Honeywell

PX240 and PD45 Series

Printer Accessory Guide

User Guide

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For patent information, refer to www.hsmpats.com.

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Customer Support

Technical Assistance

To search our knowledge base for a solution or to log in to the Technical Support portal and report a problem, go to www.sps.honeywell.com and select **Support**.

Product Service and Repair

Honeywell International Inc. provides service for all of its products through service centers throughout the world. To obtain warranty or non-warranty service, return your product to Honeywell (postage paid) with a copy of the dated purchase record. To learn more, go to www.sps.honeywell.com and select **Services.**

Limited Warranty

For warranty information, go to www.sps.honeywell.com and click **Support** > **Warranties.**

Safety Warnings

Warning: **Do not put your fingers inside the print mechanism when the power is on.**

Warning: **This printer contains a coin battery and is NOT user replaceable. Keep children away from the printer when the printer is in service.**

Never put batteries in your mouth as swallowing may lead to serious injury or death. If swallowed, seek medical attention immediately from a physician or local poison control center.

Caution Statements

Caution: **Observe all safety and accident prevention regulations applicable to your specific region and application.**

Caution: **You must implement both hardware and software safety precautions to prevent the possibility of undefined system states.**

Caution: **To reduce the risk of electric shock or fire, keep the cover closed and turn off the printer when not in use. There are no user-serviceable parts inside the power supply unit.**

1 INTRODUCTION

Honeywell offers a full range of optional interface boards and accessories for the PX240 and PD45 printers.

⚠ **Caution: Before you begin, turn off the printer and disconnect the power cord and communication cables.**

Interface Boards

The following interface boards are available for the printers:

- Industrial Interface Board
- Applicator Interface Board
- Parallel Port (IEEE1284 Board)

Accessories

The following accessories are available for the printers:

- Cutter Module
- Peeler and Rewinder
- Wi-Fi Module

Set Up Printer for Installing Accessories and Boards

You need to remove both the media cover and the electronics cover to install the accessories and boards.

You will require the below tools to remove the media and electronics cover.

- #T20 Torx Screwdriver

Remove Media Cover

Note: *This procedure applies to both the PX240 and PD45 printers. For simplicity, the PX240 printer is depicted in the illustrations.*

To remove the media cover,

1. Open the media cover,

2. Use the screwdriver and rotate counterclockwise to remove the two Torx screws that secure the media cover in place.
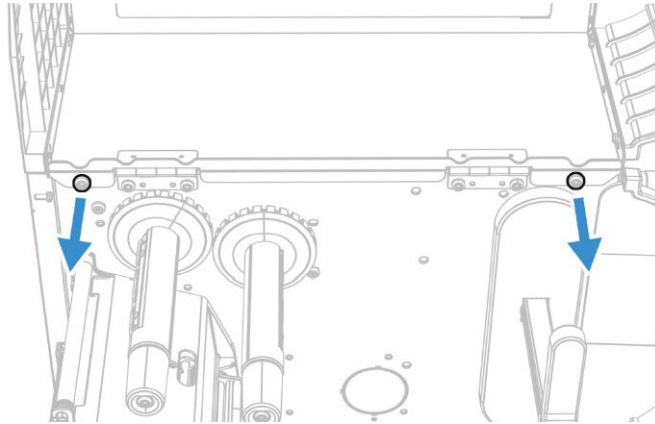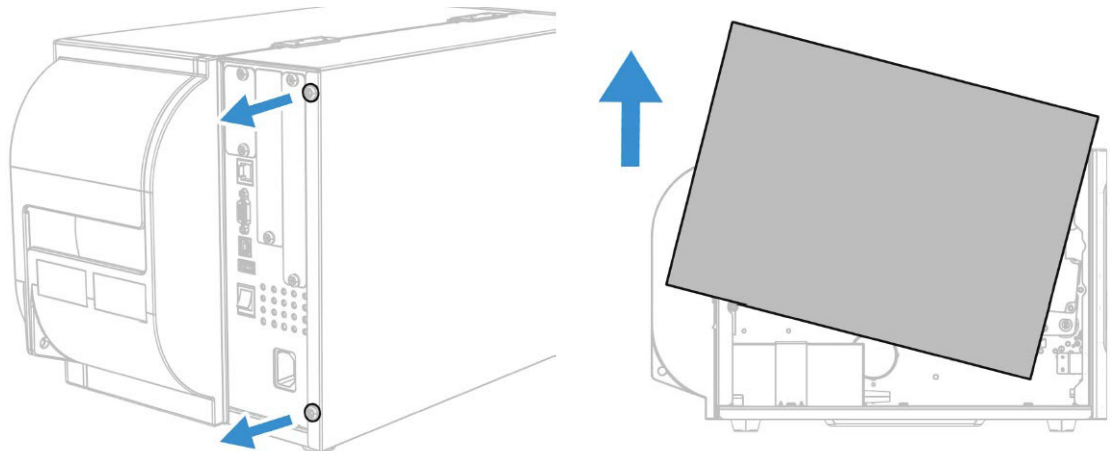

3. Lower the media cover and lift it off the hinges.
4. Put the media cover aside on a soft cloth to avoid scratches.

Remove Electronics Cover

To remove the electronics cover,

1. Remove the media cover.
2. Use the screw driver to remove the two screws located on the back of the electronics cover.
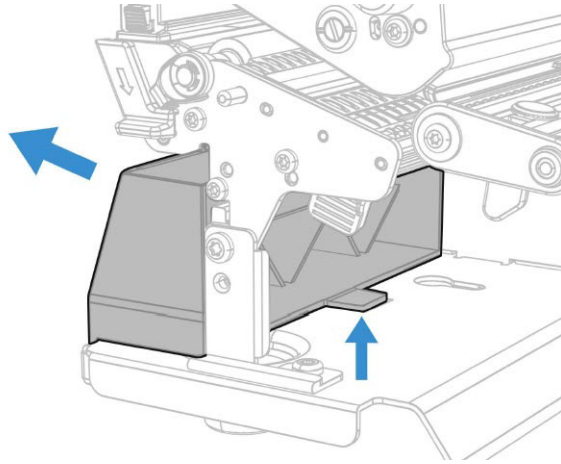

3. Remove the electronics cover.

Remove Front Access Door

To remove the access door:

1. Open the access door and lift it out and away from the printer.

For more information about available accessories, see the you printer product page at www.sps.honeywell.com. Contact your local sales representative for ordering information.

PX240/PD45 Accessory User Guide

INSTALLING INTERFACE BOARDS

This chapter describes how to install and configure interface boards on the printer.

⚠️ **Warning: The installation described in this section must only be performed by an authorized service technician.
Honeywell assumes no responsibility for personal injury or damage to the equipment if the installation is performed by an unauthorized person.**

⚠️ **Caution: Follow standard ESD guidelines to avoid damaging the equipment.**

Industrial Interface Board

Printer Firmware

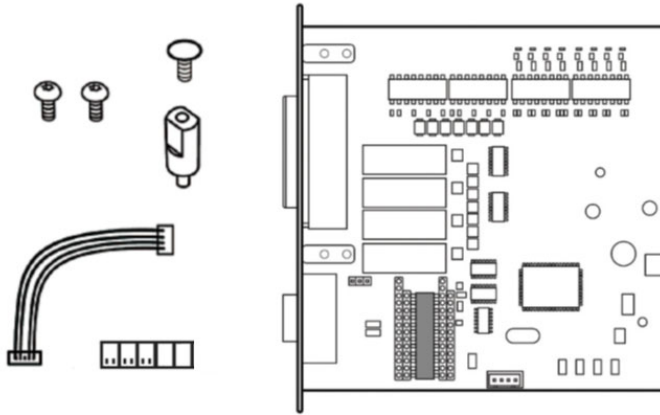The printer must be fitted with Honeywell Fingerprint v8.60 (or later).

Note: *This kit does not work with IPL.*

In Honeywell Fingerprint, the serial ports are addressed as uart2 (communication channel#2)

Out of the Box

The Industrial Interface Kit includes:

• One Industrial Interface Board

• One USB cable

• One spacer screw

• One 3x8mm Torx screw

• Two 4x8mm Torx
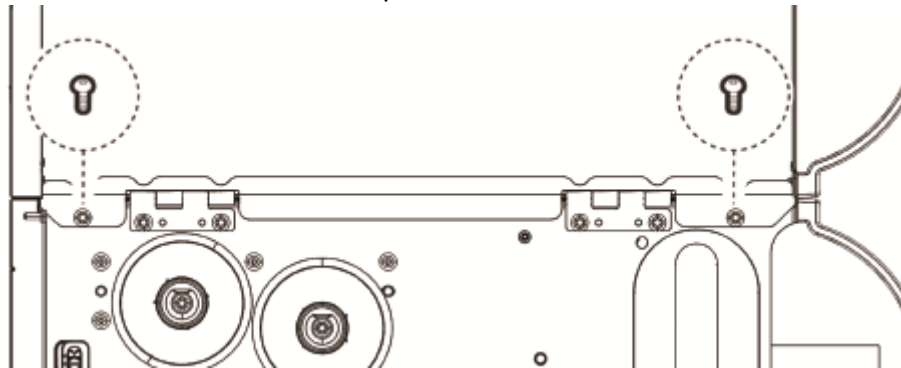
• Five straps

The only tools need for installation are #T10 and #T20 Torx screwdrivers.

Installation

⚠️ **Caution:** **Before you begin, turn off the printer and disconnect the power cord and communication cables.**

1. Open the media cover.

2. Use a T20 Torx screwdriver to remove the screws that secure the electronics cover to the inside of the printer base.

3. Close the media cover.

4. Remove the two screws located on the outside of the electronics cover.
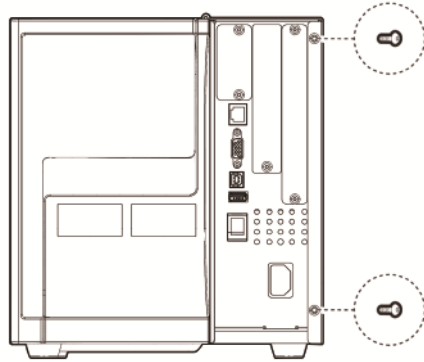
5. Remove the electronics cover.

6. On the back of the printer, remove the two screws that secure the cover plate to the printer and remove the cover plate.
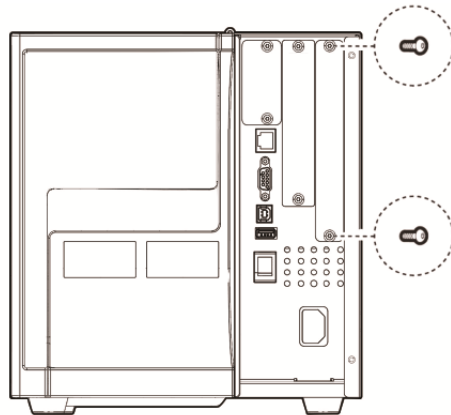
7. Connect two spacer screws together. Use a T10 Torx screwdriver to remove the screw located on the top of the printer main board. Attach the two spacer screws.

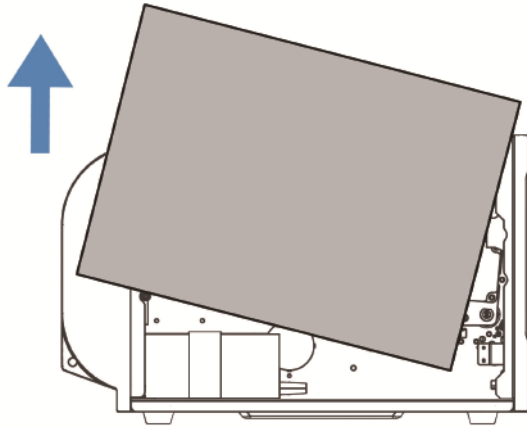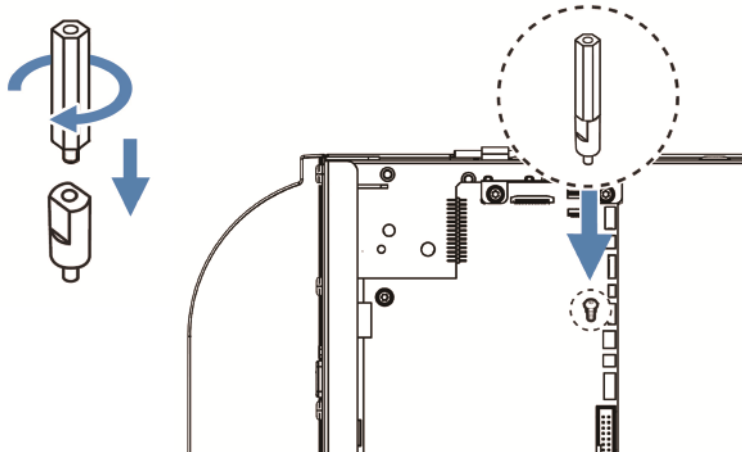8. Insert the Industrial Interface and UART Board into the printer and secure the board assembly to the printer with two Torx screws.
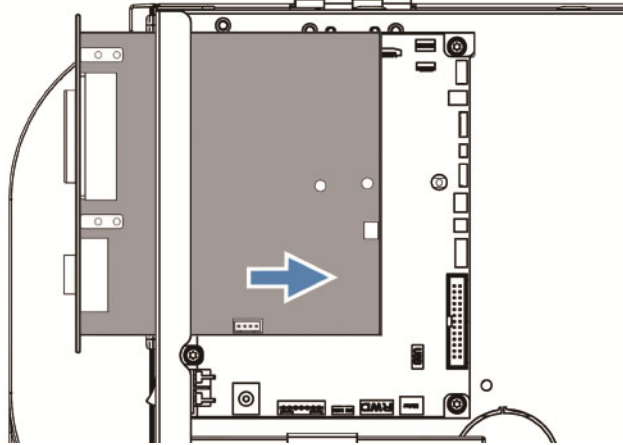
9. Secure the optional board assembly to the spacer screw with a Torx screw.

10. Insert the USB cable into the J54 connector on the printer main board and insert the other end into the J13 connector on the Industrial Interface and UART Board.

11. Install the jumpers on the board to configure it for the type of serial communication you want to use.

Com C Jumper Setting Functions							
Selected Function	Chip Installation	Jumper Setting					
	Socket	P3:Pin1-2	P2:Pin2-3	P2	P4	P5
RS232 Communications (default)	SKT3	1	0	0	0	0
RS485 Communications	SKT1&4	1	0	0	1	1
RS422 Communications	SKT2&5	1	0	1	0	1

*If end of the cable

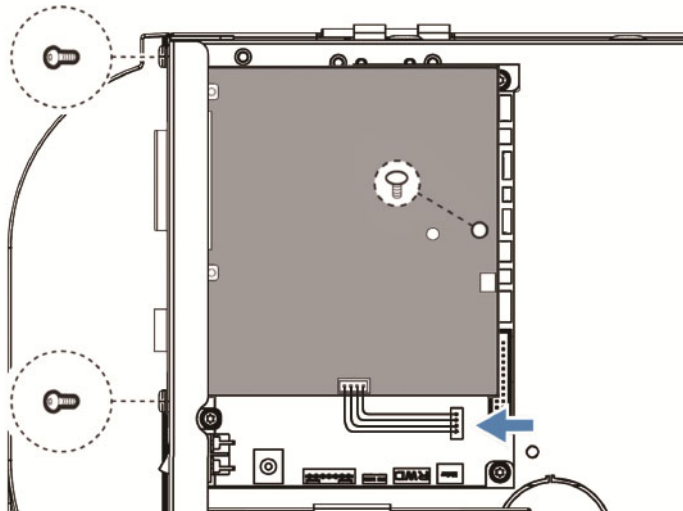12. Put the electronics cover back on and secure it with the 4 screws removed in steps 4 and 6.

Serial Interface

This section describes how to modify the interface board for RS-232 (standard), RS-422 isolated/full duplex, or RS-485 isolated/half duplex on the "uart2:" port and explains the configuration of the interface connector.

One of the circuits shown below will be needed for the serial communication you want to use.

Serial Communication	Honeywell Part Number	Integrated Circuit	Remark
RS-232 Non-isolated	360-018-001	Maxim 238	Already mounted on the board
RS-422 isolated full duplex	360-027-001	Maxim 1490 full duplex RS485/422 Intfc, 250Kbps RoHS	Not included in the kit, needs to be purchased
RS-485 isolated half duplex	360-026-001	Maxim 1480 half duplex RS485/422 Intfc, 250KBPS RoHS	Not included in the kit, needs to be purchased

! **Caution:** **When fitting driver circuit and straps before installing the interface board, make sure the circuit is not fitted upside down. Protect the board and circuits from electrostatic charges.**

RS232 Non-isolated (standard)
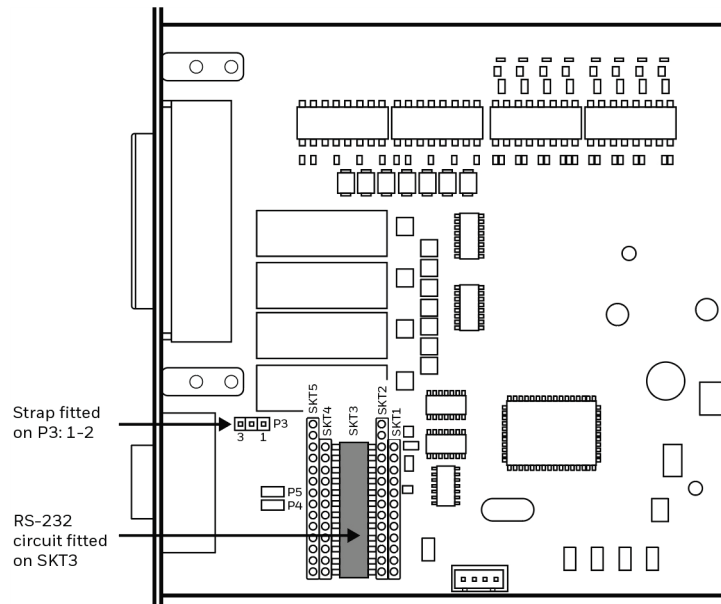
Connector Configuration (RS-232 on "uart2")

Pin of DB9	Signal Name	Description
1	+5VDC	External +5VDC max 600 mA (automatic switch off at overload, short-circuit protected)
2	TXD	Transmit data
3	RXD	Receive data
4	DSR	Data set ready
5	GND	Ground
6	DTR	Data terminal ready
7	CTS	Clear to send
8	RTS	Request to send
9	–	

RS-232 socket
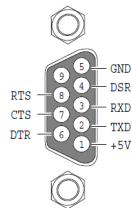
RS-422 Isolated, Full Duplex (reconfiguration required)

Note: *The RS-422 circuit is available as a spare part.*

Strap fitted on P3: 1-2, if external +5VDC is required

Straps fitted on P4 & P5

RS-422 circuit fitted on SKT1&SKT4
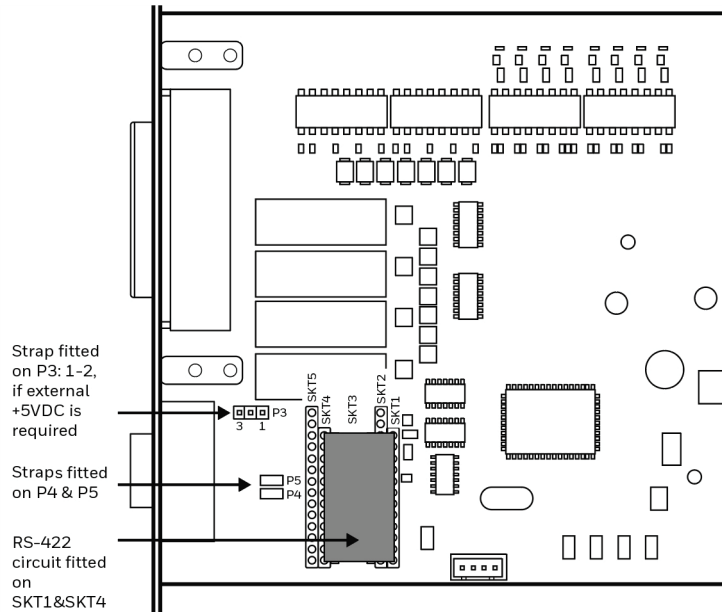
Connector Configuration (RS-422 on "uart2")

Pin of DB9	Signal Name	Description
1	+5VDC	External +5VDC max 600 mA (automatic switch off at overload, short-circuit protected) provided strap is fitted on P3: 2-3 which spoils the galvanic isolation
2	+TXD	+Transmit data
3	+RXD	+Receive data
4	–	
5	GNDE	Ground
6	–	
7	–RXD	–Receive data
8	–TXD	–Transmit data
9	–	

RS-422 socket

RS-784 Isolated, Half Duplex (reconfiguration required)

Note: *The RS-485 circuit is available as a spare part.*

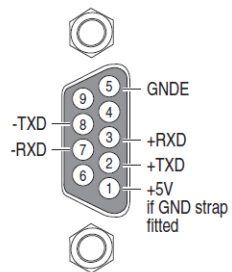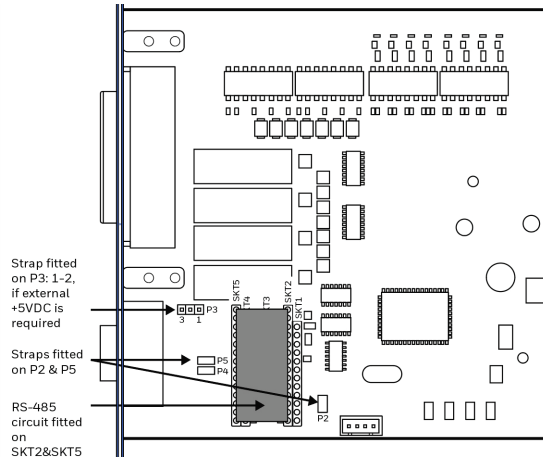**Connector Configuration (RS-485 on "uart2")**

Pin of DB9	Signal Name	Description
1	+5VDC	External +5VDC max 600 mA (automatic switch off at overload, short-circuit protected) provided strap is fitted on P3: 2-3 which spoils the galvanic isolation
2	+DATA	
3	-	
4	-	
5	GNDE	Ground
6	-	
7	-	
8	-DATA	
9	-	

RS-485 socket

Note: *The increased use of LAN networks has made the RS-485 interface somewhat obsolete, because RS-485 requires a special communication protocol and a dedicated wiring system limited to 1,200 m (4,000 ft). We only recommend RS-485 for existing applications and advice the customer to consider a LAN network solution for new applications.*

Industrial Interface

The Industrial Interface, provides 8 digital IN ports with optocouplers, 8 digital OUT ports with optocouplers, and 4 OUT ports with relays.

The industrial interface has no straps or circuits to be fitted or removed. All signals are available on a DB-44pin socket and the various ports are controlled by the Honeywell Fingerprint instructions PORTIN and PORTOUT ON/OFF.

For more information, see the Honeywell Fingerprint Command Reference Manual at www.honeywellaidc.com.
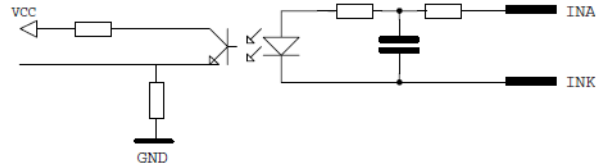
Digital Opto In

The status of the digital IN ports can be read using the PORTIN functions. If a current is led through the optocoupler of the port, PORTIN returns the value -1 (true) or value 0 (false).

Signal	Description	Min	Typical	Max
Vin (High)	Input voltage high	10V	24V	40V
Vin (Low)	Input voltage low	-1V	0V	1V

Connector Configuration

Pin of DSUB 44	Signal Name	Description	Fingerprint Ref. No.
10	IN1A	Anode Opto In Channel 1+	101
40	IN1K	Cathode Opto In Channel 1-	
26	IN2A	Anode Opto In Channel 2+	102
11	IN2K	Cathode Opto In Channel 2-	
41	IN3A	Anode Opto In Channel 3+	103
27	IN3K	Cathode Opto In Channel 3-	
12	IN4A	Anode Opto In Channel 4+	104
42	IN4K	Cathode Opto In Channel 4-	
28	IN5A	Anode Opto In Channel 5+	105
13	IN5K	Cathode Opto In Channel 5-	
43	IN6A	Anode Opto In Channel 6+	106
29	IN6K	Cathode Opto In Channel 6-	
14	IN7A	Anode Opto In Channel 7+	107
44	IN7K	Cathode Opto In Channel 7-	
30	IN8A	Anode Opto In Channel 8+	108
15	IN8K	Cathode Opto In Channel 8-	

**Simplified schematics of a digital IN port:**

Digital Opto Out

The current to each optocoupler of the digital OUT ports can be turned on and off using PORTOUT ON/OFF statements. The status of the ports can be read using PORTIN functions. If a current is led through the optocoupler of the port, PORTIN returns the value –1 (true), else it returns the value 0 (false).

Signal	Description	Max
Vceo	Collector - emitter Breakdown Voltage	35V
Veco	Emitter - collector breakdown voltage	6V
Ic	Collector current (non-saturation)	30mA

Connector Configuration:

Pin of DSUB 44	Signal Name	Description	Fingerprint Ref. No.
20	OUT_1C	Collector Opto Out Channel 1	221
5	OUT_1E	Emitter Opto Out Channel 1	
35	OUT_2C	Collector Opto Out Channel 2	222
21	OUT_2E	Emitter Opto Out Channel 2	
6	OUT_3C	Collector Opto Out Channel 3	223
36	OUT_3E	Emitter Opto Out Channel 3	
22	OUT_4C	Collector Opto Out Channel 4	224
7	OUT_4E	Emitter Opto Out Channel 4	
37	OUT_5C	Collector Opto Out Channel 5	225
23	OUT_5E	Emitter Opto Out Channel 5	
8	OUT_6C	Collector Opto Out Channel 6	226
38	OUT_6E	Emitter Opto Out Channel 6	
24	OUT_7C	Collector Opto Out Channel 7	227
9	OUT_7E	Emitter Opto Out Channel 7	
39	OUT_8C	Collector Opto Out Channel 8	228
25	OUT_8E	Emitter Opto Out Channel 8	

Simplified schematics of a digital OUT port:
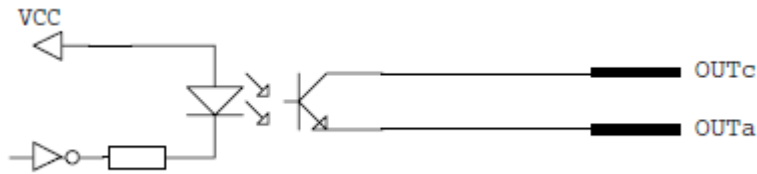
Relays

The relays of the OUT ports can be individually activated using PORTOUT ON/OFF statements. The status of the ports can be read by means of PORTIN functions. If a relay is activated, PORTIN returns the value –1 (true), else it returns the value 0 (false).

Signal	Description	Max
I	Current	1A
Psw AC	Switching power	100VA AC
Usw AC	Switching voltage	100V AC

Connector Configuration:

Pin of DSUB 44	Signal Name	Description	Fingerprint Ref. No.
16	REL1NC	Relay 1 Normally Closed	201
1	REL1NO	Relay 1 Normally Open	
31	REL1COM	Relay 1 Common	
17	REL2NC	Relay 2 Normally Closed	202
2	REL2NO	Relay 2 Normally Open	
32	REL2COM	Relay 2 Common	
18	REL3NC	Relay 3 Normally Closed	203
3	REL13NO	Relay 3 Normally Open	
33	REL3COM	Relay 3 Common	
19	REL4NC	Relay 4 Normally Closed	204
4	REL4NO	Relay 4 Normally Open	
34	REL4COM	Relay 4 Common	

Simplified schematics of a relay OUT port:
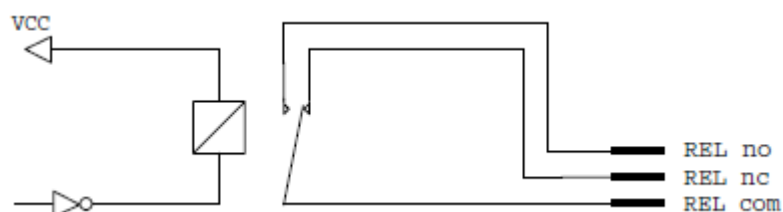
Applicator Interface Board

Out of the Box

The Applicator Interface Kit includes:

- One Applicator Interface Board
- One USB cable
- One spacer screw
- One 3x8mm Torx screw
- Two 4x8mm Torx

Installation

⚠ **Caution: Turn off the printer and disconnect the power cord before installing accessories on your printer.**
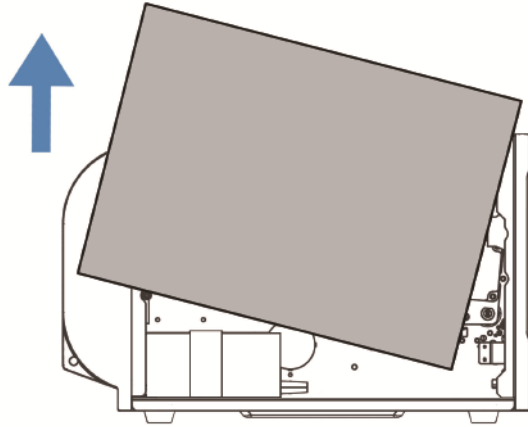
1. Open the media cover.
2. Use a T20 Torx screwdriver to remove the screws that secure the electronics cover to the inside of the printer base.
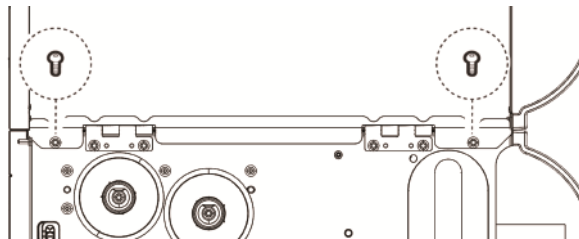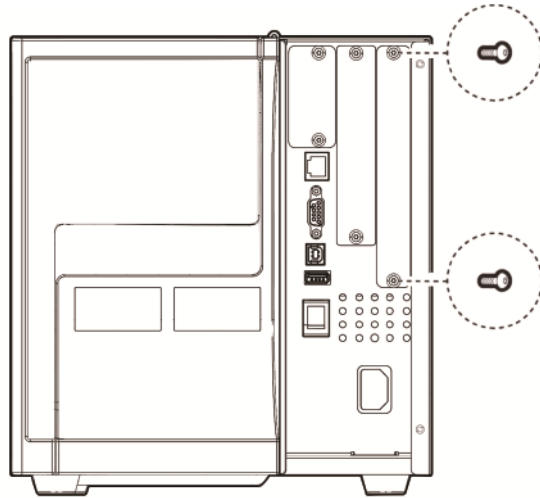

3. Close the media cover.
4. Remove the two screws located on the outside of the electronics cover on the back of the printer.
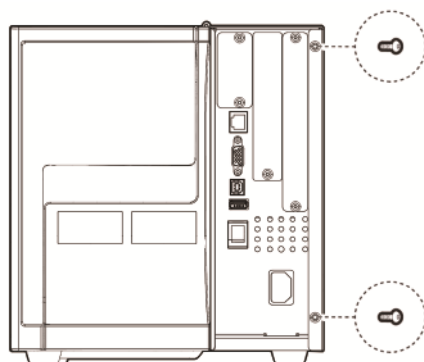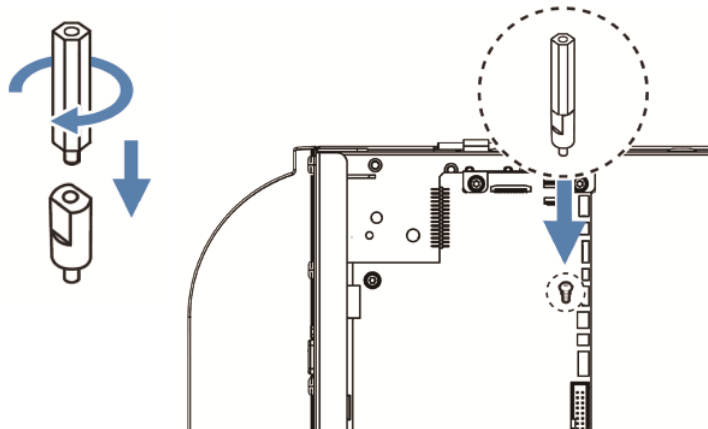
5. Remove the electronics cover.

6. On the back of the printer, remove the two screws and the cover plate.

7. Connect two spacer screws together. Use a T10 Torx screwdriver to remove the screw located on the top of the printer main board and attach the two spacer screws.

8. Insert the applicator interface board into the printer and secure the board assembly with two Torx screws.
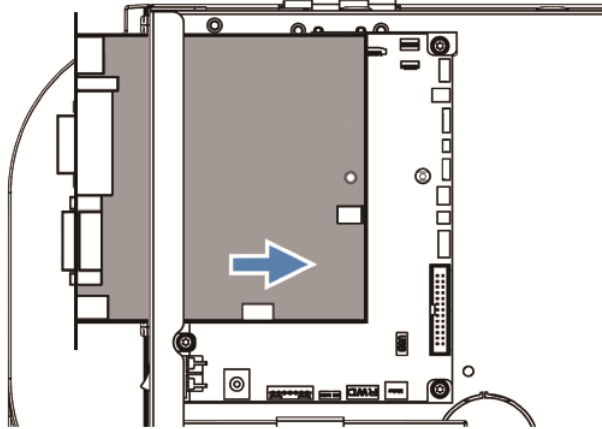
9. Secure the interface board assembly to the spacer screw with a Torx screw.

10. Insert the USB cable and Power cable into the J54 and J68 connectors on the printer main board. Insert the other ends into the J1 and J2 connectors on the Applicator Interface Board.
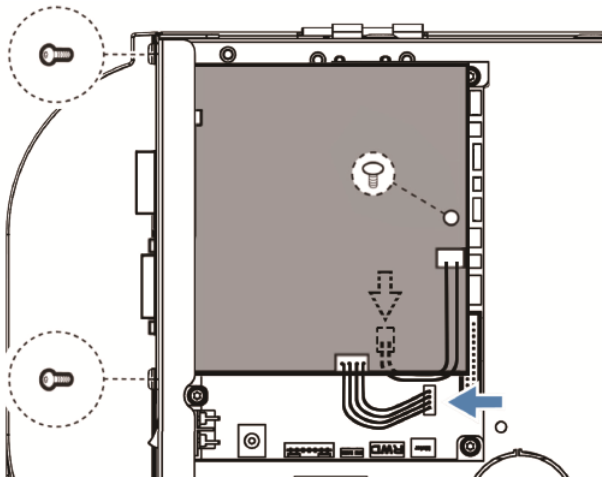
11. Put the electronics cover back on and secure it with the four screws removed in steps 4 and 6.

Interfacing

This option board contains 4 connectors for a Z-Style Port, a S-Style Port, an External Power Port, and an External Error Port.

Port	Description
Z-Style	A D-Sub 15Pin receptacle connector.
S-Style	A D Shaped SCSI 14Pin connector.
External Power	A Mini-DIN 6Pin receptacle connector.
External Error	A Mini-DIN 8Pin receptacle connector.
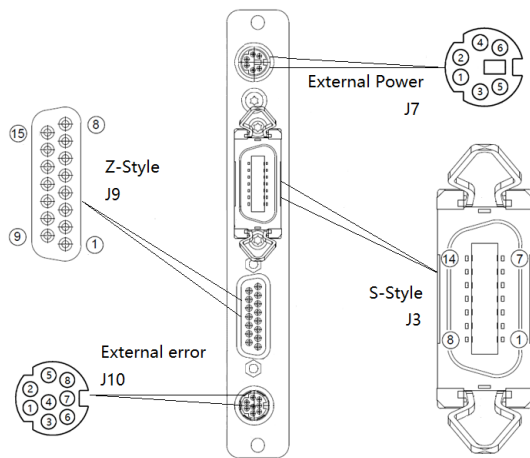
Z-Style Port

Z-Style Port Pinouts

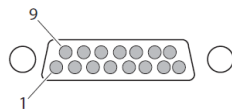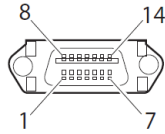| Pin	Signal	Type	Description
1	Signal ground	Ground	configurable for internal or external source
2	+5VDC	Power	Voltage supply for external sensors. Configurable for internal or external source.
3	Start print	Input	Pulse Mode - prints one and only one label whenever this pin is pulled to ground. Signal must be de-asserted and reasserted to print another label. Printing starts on HIGH to LOW transition if format is ready. De-assert this signal to HIGH to inhibit printing. Level Mode - prints labels continuously when this pin is pulled to ground. Printing is disabled when signal is de-asserted. If a label is printing when de-asserted, printing stops after the label is complete. Assert LOW to start printing if format is ready. De-assert HIGH when current label has finished printing. Remains de-asserted while waiting for the next label to be ready to print.
4	Feed	Input	Assert LOW to feed label stock. De-assert HIGH to stop feeding labels.
5	Pause	Input	Assert LOW for 200ms and then de-assert HIGH to toggle between pause and un-pause states.

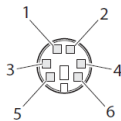| Pin	Signal	Type	Description
6	Reprint	Input	Reprint mode is enabled in software. When this mode in enabled, assert LOW to reprint last label. This input is ignored when reprint mode is disabled.
7	+24VDC	Output	Power for external devices: +24VDC (±10%) @ 2A.
8	Power ground	Ground	+24VDC return.
9	Ribbon/ Media low	Output	Goes LOW when the ribbon/media roll diameter drops below a predefined level, otherwise Goes HIGH. Media low is supported only by I-Style.
10	Service required	Output	Goes LOW during every status that keeps the printer from printing: Printhead lifted Ribbon out Media out General print engine fault Front arm lifted Verifier calibration required Verifier calibration expired Exceed maximum barcodes Verifier hardware error Verifier failure action prompt
11	End print	Output	Drives an applicator or other external device requiring synchronization with the print cycle. Choose between five types of output signals: Mode 0: Applicator port is OFF. Mode 1: Asserted LOW only when media is moving, otherwise de-asserted HIGH. Mode 2: Asserted HIGH only when media is moving, otherwise de-asserted LOW. Mode3 (Default): Asserted LOW for 20ms when label has finished printing and positioned. Not asserted during continuous printing. Mode 4: Asserted HIGH for 20 ms when label has finished printing and positioned. Not asserted during continuous printing.
12	Media out	Output	Goes LOW when the printer is out of media.
13	Ribbon out	Output	Goes LOW when the printer is out of ribbon.
14	Data ready	Output	Goes LOW when ready to print. De-asserted HIGH when printing cycle starts.
15	Verification failed	Output	Goes LOW when the printer encounters Verification failed error. Goes HIGH when the error is cleared.

S-Style Port

S–Style Port Pinouts

Pin	Signal	Type	Description
1	Media out	Output	Goes LOW when the printer is out of media.
2	Signal ground	Ground	Configurable for internal or external source.
3	Ribbon out	Output	Goes LOW when the printer is out of ribbon.
4	Error	Output	Goes LOW during every status that keeps the printer from printing: Printhead lifted Ribbon out Media out General print engine fault Front arm lifted Verifier calibration required Verifier calibration expired Exceed maximum barcodes Verifier hardware error Verifier failure action prompt
5	Start print	Input	**Pulse mode** - prints one and only one label whenever this pin is pulled to ground. Signal must be de-asserted and re-asserted to print another label. Printing starts on HIGH to LOW transition if format is ready. De-assert this signal to HIGH to inhibit printing. **Level mode** - prints labels continuously when this pin is pulled to ground. Printing is disabled when signal is de-asserted. If a label is printing when de-asserted, printing stops after that label is complete. Assert LOW to start printing if format is ready. De-asserted HIGH when current label has finished printing. Remains de-asserted while waiting for next label to be ready to print.

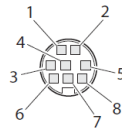| Pin	Signal	Type	Description
6	End print	Output	Drives an applicator or other external device requiring synchronization with the print cycle. Choose between four types of output signals: Type 1 (Default): Asserted LOW for 20ms when label has finished printing and positioned. Not asserted during continuous printing. Type 2: Asserted HIGH for 20ms when label has finished printing and positioned. Not asserted during continuous printing. Type 3: Asserted LOW only when media is moving, otherwise de-asserted HIGH. Type 4: Asserted HIGH only when media is moving, otherwise de-asserted LOW.
7	Reprint	Input	Reprint mode is enabled in software. When this mode in enabled, assert LOW to reprint last label. This input is ignored when Reprint mode is disabled.
8	Reserved		
9	Reserved		
10	Ribbon/ Media low	Output	Goes LOW when the ribbon/media roll diameter drops below a predefined level, otherwise Goes HIGH. Media low is supported only by I-Style.
11	Verification failed	Output	Goes LOW when the printer encounters Verification failed error. Goes HIGH when the error is cleared.
12	+24VDC	Output	Power for external devices: +24VDC (±10%) @2A.
13	+5VDC	Power	Voltage supply for external sensors. Configurable for internal or external source.
14	Power ground	Ground	+24VDC return.

External Power Port

External Power Port Pinouts

Pin	Signal	Type	Description
1	+5VDC	Input	+5VDc input for distribution through Applicator Port connector (Z-Style pin 2, S-Style pin 13)

| Pin	Signal	Type	Description
2	Signal ground	Input	Signal return for +5VDC supply (Z-Style pin 1, S-Style pin 2)
3	+24VDC	Input	+24VDC input for distribution through Applicator Port connector (Z-Style pin 7, S-Style pin 12)
4	Power ground	Input	Power return for input (Z-Style pin 8, S-Style pin 2)
5	+24VDC	Input	+24VDC input for distribution through Applicator Port connector (Z-Style pin 7, S-Style pin 12)
6	Power ground	Input	Power return for input (Z-Style pin 8, S-Style pin 2)

External Error Port

External Error Port Pinouts

| Pin	Signal	Type	Description
1	AppErr_1	Input	Applicator error #1, reserved for external applicator device to signal error for printer to receive status of applicator.
2	AppErr_2	Input	Applicator error #2, reserved for external applicator device to signal error for printer to receive status of applicator.
3	AppErr_3	Input	Applicator error #3, reserved for external applicator device to signal error for printer to receive status of applicator.
4	RtW_in_Ext	Input	External input signal from the applicator to the printer, for the printer to switch to the same state with the applicator, and behave in sync as part of the entire system.
5	+5VDC	Output	Available for applicator.
6	RtW_Out	Output	External output signal indicating the printer is Ready to Work. Signal may be asserted LOW when there are no active events in the System Health Monitor (SHM), when the printer motor is idle, or both.
7	Ground	Ground	Available for applicator.
8	Ground	Ground	Available for applicator.

Applicator Signals

The diagrams below show how applicator signals function in each applicator mode during the stages of printing labels.
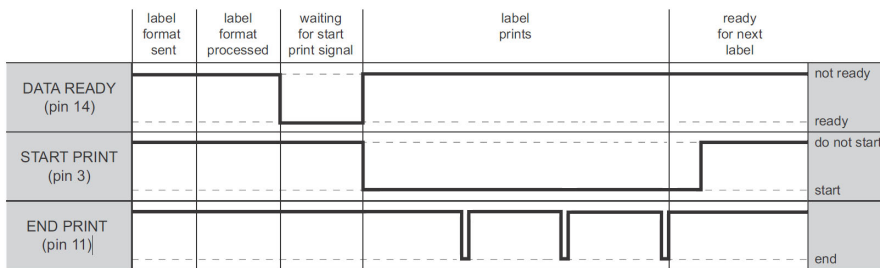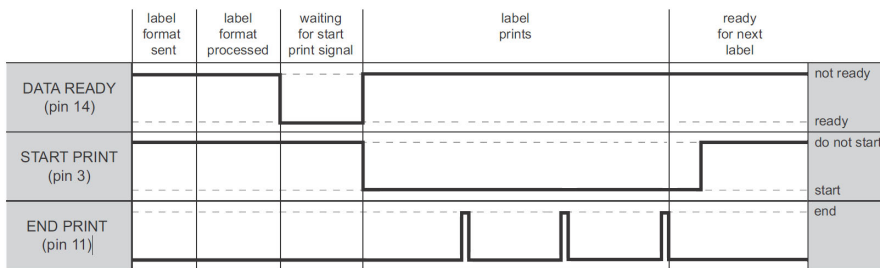
End Print Mode 1/Type 3
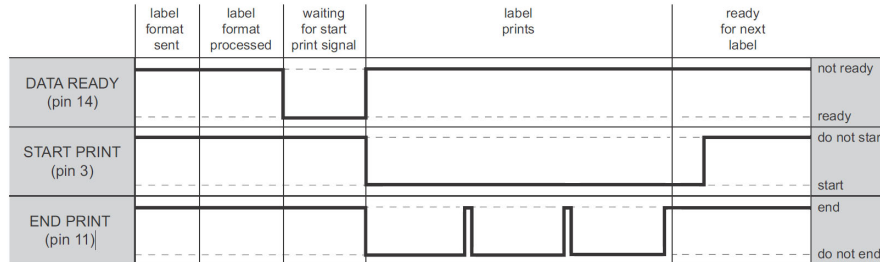
End Print Mode 2/Type 4
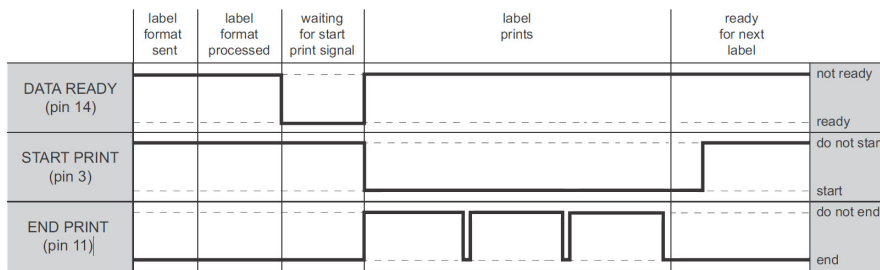
End Print Mode 3/ Type 1

End Print Mode 4/ Type 2

Configuring Applicator Port Settings

The applicator interface supports three different applicator modes:

- Z-Style. Choose this mode for a Zebra-type applicator.
- S-Style. Choose this mode for a Sato-type applicator.
- I-Style. This mode combines Z-Style or S-Style settings with the ability to trigger external I/O systems via the External Error port.

You can configure applicator port settings from the web browser interface or in Setup Mode.

Web Browser Interface

1. Click **Menu** > **System Settings > Manage I/O**. A configuration screen appears.
2. Chose **Enable** from the drop down list for the Applicator.
3. From the menu, click **Configure > Printing > Applicator**.
4. Choose desired settings from the drop down lists.

Setting	Description
Style	I-Style, Z-Style, S-Style
Startprint	Level or Pulse
Endprint	Mode 0, Mode 1/Type3, Mode2/Type4, Mode3/Type 1, Mode 4/Type 2
Ribbon/Media Low	Enables/disables the printer low ribbon alert message. Enables/disables the printer low media alert message.
Reprint	Enables/disables reprinting the last label sent to the printer (by using the Reprint signal)
Error on Pause	Enable this setting to set the "Service Required" signal when the printer is paused. This setting supported by Z-Style only.
Error Port	Enables/disables the printer external error port.
RTW	Configures the Ready-to-Work output signal (RTWOUTEXT). Choose from: Mode 1 - Signal is asserted low when no events are active in the System Health Monitor (SHM). Mode 2 - Signal is asserted low when the printer motor is idle. Mode 3 - Signal is asserted low when the printer motor is idle and no events are active in the SHM.
DC 5V	Configures the printer to use its internal power supply or an external supply (connected to the External Power port) to provide +5VDC to the Z-Style and S-Style ports.
DC 24V	Configures the printer to use its internal power supply or an external supply (connected to the External Power port) to provide +24VDC to the Z-Style and S-Style ports.

5. Click **Save**. The settings are saved.

Setup Mode

Use the printer touch screen to view and change settings.

1. Press **Menu** > **Settings** > **System Settings** > **Manage I/O**.
2. Choose **Enable** from the drop-down list for the applicator.
3. From the menu, select **Menu** > **Settings** > **Printing** > **Applicator**.

About Applicator Input Signals

This section describes the INPUT signals.

Note: *All IN signals are asserted low and de-asserted high.*

Signal	Description
Startprint	Starts a print job. Choose either Level or Pulse. Level: The printer starts printing labels when the startprint signal is asserted and continues printing until the signal is de-asserted. Pulse: The printer prints one label when the startprint signal is asserted. The startprint signal must be de-asserted and then asserted to print the next label.
Feed	Feeds a single label. Not supported by S-Style.
Pause	Toggles between Pause mode and printing. Not supported by S-Style.
Reprint	Reprints the last valid label.
Apperr1	Applicator error 1.
Apperr2	Applicator error 2.
Apperr3	Applicator error 3.
RTWINEXT	External input signal, which you can use to monitor the operational status of the entire system.

About Applicator OUT Signals

This section describes the Applicator OUT signals.

Note: *Unless described otherwise, all OUT signals are asserted low and de-asserted high.*

Signal	Description
Data Ready	Asserted when the printer is ready to receive a startprint signal and execute the current print job. De-asserted when the print cycle ends. Not supported by S-Style.

Signal	Description
Endprint	Asserted during or after a print cycle. The endprint signal also behaves differently depending on the applicator port endprint mode. When the startprint signal is received, the endprint signal may or may not be asserted. There are five options to choose from: Mode 0: Endprint signal is never asserted. Mode 1 (Z-Style)/Type 3 (S-Style): Asserted low during print/feed cycle. Mode 2 (Z-Style)/Type 4 (S-Style): Asserted high during print/feed cycle. Mode 3 (Z-Style)/Type 1 (S-Style): Asserted low for at least 20 ms after print/feed cycle end. Mode 4 (Z-Style)/Type 2 (S-Style): Asserted high for at least 20 ms after print/feed cycle end.
Media out	Asserted when the printer is out of media. Activates an SHM PaperOut event in the System Health Monitor (SHM). De-asserted when the same event is deactivated.
Ribbon/Media low	Asserted when the ribbon/media roll diameter drops below a predefined level. De-asserted while the roll diameter remains above the predefined level. Media low is supported only by I-Style.
Ribbon out	Asserted when the printer is out of ribbon. Activates an SHM RibbonOut event in the System Health Monitor (SHM). De-asserted when the same event is deactivated.
RTWOUTEXT	External output signal. Behavior depends on the current setup. Signal may be asserted when there are no active events in the System Health Monitor (SHM), when the printer motor is idle, or both. This signal is inactive when the Error Port option is disabled.
SERVICEREQ (Service Required)	Asserted low when an event in the System Health Monitor (SHM) is activated. De-asserted when no events are active in the SHM. A "service required" event is also activated when the Error Port is enabled and any applicator errors is detected. This signal is also asserted when the Error on Pause option is enabled.

Programming Applications for the printer

The printer includes Honeywell Fingerprint, a programming language that resides on the printer. Fingerprint is an easy-to-use programming tool for label formatting and printer customization.

Fingerprint also includes a slave protocol, Honeywell Direct Protocol, which allows layouts and variable data to be downloaded from a host and combined into labels, tickets, and tags with a minimum of programming. Honeywell Direct Protocol also includes a versatile error handler and a flexible counter function.

Fingerprint Commands for the printer

The ON PORTIN, PORTIN, PORTOUT, and ON PORTOUT Fingerprint commands support applicator functionality for the printer. These commands are functional when the printer applicator port status is enabled.

This section includes basic information for each of these commands. For more information, see the Fingerprint Command reference manual.

ON PORTIN

This command allows a Fingerprint application to detect in signals. If a particular in signal is asserted, the application moves to the subroutine responsible for carry-ing out tasks related to that in signal. One command is available for detection of each of the 8 in signals.

Note: *This command is not supported by Honeywell Direct Protocol.*

Example:

- ON PORTIN.STARTPRINT GOSUB nnn

PORTIN

This command is a version of the PORTIN(PORT) command and checks the current state of a specified signal. This command returns –1 if the signal is asserted, or 0 if the signal is de-asserted.

Note: *This command is supported by Fingerprint and Direct Protocol.*

Examples:

- PORTIN.STARTPRINT

    or

- PORTIN.RIBBONLOW

PORTOUT

Supports manually modifying the dataready signal. PORTOUT is not allowed when the applicator port style is set to S-Style.

Note: *This command is not supported by Direct Protocol.*

Example

- PORTOUT.DATAREADY ON
- PORTOUT DATAREADY OFF

where *on* asserts the dataready signal low and *off* de-asserts the dataready signal high.

ON PORTOUT

This command allows a Fingerprint application to detect when out signals have been reset to default values. The command moves to a specified subroutine whenever the applicator port status is enabled, and whenever the applicator port style is changed.

Example:

- ON PORTOUT.RESET GOSUB nnn

Using External Applicator Signals

The printer responds to external applicator port signals differently, depending on whether your application is using Fingerprint or Honeywell Direct Protocol.

Fingerprint and Applicator Signals

When you use Fingerprint, all in signals and the Data-ready out signal are handled by Fingerprint. Other out signals are handled by firmware.

Feed

When the Feed in signal is received, the application moves to a specified subroutine that feeds labels until the Feed in signal is de-asserted.

Example

- 10 ON PORTIN.FEED GOSUB 200

  ...
  200 FORMFEED
  210 RETURN

Pause

When the Pause in signal is received, the application moves to a specified subroutine that finishes the current print job and then places the printer in pause mode.

Example

- 10 ON PORTIN.PAUSE GOSUB 90

  ...
  90 pause printer

Startprint

When the Startprint signal is received, the application moves to a specified subrou-tine that starts the print job. The Startprint signal must be preceded by the dataready signal as seen in this example.

Example

- 10 PORTOUT.DATAREADY on
  20 ON PORTIN.STARTPRINT GOSUB 60

  ...
  60 my print routine
  70 PRINTFEED
  80 RETURN

Reprint

When the Reprint signal is received, the application moves to a specified subrou-tine that reprints the last valid label.

Example:

- ...
  100 ON PORTIN.REPRINT GOSUB 150

  ...
  150 PRINTFEED -1,1
  160 RETURN

Printfeed

The dataready signal must be set manually by the Fingerprint application before a printfeed is issued when using with an applicator.

Handling External Applicator Errors

When an error signal (apperr1, apperr2, or apperr3) is received, the application moves to a specified subroutine that takes action based on error severity.

Example

- ...
  60 ON PORTIN.APPERR1 GOSUB 100

  ...
  100 perform error handling
  110 RETURN

Handling Internal System Errors

For internal system errors, the system error signal status can be read at any time within the application so appropriate measures can be taken. When any of these errors occur, the appropriate out signal (including the error) is asserted:

- Printhead lifted
- Ribbon out
- Media out
- General print engine fault
- Front arm lifted
- Verifier calibration required
- Verifier calibration expired
- Exceed maximum barcodes
- Verifier hardware error
- Verifier failure action prompt

Example

- 10 IF PORTIN.RIBBONLOW GOTO 200

  ...
  200 perform error handling
  210 RETURN

Resetting Out Signals

Out signals are reset to their default values when certain options are changed by using the SETUP menu. When the reset is detected, the application moves to a specified subroutine and performs the tasks necessary to reinitialize the print engine.

Example

- 10 ON PORTOUT.RESET GOSUB 150

  ...
  150 perform initialization
  160 RETURN

Direct Protocol and Applicator Signals

In Direct Protocol, all in and out signals are handled by the Direct Protocol firmware.

Feed

There are two ways to trigger blank label feeding:

- by manually pressing Feed on the printer front panel. The printer feeds a single blank label.

- by using the Feed in signal. When this signal is detected, the printer feeds blank labels as long as internal applicator flag indicates that the Feed signal is asserted.

Pause

The applicator can toggle the current pause state by using the pause in signal to simulate pressing Pause on the printer front panel. When the printer is in pause state, you can press Setup on the printer front panel and place the print engine in Setup Mode for manual configuration.

Startprint

When the printfeed command is executed, the print process sets the dataready signal and then waits for the startprint signal to be detected before proceeding with the print job.

The print process will not set another dataready signal until the current print job de-asserts the previous dataready signal. This prevents the printer from printing a new label before the previous label is completed.

Reprint

This signal works much the same way as startprint. The reprint signal is detected under two conditions:

- when the printer is idle.

- when the printer is waiting for a startprint signal during the execution of a printfeed command.

The printer prints only one label at a time.

Handling External Applicator Errors

The external applicator error in signals (APPERR1, APPERR2, APPERR3, RTWINEXT) should be asserted when external applicator errors occur. When one of these signals is detected, an associated event is activated in the System Health Monitor (SHM). When the issue causing the error has been resolved and the error signals are de-asserted, the events are deactivated in the SHM.

Handling Internal System Errors

When a system error occurs that activates an event in the SHM, the "service required" signal is asserted. The external RTW out signal can be de-asserted, depending on the current print engine RTW setting.

When any of these errors occur, the appropriate out signal (including the error) is asserted:

- Printhead lifted
- Ribbon out
- Media out
- General print engine fault
- Front arm lifted
- Verifier calibration required
- Verifier calibration expired
- Exceed maximum barcodes
- Verifier hardware error
- Verifier failure action prompt

Error Messages

ERRNOAPP

Message:	Operation not allowed. Applicator Port disabled.
Cause:	Application sent an applicator port command to the printer and the applicator port is disabled.
Error Number:	88

ERRAPP

Message:	Operation not allowed. Applicator Port enabled.
Cause:	Application sent the Fingerprint command PORTOUT(PORT) ON|OFF on a port used by the applicator port when the applicator port is enabled.

| Error Number: | 89 |

ERRINPUTON

| Message: | Operation not allowed in Direct Protocol. |
| Cause: | Running the PORTOUT.DATAREADY ON|OFF or PORTIN.<SIGNAL> GOSUB XXX commands when the printer is using Direct Protocol. |

| Error Number: | 90 |

EAPPERR1

Message:	Applicator Error 1.
Cause:	AppErr1 in signal detected.
Result:	Activates event in System Health Monitor (SHM).
Error Number:	1340

EAPPERR2

Message:	Applicator Error 2.
Cause:	AppErr2 in signal detected.
Result:	Activates event in System Health Monitor (SHM).
Error Number:	1341

EAPPERR3

Message:	Applicator Error 3.
Cause:	AppErr3 in signal detected.
Result:	Activates event in System Health Monitor (SHM).
Error Number:	1342

ERTWINEXT

Message:	RTW Extenal Error.
Cause:	RTWExternal in signal detected.
Result:	Activates event in System Health Monitor (SHM).
Error Number:	1343

ENODATAREADY

Message:	Dataready not enabled.
Cause:	Application sent a PRINTFEED in Fingerprint when the applicator port is enabled, the style is set to I-Style or Z-Style, and the dataready signal is not enabled.
Result:	Terminates the printfeed command without printing a label.
Error Number:	1344

Display Messages

These messages appear in the printer display under certain conditions when a PRINTFEED command is run.

Message:	APPLICATOR PORT: Wait for signal.
Cause:	Running a PRINTFEED command blocks execution until a startprint signal is received. The message appears when execution has been blocked for a few seconds.

Message:	APPLICATOR PORT: Wait for reprint.
Cause:	Running a PRINTFEED –1,1 command blocks execution until a reprint signal is received. The message appears when execution has been blocked for a few seconds.

Parallel Port (IEEE1284 Board)

Out of the Box

The Parallel Port Kit includes:

- One Parallel Port Board
- One USB cable
- Two Torx screws
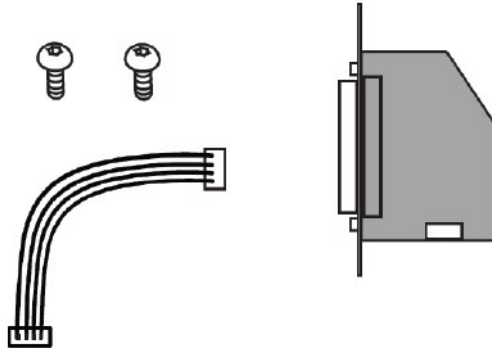
Installation

⚠ **Caution: Turn off the printer and disconnect the power cord before installing accessories on your printer.**

1. Open the media cover
2. Use a T20 Torx screwdriver to remove the screws that secure the electronics cover to the inside of the printer base.
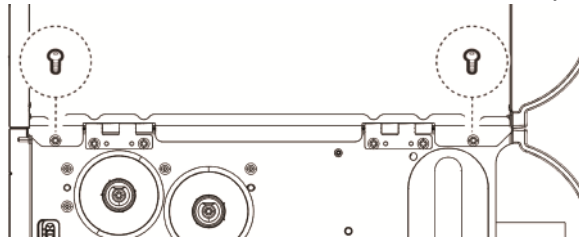
3. Close the media cover.

4. Remove the two screws located on the outside of the electronics cover.
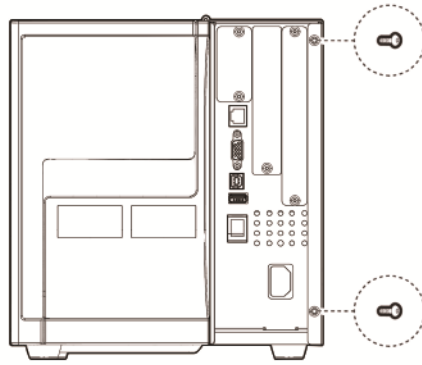
5. Remove the electronics cover.
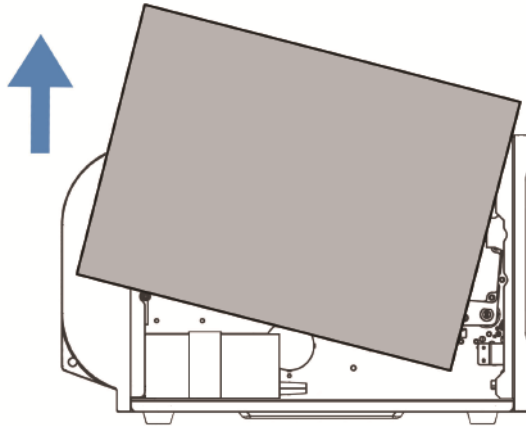
6. On the back of the printer, remove the two screws and the cover plate.
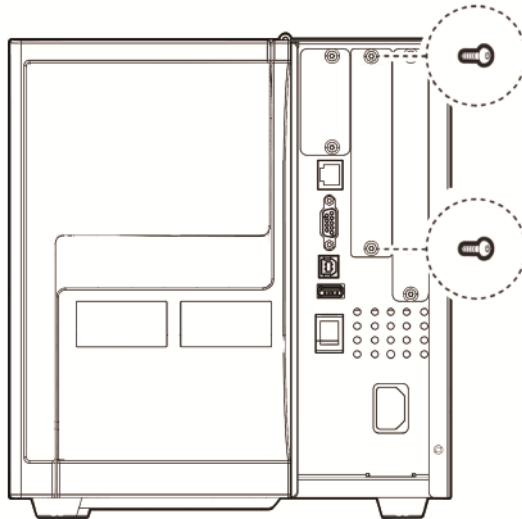
7. Insert the cable into the J2 connector on the Parallel Port (IEEE1284) board.
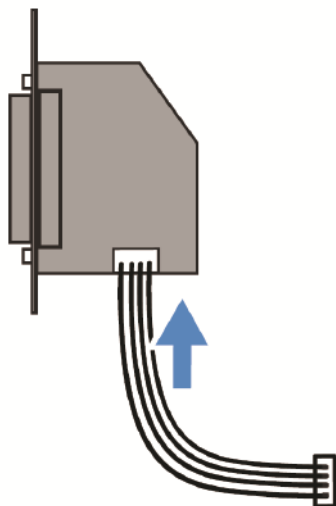
8. Insert the Parallel Port Board into the printer and secure the board assembly with two Torx screws.
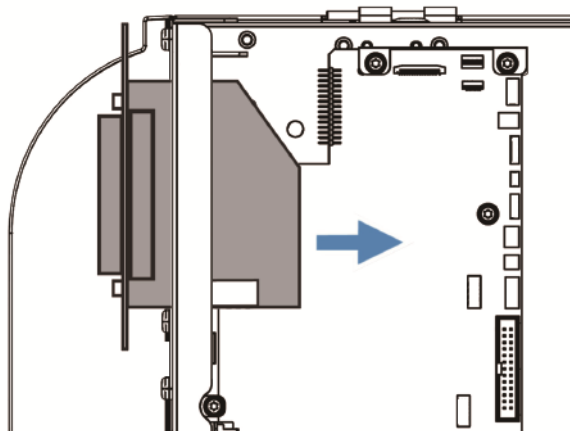
9. Insert the other end of the cable into the J52 connector on the printer main board.
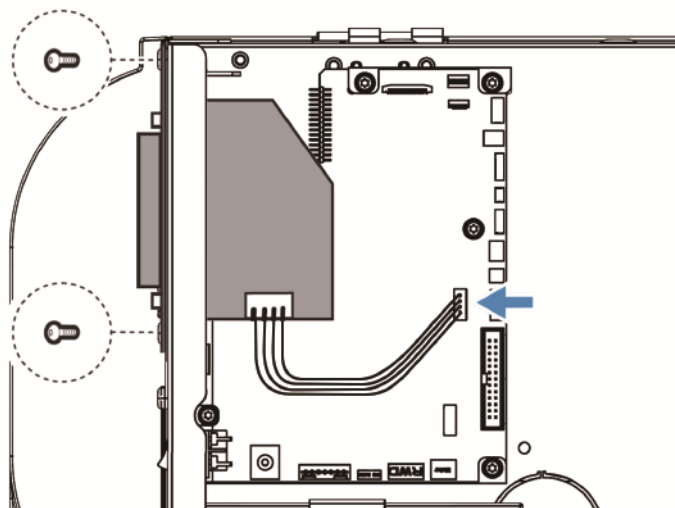
10. Put the electronics cover back on and secure it with the four screws removed in steps 4 and 6.

3 INSTALLING ACCESSORIES

This chapter describes how to install the accessories on the printer.

Cutter Module

The standard cutter module allows you to cut the non adhesive media into individual labels.

Use these instructions to install the cutter on your printer. You will find the below items in the shipping box.

• Standard Cutter module with bracket

• 1 Torx screw

⚠ **Warning:** **The cutter must only be installed by an authorized service technician.**

⚠ **Caution:** **Follow standard ESD guidelines to avoid damaging the equipment you are servicing.**

⚠ **Caution:** **Before you begin, turn off the printer and disconnect the power cord and communication cables.**

1. Remove the two screws for the access panel on the back of the printer.
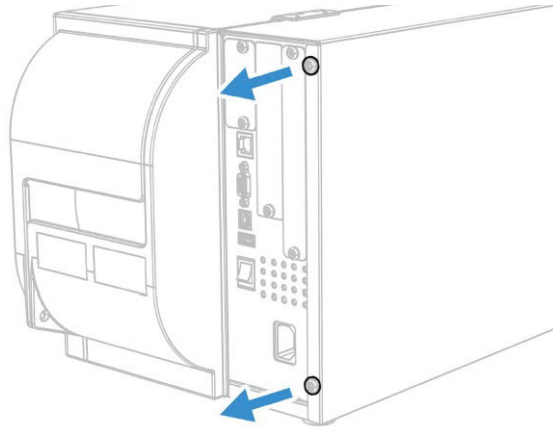
2. Remove the electronics cover.
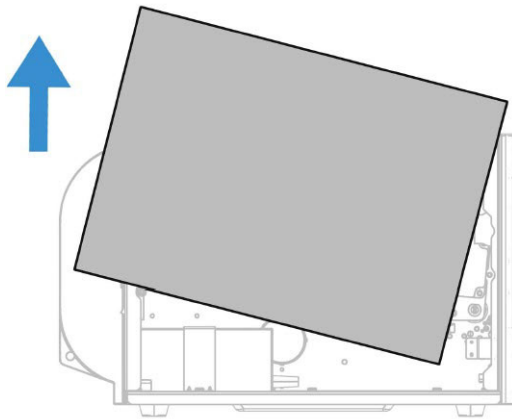
3. Lift the tab and pull forward to remove the front access door.
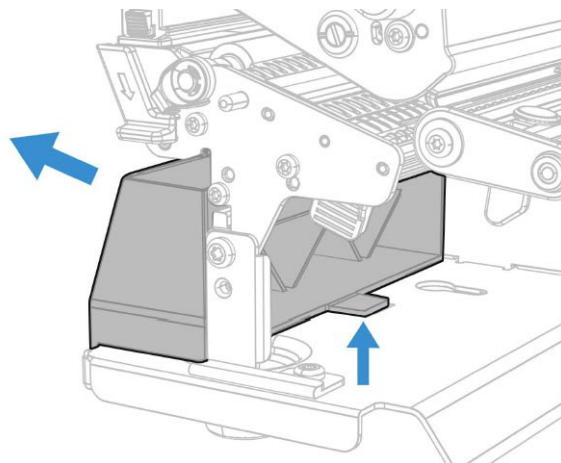
4. Push down to allow cutter installation.
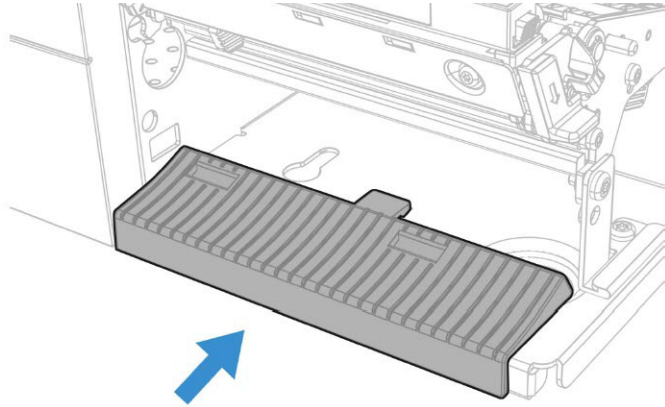
5. Attach the cutter to the printer base.
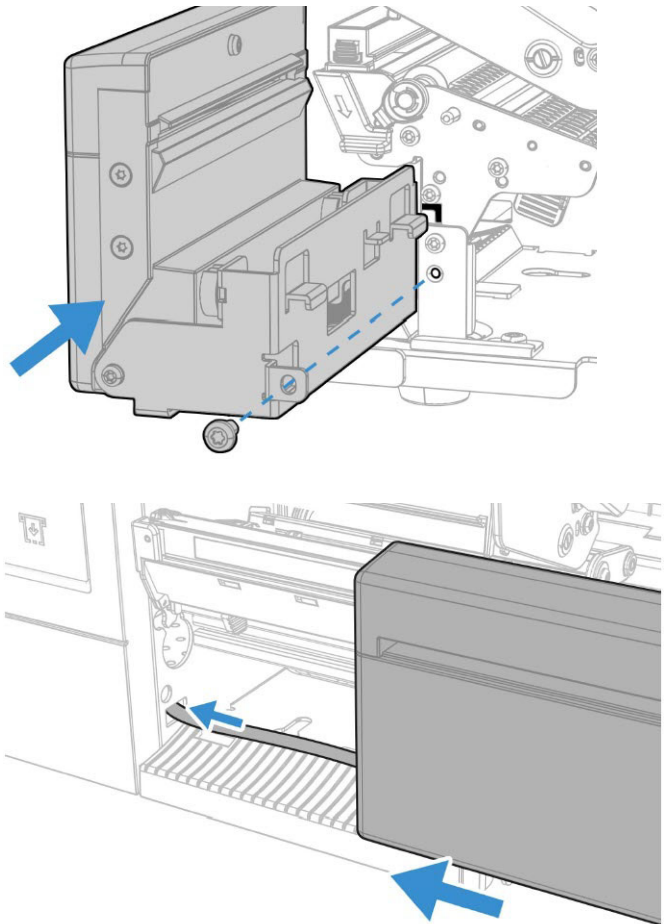
6. Tighten the screw to hold the cutter in place.
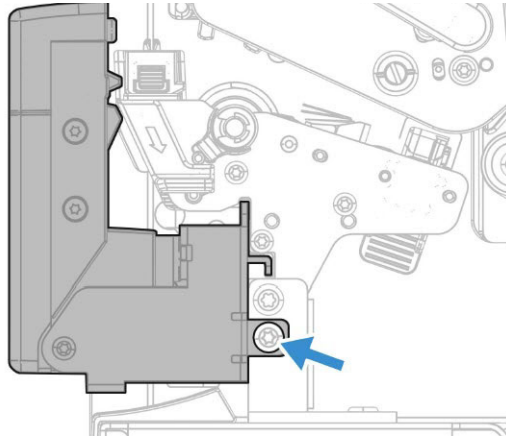
7. Connect one end of the cutter cable to the main logic board. Route the cutter cable through the printer and out behind the UI cover.

8. Use the two cable retainers to secure the cutter cable in place.
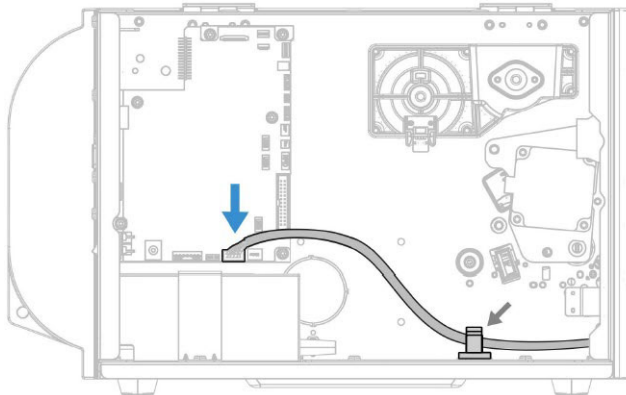
9. Secure the electronics cover onto the printer and close the media cover.
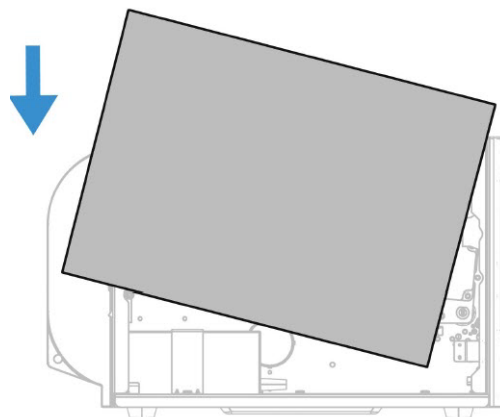
After you load the media, you need to configure the cutter. If you have an icon printer, use PrintSet5 or a printer command language to configure the cutter.

If you have a full touch printer, continue with the following steps:

1. After the printer is done with startup, press the Main Menu button.

2. Select **Settings > Printing > Cutter**.

3. Press **Save** to save your settings.

4. Configure the start and stop adjust settings.

Peeler and Rewinder

Use these instructions to install the peeler rewinder on your printer.

In the box, you will find the following items:

*   Plastic cover

*   Gear

*   7 Screws

*   1 rewind module

*   1 peel module

You will need the following tools:

*   Torx screwdriver

To install the peeler and rewinder, you need to open the printer and physically install it in the printer.

⚠ **Warning: The peeler rewinder must only be installed by an authorized service technician.**

⚠ **Caution: Follow standard ESD guidelines to avoid damaging the equipment you are servicing.**

⚠ **Caution: Before you begin, turn off the printer and disconnect the power cord and communication cables.**

You need to remove both the media cover and the electronics cover to install the peeler and rewinder.

1. Open the media cover, and remove the screws on the top hinge.
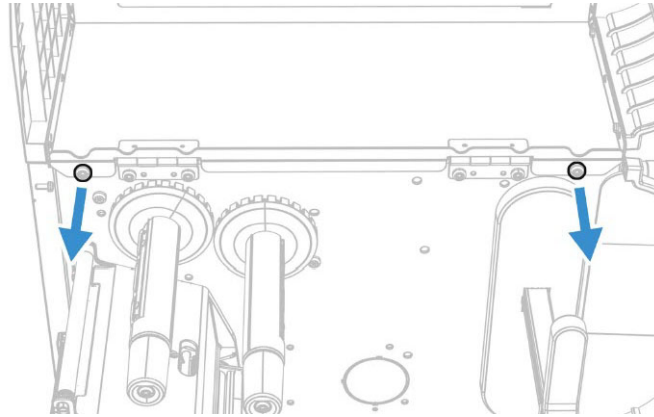
2. Remove the two screws for the access panel on the back of the printer.

3. Remove the electronics cover.

PX240/PD45 Accessory User Guide
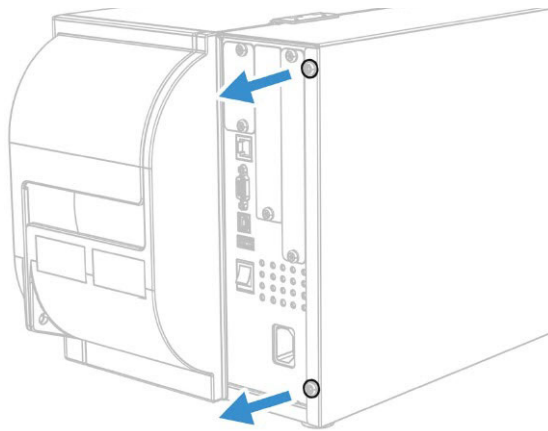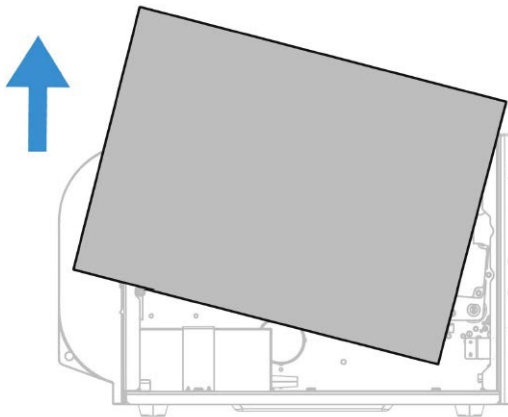
4. Lift the tab and pull forward to remove.
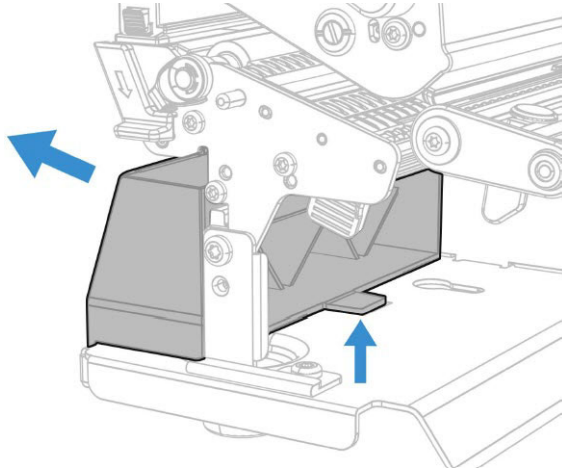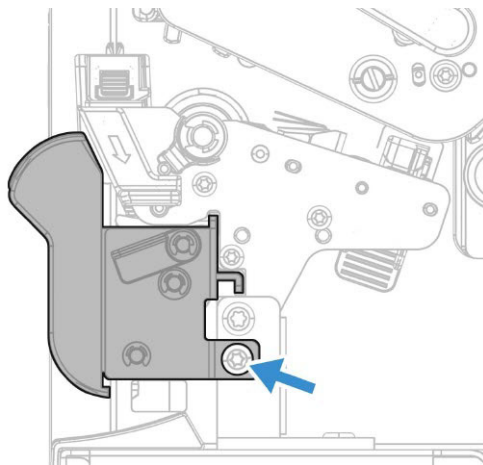

5. Push forward to allow installation.
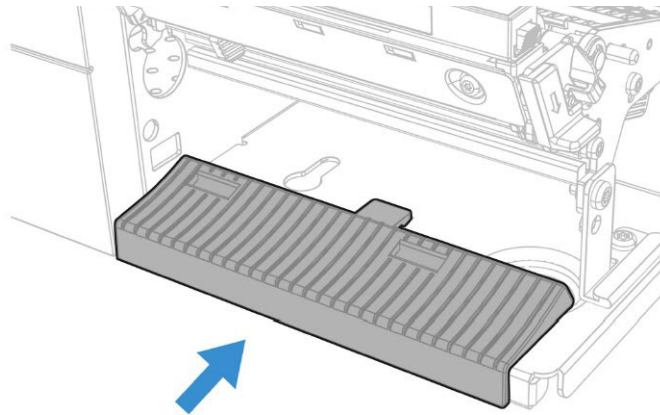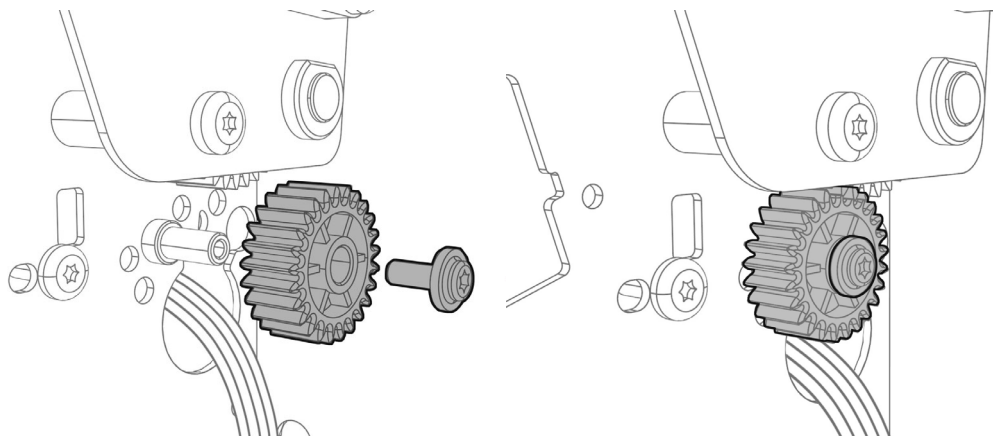

6. Attach the peeler to the printer base.
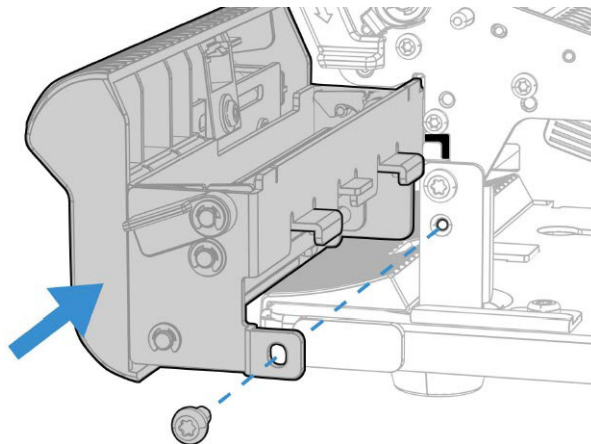
7. Slide the peeler onto the printer.
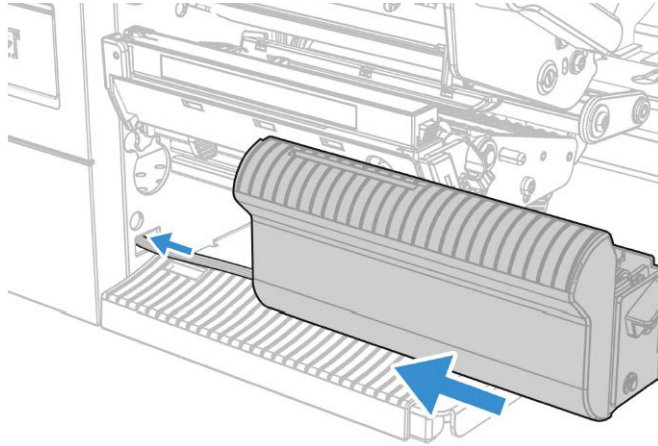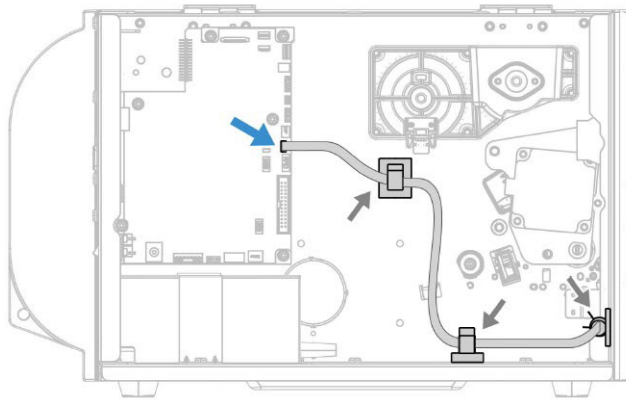

8. Tighten the screw to secure the peeler in place.

9. Install the peel gear into the rivet column position of the spine and secure with a screw.

10. Connect one end of the cable to the main logic board. Route the cable through the printer and out behind the UI cover. Use the two cable retainers to secure

the other end of the cable in place.

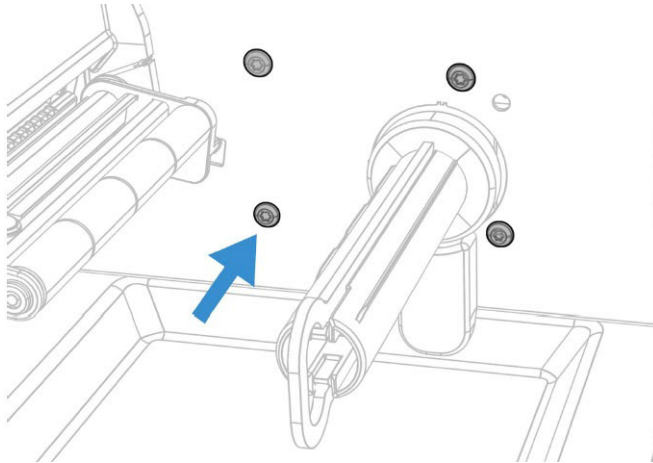11. Use a screw driver to open the hole where the rewinder will be installed.
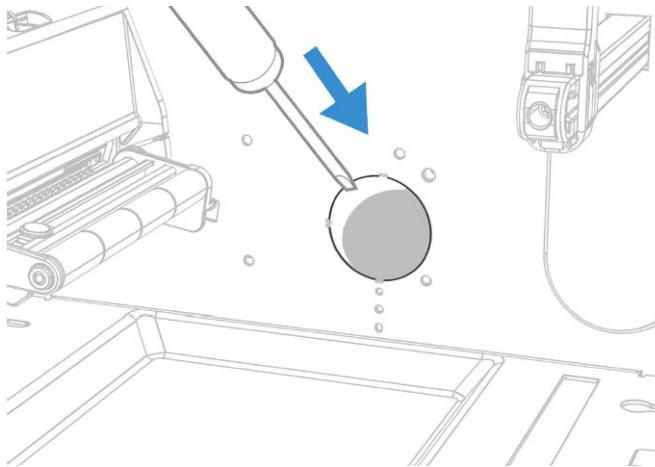
12. Attach the rewinder guide to the underside of the opening and secure with a screw.
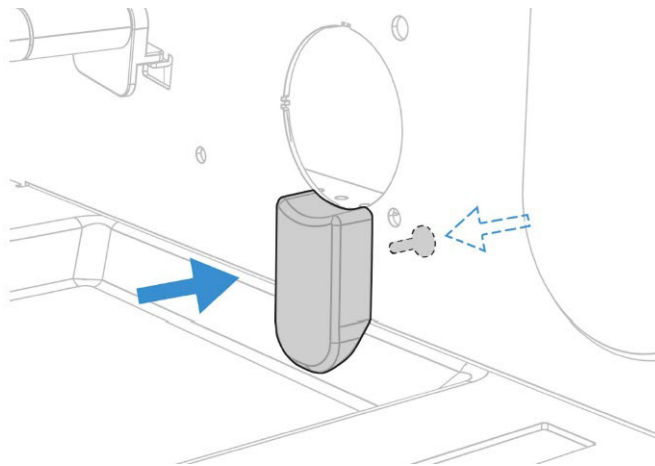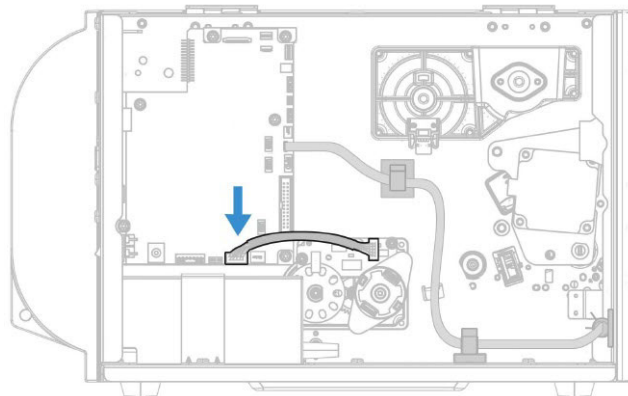
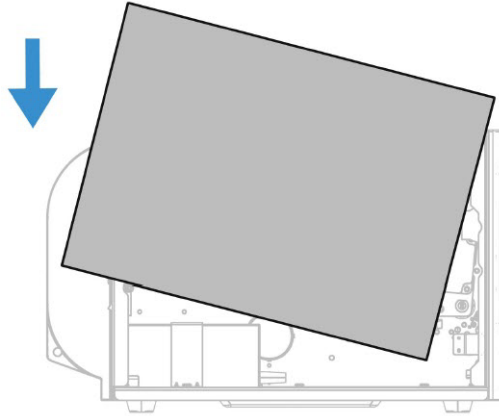13. Guide the rewinder through the opening on the inside of the printer.
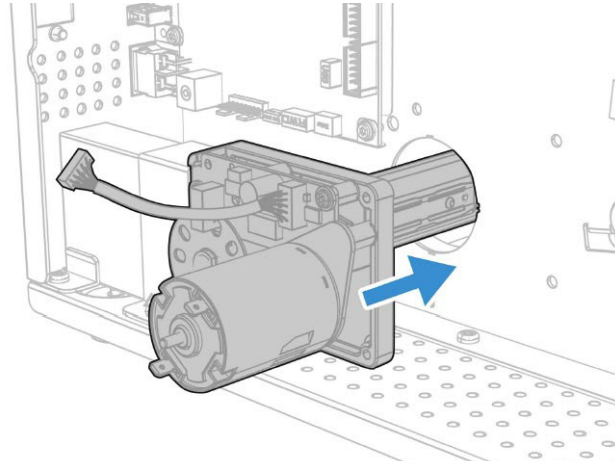
14. Tighten the screws.

15. Connect one end of the cable to the main logic board. Use the two cable retainers to secure the cable in place.

16. Secure the electronics cover onto the printer and close the media cover.

17. After loading the media, turn the printhead lift lever counter clockwise to close the printhead.

18. Press the **Print** button to advance the media.

19. Configure the printer for the correct media type (media with gaps, black mark, continuous fixed length, or continuous variable length).

20. Calibrate the sensors on the printer. You can calibrate the media from the Main menu (**Wizards > Calibration > Media**) on a full touch printer or from the web page (**Services > Media > Calibration**) for all models of the printer.

21. You can set the Peel Strength (**Menu > Media > Peel Strength**). There are four levels of peel strength that you can choose from: Low, Medium, High, and Very High.

Wi-Fi Module

Use these instructions to install the module.

You will need the following tools:

• T15 Torx screwdriver

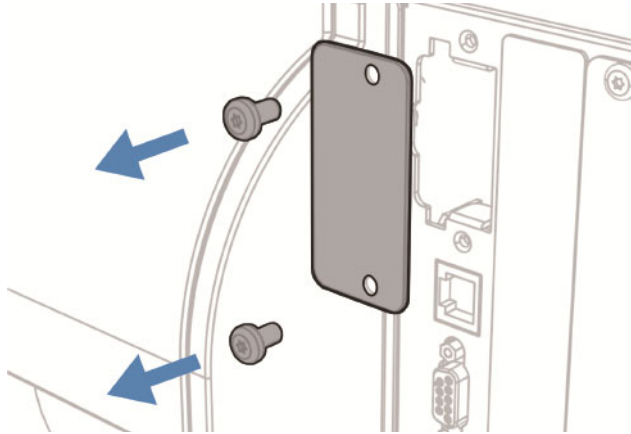⚠ **Warning:** **The Wi-Fi module must only be installed by an authorized service technician.**

⚠ **Caution:** **Follow standard ESD guidelines to avoid damaging the equipment you are servicing.**
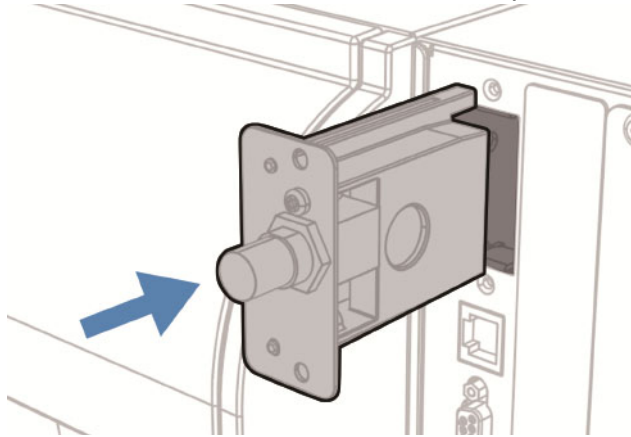
⚠ **Caution:** **Before you begin, turn off the printer and disconnect the power cord and communication cables.**
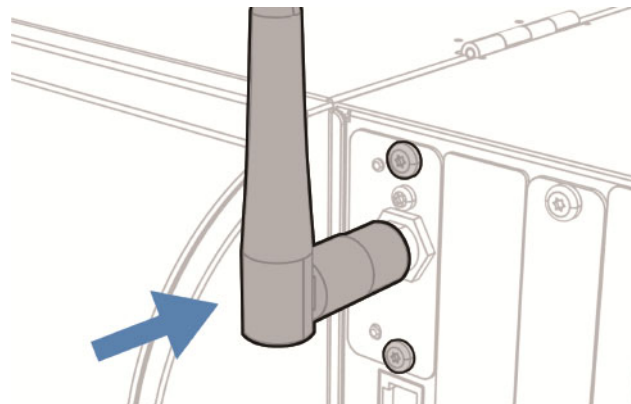
1. Remove the Wi-Fi Cover plate located on the back of the printer.

2. Insert the Wi-Fi module into the printer.

3. Secure the board with two screws and install the antenna.

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