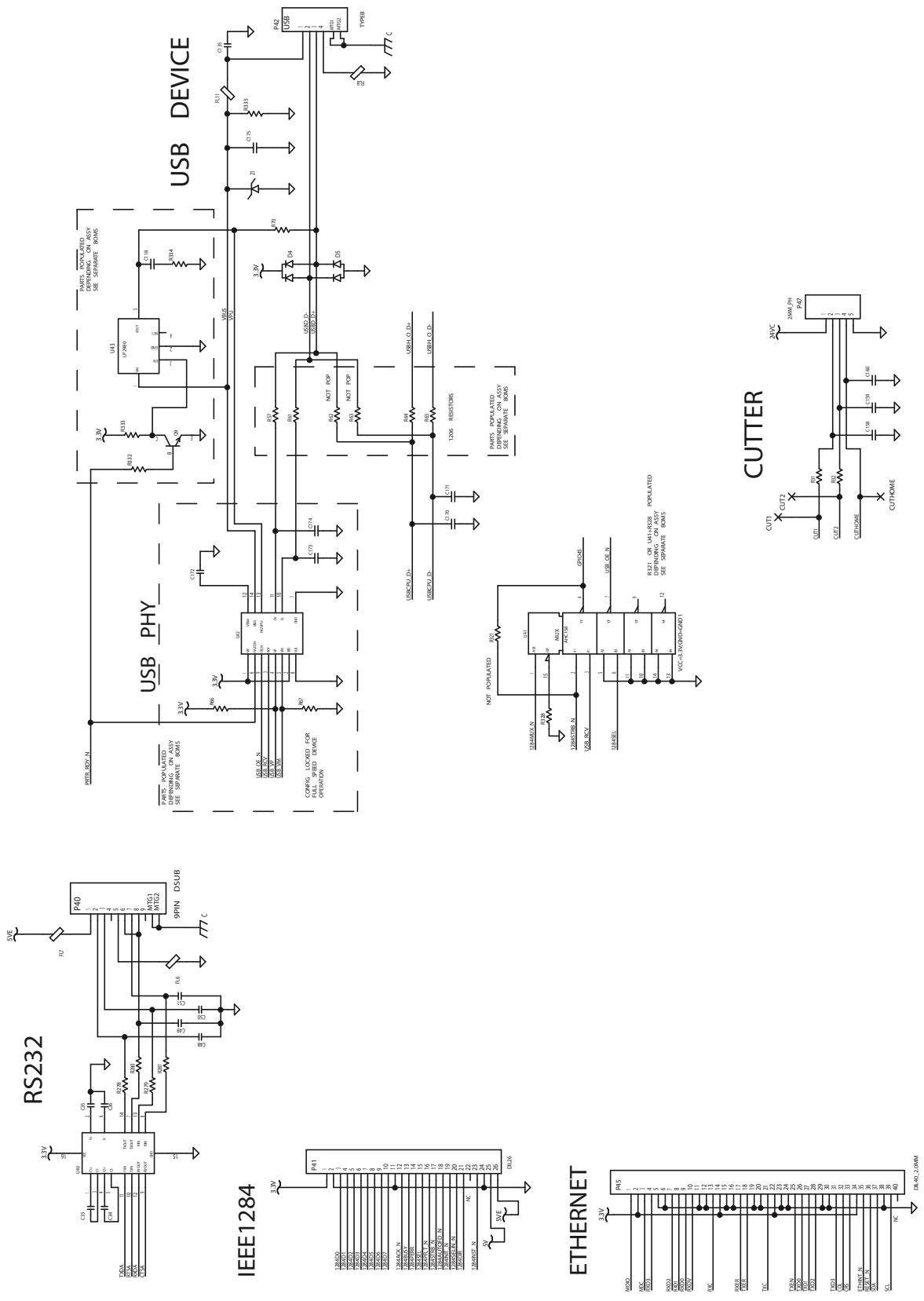
Processor and Memory



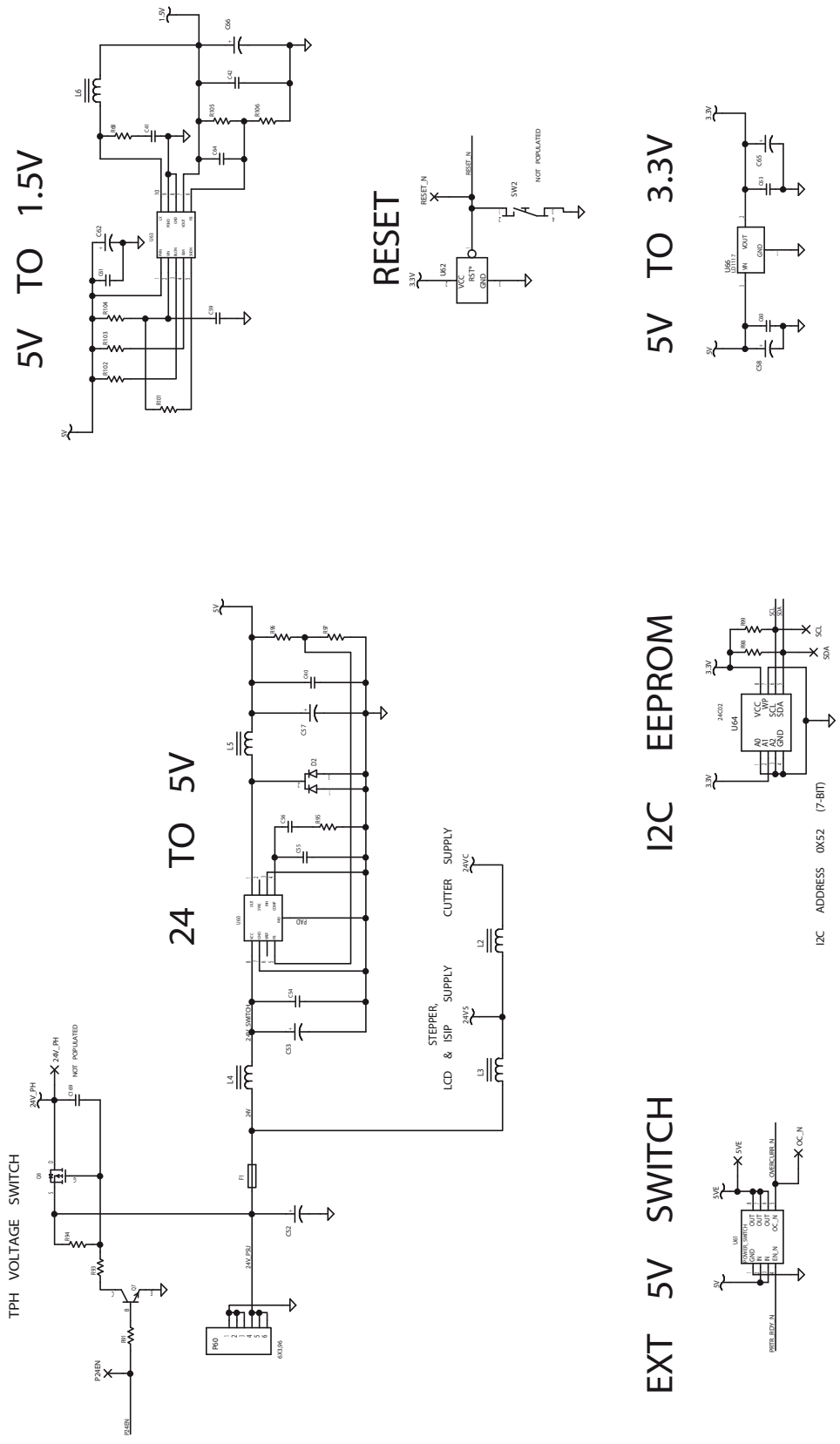
Flash and CPLD



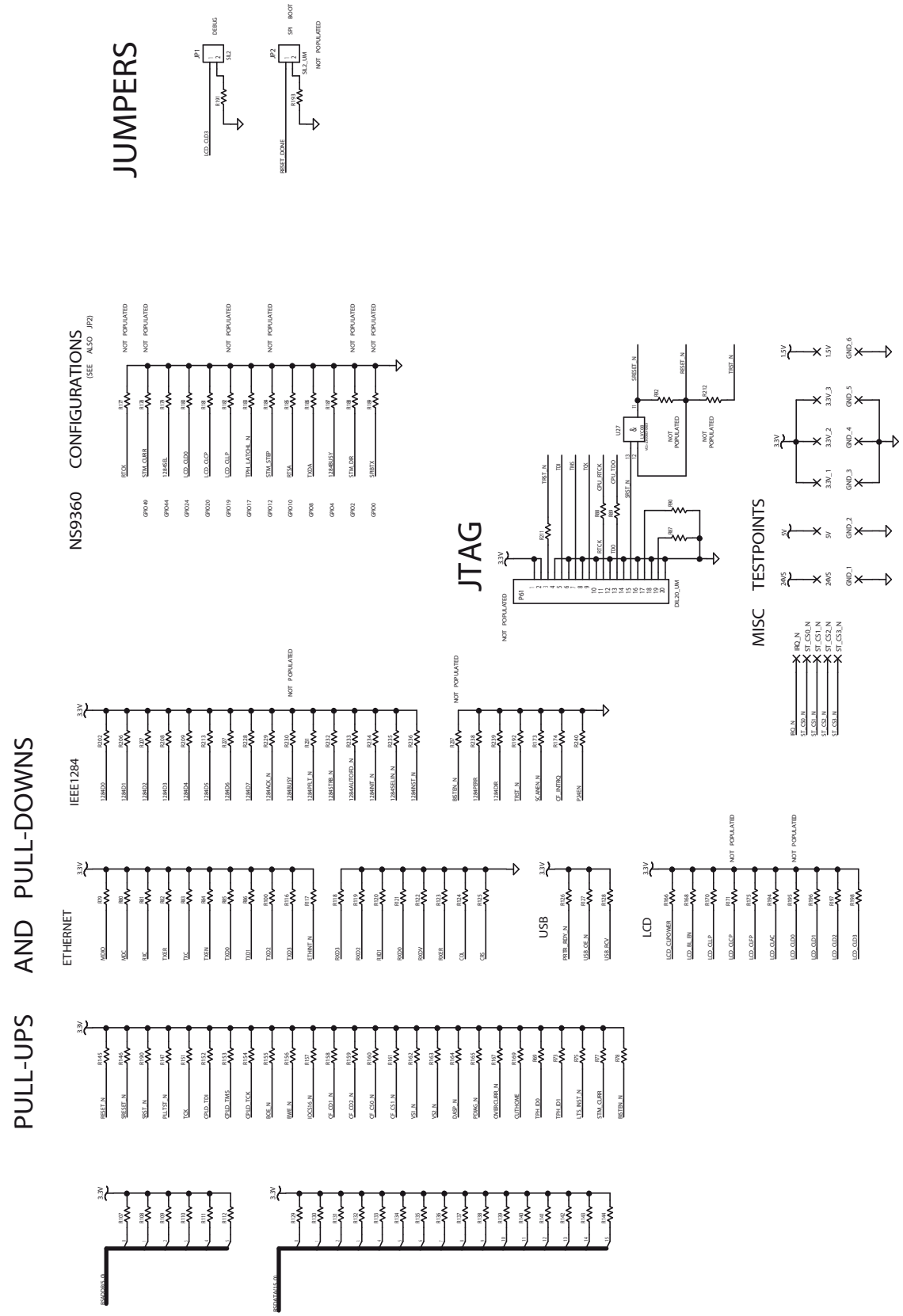
TPH and Sensors



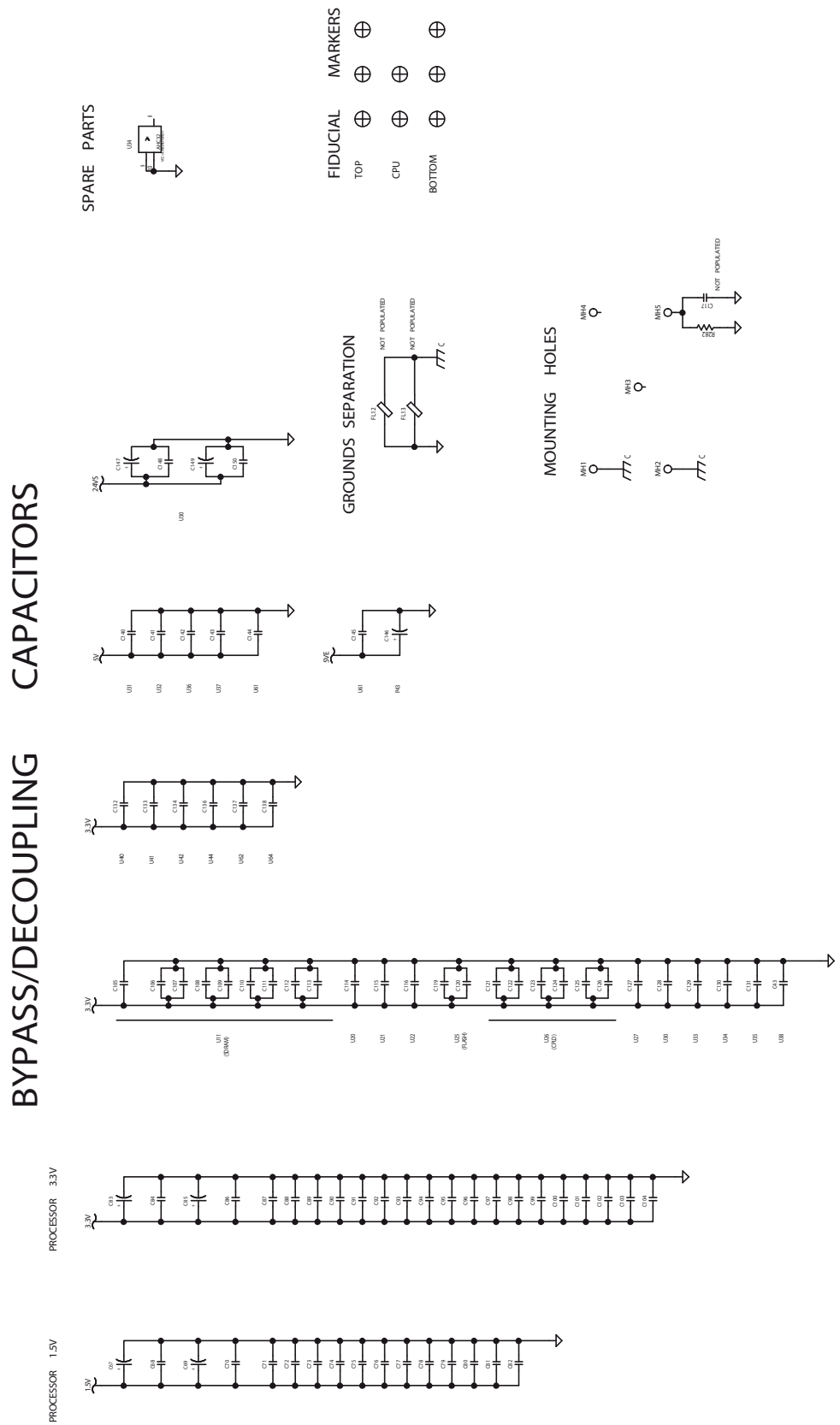
Communication Interfaces



Power



Pull-ups and Debug



Bypass/Decoupling

Upgrading Firmware

The Intermec website at **www.intermec.com** contains the latest firmware versions that you can download for free.

To download firmware updates

1. Go to **www.intermec.com**.
2. Click **Support** > **Downloads**.
3. In the **Select a Product** field, choose EasyCoder PD41 or PD42. The Downloads page appears with a list of available firmware.
4. Download the latest firmware version to your computer.
5. Extract the zip file to a folder on your computer. Normally, three versions of the firmware are included with the following differences and naming convention:
   - No suffix: Normal firmware upgrade.
   - FD suffix: Firmware upgrade resetting Factory Default. Only applicable when upgrading through a Compact Flash card.
   - NU suffix: Boots with new firmware, yet printer returns to previous firmware version on reboot (No Upgrade). Only applicable when upgrading through a Compact Flash card.

To install the downloaded firmware on your printer, use any one of the following methods:

- Use PrintSet 4 and follow the firmware upgrade procedure.
- If you have a network connection, browse to the printer's home page and select Maintenance. Upload the firmware file.
- Copy the firmware binary file to a CompactFlash card. Turn the printer off, insert the card into the printer's CompactFlash socket and switch on the printer. The printer will be upgraded automatically.

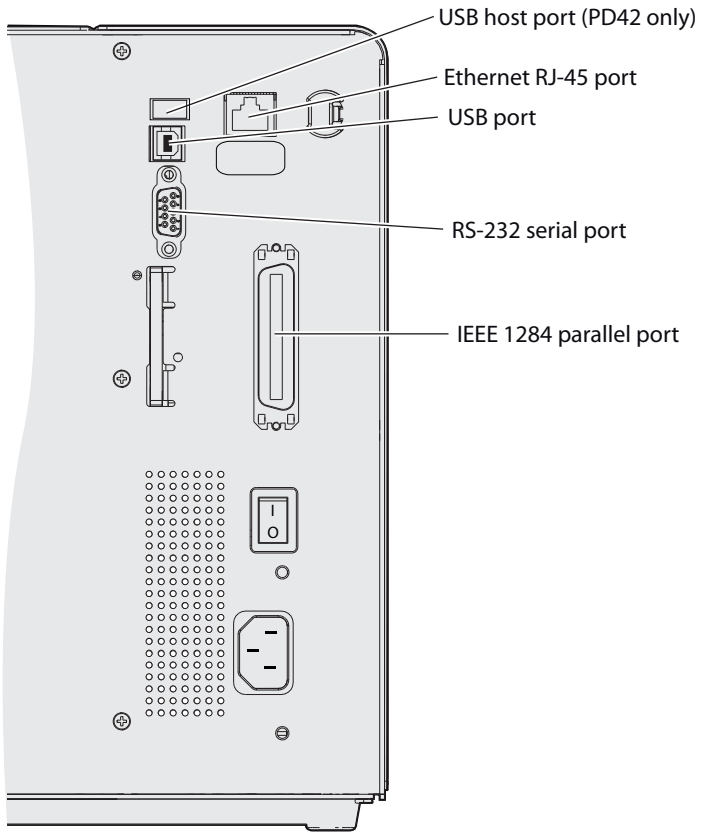
4 Interfaces

This chapter describes the communication interfaces of the EasyCoder PD41/PD42, and contains the following sections:

- Communication Interfaces
- RS-232 Serial Interface
- USB Serial Interface
- USB Host Interface (PD42 only)
- Parallel IEEE1284 Interface (Option)
- EasyLAN Ethernet Interface (Option)

Communication Interfaces

The image below shows the location of the interface connectors on the rear plate of the printer.



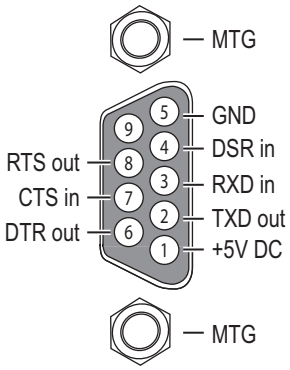
Interface Connectors

RS-232 Serial Interface

As a standard, the EasyCoder PD41/PD42 printer is equipped with an RS-232 communication port. The circuitry is fitted on the CPU board and has a fixed set of signals in a DB-9pin socket, which protrudes through a slot in the printer's rear plate.

Default Setup for Serial Communication

Baud rate	9600
Character Length	8 bits
Parity	None
Stop bits	1
Handshaking	XON/XOFF and RTS/CTS



RS-232 Pinout

Signals

Pin	Signal	Description	Comment
1	EXT5V	External +5 VDC	Max. 500mA, permanently enabled
2	TxD	Transmit data	
3	RxD	Receive data	
4			Not used
5	GND	Ground	
6	DTR	Transmit data	Connected to RTS
7	CTS	Clear to send	
8	RTS	Request to send	
9	NC		

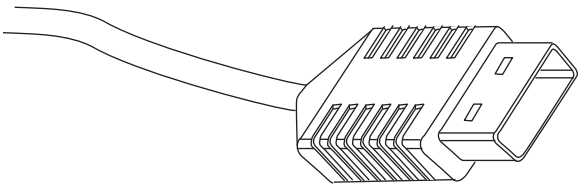
USB Serial Interface

The EasyCoder PD41/PD42 printer supports USB v1.1 (also called USB 2.0 full speed). To use the USB interface for printing from a PC, the Intermec InterDriver needs to be installed on the PC.

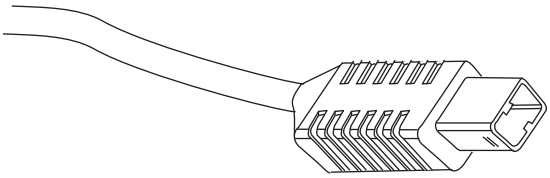
The printer is a so called “self-powered device.” You can connect the printer to a USB port on the host, either directly or via a hub. Keyboards, mouses, or more printers can also be connected to the same hub.

Using a USB Type A/B cable, connect the Type A plug to your PC or hub and the Type B plug to your printer.

There is no communication setup for the USB port.



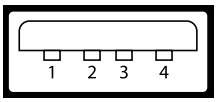
USB Type A connector. Connect to PC or Hub.



USB Type B connector. Connect to USB receptacle on the printer's rear plate.

USB Host Interface (PD42 only)

The PD42 printer is equipped with a USB host interface, which means you can connect various USB devices (bar code scanners and keyboards of HID type, memory sticks, and USB hubs) for use with the printer.



USB Host port with pins 1-4

USB Host Pinout

Pin	Function
1	VBUS
2	D-
3	D+
4	Gnd

Parallel IEEE1284 Interface (Option)

The Centronics parallel interface is essentially a one-way protocol for short distances. There is no setup for the parallel interface.

Handshake:	DSTB connects to the printer, BUSY connects to the host
Interface cable:	Parallel cable compatible to PC

One line contains +5 VDC, max 500 mA, permanently enabled.

Signals

Pin	Function	Transmitter	Comment
1	/Strobe	host	
2-9	Data 0-7	host	
10	/Acknowledge	printer	
11	Busy	printer	
12	/Paper empty	printer	
13	/Select	printer	
14-15	Not connected		
16	Logic ground		
17	Chassis ground		
18	External +5 VDC		Max 0.5A, permanently enabled.
19-30	Signal ground		
31	Not connected		
32	/ERROR	printer	
33	Signal ground		
34-36	Not connected		

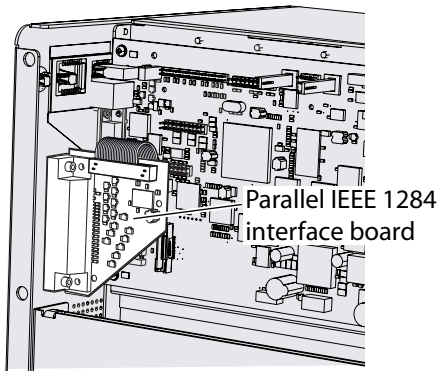
Installing the Parallel IEEE1284 Interface

The installation kit contains:

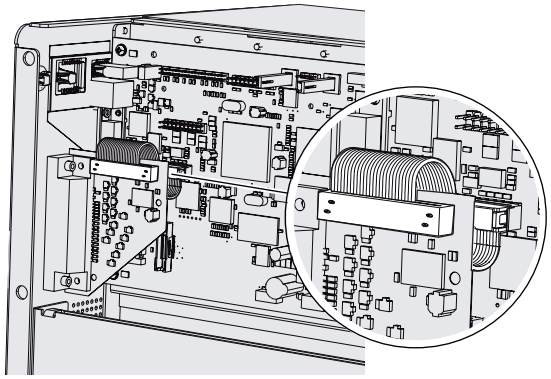
- Parallel IEEE1284 interface board with I/O bus cable.

To install the Parallel IEEE1284 option

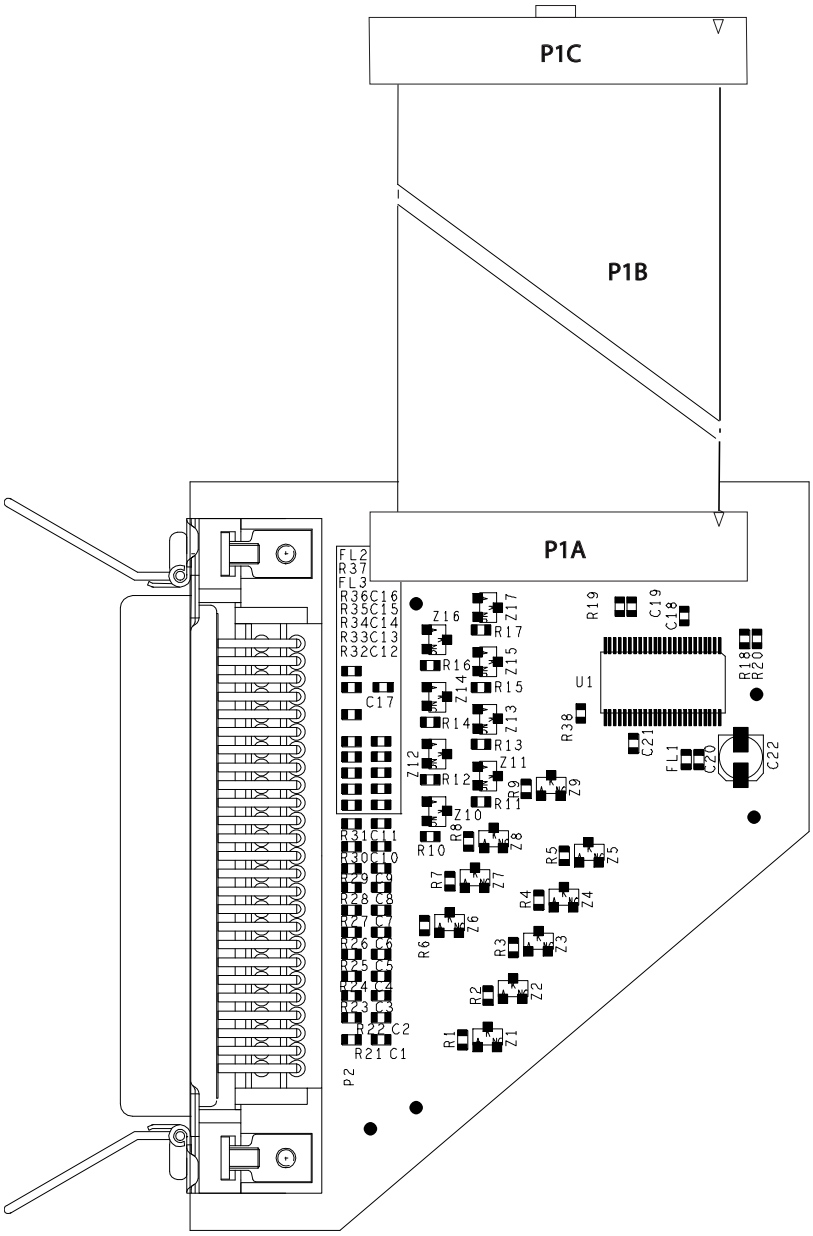
1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Put the printer back in upright position.
3. Remove the small plate that covers the slot for the Parallel board on the back of the printer. Keep the screws.
4. Use the screws that were removed in Step 3 to secure the Parallel board in the slot.



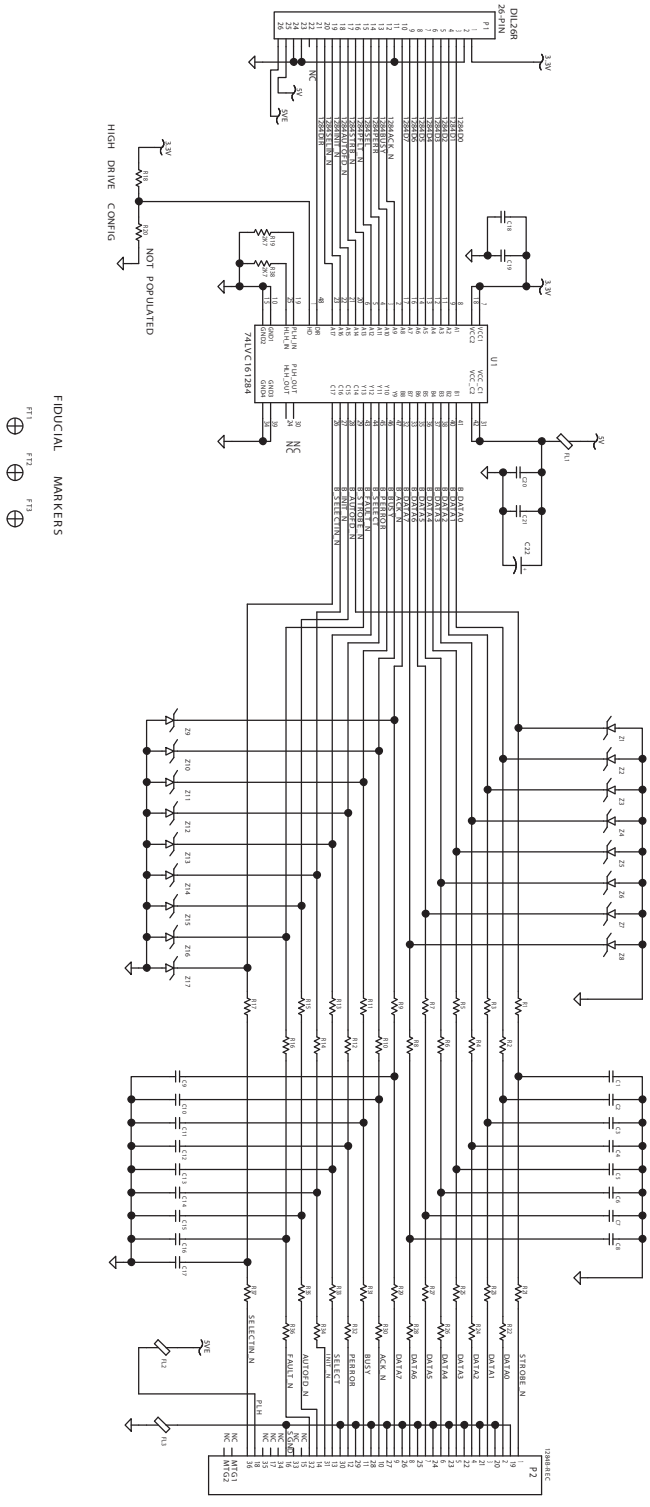
5 Connect the I/O bus cable to the printer main board.



Components



Schematics



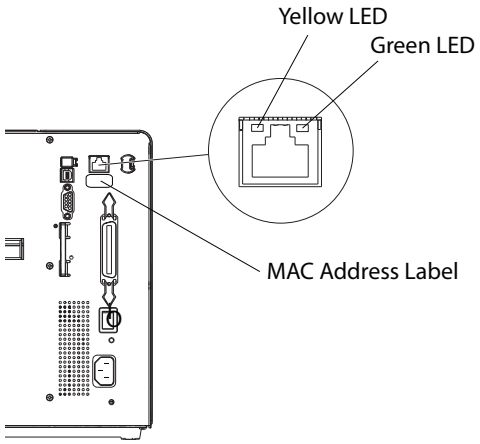
EasyLAN Ethernet Interface

The EasyLAN interface board provides the printer with a 10/100 Mbit Ethernet connection. The port is equipped with two LED indicators that inform the user of the state of the connection:

EasyLAN LED Indicators

LED Indicator	On	Off	Flashing
Green	Link	No Link	Data Activity
Yellow	100Mbit/s	10Mbit/s	N/A

This chapter only describes the physical installation of the EasyLAN interface board; for detailed configuration and setup instructions, please refer to the *EasyLAN Software for PD41/PD42 Instructions* (P/N 943-130-xxx) and the *EasyLAN User's Guide* (P/N 1-960590-03).



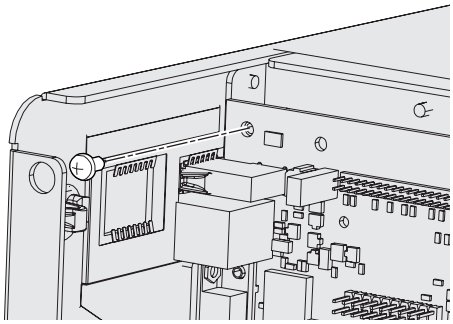
Installing the EasyLAN Ethernet Interface

The installation kit contains:

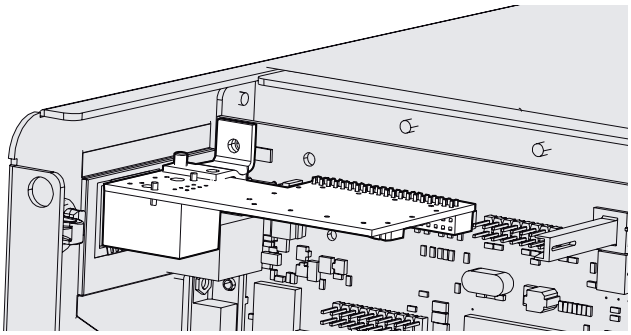
- EasyLAN Ethernet interface board
- MAC address label

To install the EasyLan Ethernet Interface

1. Disconnect the power cord and remove the left-hand panel (For help, see "To remove the left-hand panel" on page 27).
2. Put the printer back in upright position.
3. Locate the screw in the upper left corner of the electronics compartment that holds the main board in place. Remove the screw.



4 Connect the EasyLAN board to the connector marked “Ethernet Option” on the main board.



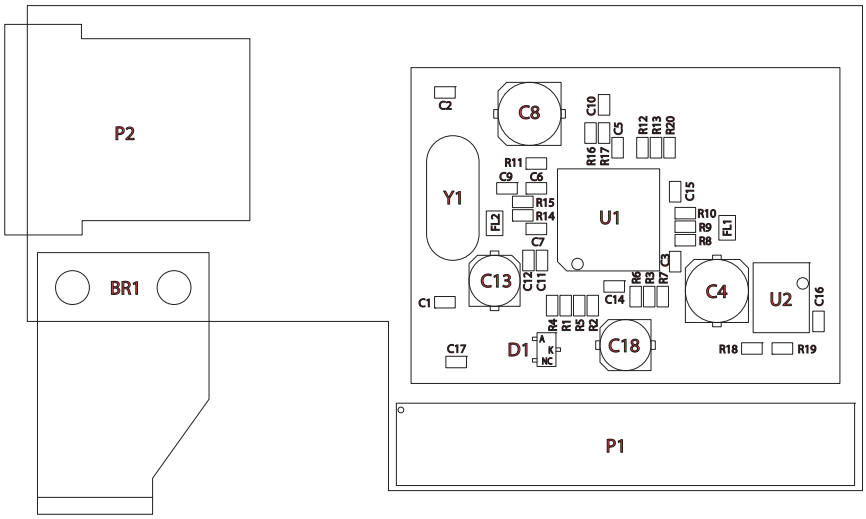
5 Reattach the screw.

6 Reattach the left-hand panel.

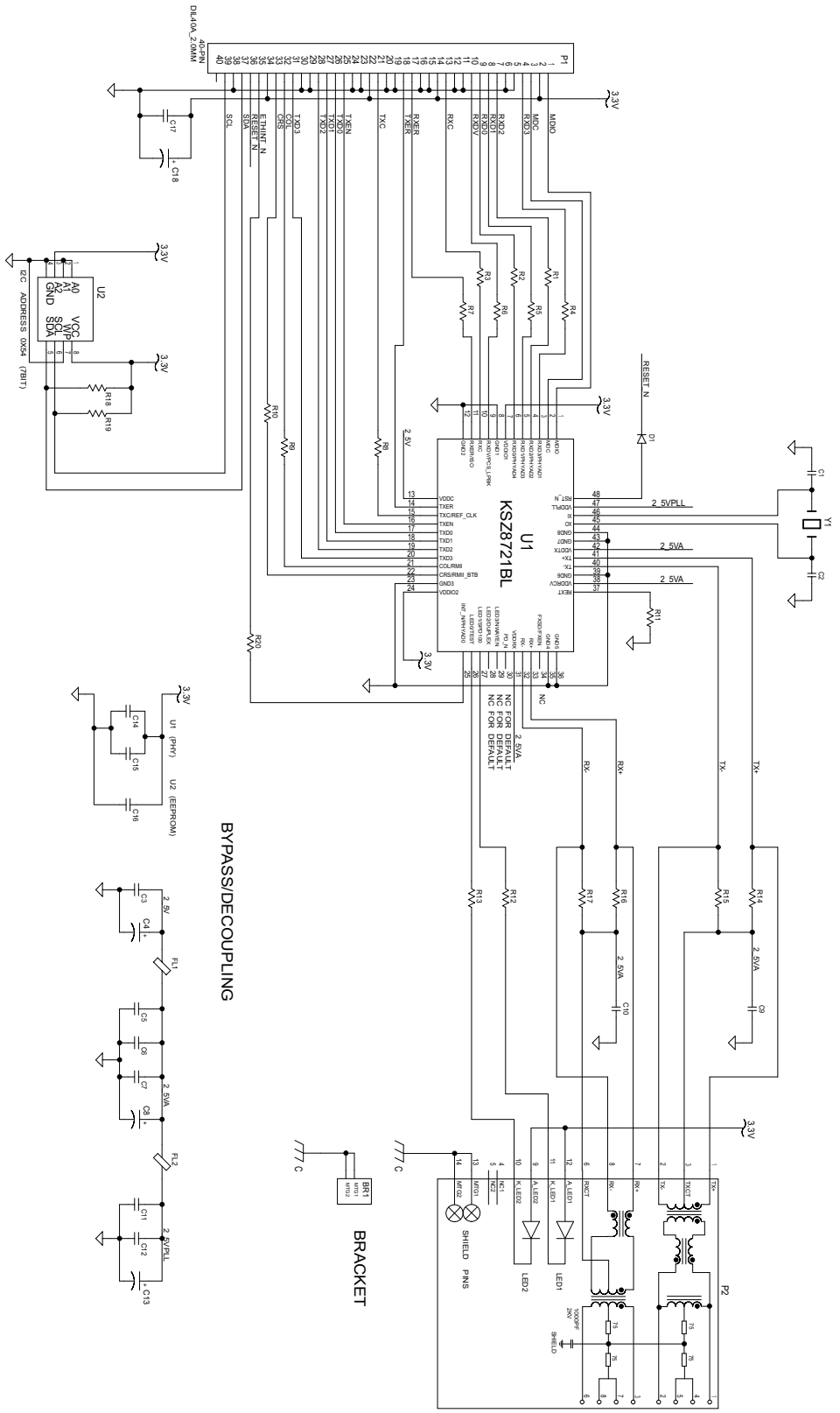
7 Attach the MAC address label just below the EasyLAN port on the rear plate of the printer.

When you turn on the printer, it automatically recognizes the EasyLAN board.

Components



Schematics



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EasyCoder PD41/PD42 Printer Service Manual

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