

APEX 4

User Guide ■ ■ ■



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General Precautions

- Before using this product be sure to read through this manual. After reading, please keep the manual in a safe place for future reference.
- The information contained herein is subject to change without notice of any type.
- Datamax-O'Neil is not responsible for any operational results regardless of missing information, errors or any misprinting in this manual.
- Datamax-O'Neil is not responsible for problems created as a result of using options and consumables not approved by them.
- This product is designed for servicing at an Authorized Service Center. Other than routine maintenance described in this manual, the user should not attempt to repair service or disassemble this product.
- Incorrect operation, handling, improper supplies and operating environments may cause damage or otherwise affect the proper operation of this product. Such actions invalidate the product warranty.

Safety

In this manual and on the Printer and Accessories we make use of internationally recognized safety symbols as follows:

	Caution! Refer to the explanation in this Manual
	Caution! Risk of electric shock
	Double Insulation or Reinforced Insulation
	DC, Direct Current or Voltage
	AC + DC, Current or Voltage

1 Getting Started

1.1 Unpacking the Printer

The APEX 4 portable printer is a full featured portable receipt printer designed for varied job environments including field service, field sales, hospitality and restaurants, ticketing and many others where point of service receipts are required. The package contains:

- Printer
- Battery Cartridge
- Universal Adapter (USA, UK, European and Australian plugs) for charging the battery inside the printer
- Shoulder Strap with Quick Clip
- Roll of Paper Supply (already loaded in the printer)
- Print Head Cleaning Pen

Both cabled and wireless communication is possible. [Figure 1](#) shows an overview of the APEX 4 printer.

OVERVIEW



FIGURE 1: PRINTER OVERVIEW

1.2 Installing and Charging the Battery Cartridge

Note: One battery cartridge is included with the printer. Similar to a cordless phone battery, the printer's battery must be charged before using it. For optimal performance, we recommend charging the battery twice before initial use. Charge the battery for 3 hours; disconnect power adapter, reconnect, and charge again. After initial charge, charge battery for 180 minutes whenever the low battery indicator comes on or as directed by your IT team.



Datamax-O'Neil batteries must be cycled several times to achieve maximum capacity. To cycle a battery, fully charge it and then allow full discharge through normal use in the printer.

1.2.1 Installing the Battery

Note: Refer to [Figure 2](#) below to install the battery pack in the printer.

Unlock the battery door by sliding the battery door locking tab up.
Open the battery door to an angle of about 90 degrees. Do not force open.
Insert the battery as shown (non-contact end first and let contact end drop into place).
Close and lock the battery door by sliding the locking tab down.

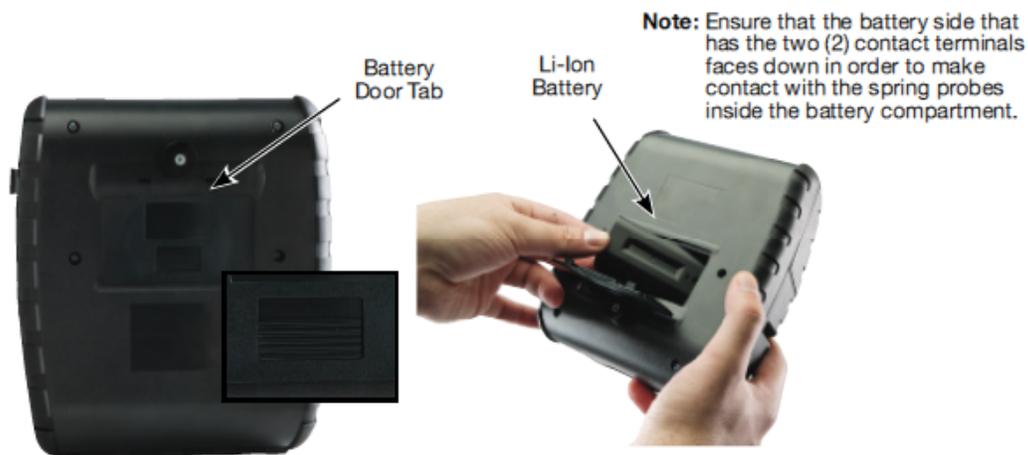


FIGURE 2: INSTALLING THE BATTERY CARTRIDGE

Note: If paper door does not open easily, tap the printer against the palm of your hand near the paper door hinge.

Note: Ensure that battery side with 2 contact terminals is facing down to make contact with the spring probes inside the battery compartment

1.2.2 Charging the Battery

For optimal performance, we recommend charging the battery twice before initial use. Charge the battery for 3 hours; disconnect the power adapter, reconnect and charge again. After this initial charge, charge the battery for 180 minutes whenever the low battery indicator comes on or as directed by you IT team. Follow the next procedure for charging the battery:

- Plug battery charger adapter output cable in the battery charger connector as shown in [Figure 3](#).
- Plug battery charger adapter into the appropriate AC line voltage socket.
- Battery LED will illuminate amber indicating that the battery is being charged.
- The battery will be fast charged and after about 180 minutes the Battery LED will turn off
- To remove the battery cartridge, open the battery door and tip the battery out of the printer.



FIGURE 3: CHARGING THE BATTERY CARTRIDGE

Note: To ensure a full charge, do not operate the printer while charging.

Note: The wall-mounted charger is a Class II equipment. Multiple plug configurations comply with most international standards. The wall-mounted charger is not supplied with plugs for use in Korea.

Model	APEX 4
Input Voltage/Current	100-240 VAC/ 0.4A
Input Frequency	47-63 HZ

	Do not use a charger not approved by Datamax-O'Neil for use with the APEX 4. Use of an unapproved charger could damage the battery pack or the printer and will void the warranty.
	The battery terminals are well recessed inside the printer. Do not allow them to contact conductive material since this may create a short circuit, which could cause injury or start a fire.
	When using the wall mounted charger ensure the socket outlet is close to the printer and easily accessible during the battery recharging process. Either switch the socket off (if supplied with a socket switch) or pull out the charger from the socket or disconnect the plug from the printer in the event of any problems.

1.3 Reading the LED Status

[Figure 4](#) points out the location of the LED indicators described in Table 1 and Table 2

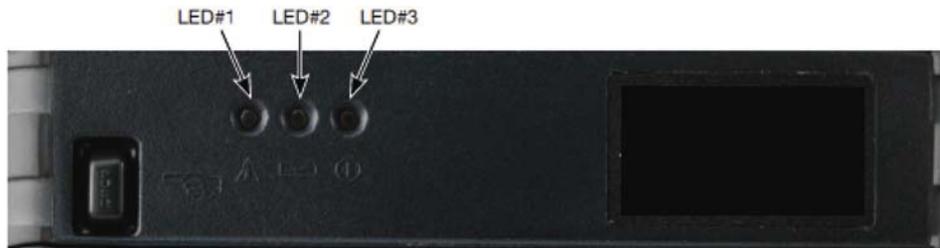


FIGURE 4 - LED INDICATOR LOCATIONS

[Table 1](#) explains the LED indicator status. [Table 2](#) explains the Error/Warning indicator status.

Refer to [Figure 1](#) for the locations described for ON/OFF and FEED push button switches and AC adapter socket.

Table 1 - Reading the LED Status

LED	Status	Condition	Function
LED # 1 Communication	GREEN	Flashing	Power is ON and the printer is in USB mode
		Steady	Communicating with host
	BLUE	Flashing	Power is ON and the printer is in Bluetooth mode
		Steady	Transmitting/receiving
	AMBER	Flashing	Power is ON and the printer is in 802.11b/g mode
		Steady	Transmitting/Receiving
LED # 2 Battery	AMBER	Steady	Battery being charged. The LED will turn off when the battery is fully charged
LED # 3 Magnetic Card Reader & Printer Error	GREEN	Steady	<ul style="list-style-type: none"> Indicates that MCR is ready to accept data Indicates that SCR is ready to accept data
		Flashing	Indicates that the printer is in USB Bootloader mode. (USB cable is plugged in and Dip Switches 5 and 7 are ON) <i>Note: If USB is unplugged, LED will flash Amber until printer is reset manually</i>

Table 2 - Reading the Error/Warranty LED Status

LED #	LED Color/ Status	Description	Action Required
LED # 1 Communication	RED/ Steady	Low power indication	Charge battery
LED # 1 & LED # 3	(#1) GREEN/ Flashing (#3) RED/ Flashing	Printer is in RS232 or USB mode and Printer Buffer is not empty.	Press Feed to clear error. Cycling printer power will result in printer buffer data loss.
	(#1) BLUE-GREEN Flashing* (#3) RED/ Flashing	Printer is in Bluetooth mode and Printer Buffer is not empty.	Press Feed to clear error. Cycling printer power will result in printer buffer data loss.
LED # 3 Magnetic Card Reader & Printer Error	GREEN Momentary flashing → RED Flashing	Printer has discovered and is parked on the Q- Mark	Advance Q-Mark to tear bar level to continue (refer to manual for Q- Mark commands)
	RED Flashing	Paper Error Paper Door Open Dip Switch 5 and 7 are ON	Insert paper properly (refer to User's Guide) Close paper door to clear error Place printer in correct mode
	RED Steady	Printer out of paper	Replace roll of paper
	RED Flash Fast	Print head is hot. Printer will stop printing	Allow print head to cool off: restart print temperature recommended is 75°C
	Blue Flashing	Firmware upload via serial cable is completed successfully	Cycle printer power to continue

1.4 Attaching Shoulder Strap System

The Shoulder Strap System consists of two parts:

- A knob located on the back part of the printer just above the battery door
- A strap with click on connector

To attach the strap to the knob:

- Press on the two latches on the sides of the connector of the Shoulder Strap
- Slide the knob located on the back of the printer into the connector slot.
- Release the two latches on the connector. The printer is now secure.
- To release the printer, press in on the two latches on the connector and pull the knob clear of the slot.

Note: Do not force or pull the printer from the connector without pressing in on the two latches



FIGURE 5: KNOB CONNECTION AND QUICK CLIP

2 Loading Supplies

2.1 Adding Paper or Labels

The printer can print text, bar codes and graphics on thermal receipt paper. See [Section 5.2](#), "Supply Specifications," for the width, thickness requirements, and approved vendors. Follow these steps to load printer paper.

- Open the paper door by pressing the Paper Door Release Button on the top cover as indicated in [Figure 6](#).
- The door will open slightly; open the rest of the way as shown.



FIGURE 6: OPENING PAPER DOOR

Note: Paper Door Release button must be depressed when opening and closing paper door. Opening the paper door without pressing the Paper Release Button can cause damage to your printer.

- Place the paper supply roll into the paper supply well. Make sure the paper supply unwinds from the bottom as shown in [Figure 7](#).



FIGURE 7: INSTALLING PAPER

Note: Pull paper Roll Leader Out of Printer. Note direction of paper travel.

- Make sure some supply (2-3 inches) extends beyond the top of the paper supply well.
- While pressing Paper Door Release button, close paper door button.
- Press paper door down and let go off the Paper Door Release button.
- Turn on the printer by pressing Power button and test the paper advance function by

pressing the Paper Feed button. Verify that paper advances correctly

Note: Paper Supply Roll -- To prevent any possible damage to the print head mechanism, it is important to verify that the paper has not been fastened to the inside core in any way. The paper should be wound on the core in such a way that the end of the paper will unwind freely from the core. If fastened by tape or glue, the core will be pulled into the mechanism causing jamming and possible gear damage. Proper paper roll supplies are available from Datamax-O'Neil, see [Section 4.7](#) for listing of part numbers.

2.2 Tearing Paper

The printer's paper door acts as a tear bar. Pull one edge of the paper against the tear bar as indicated, then tear down and across against the tear bar to tear the paper. See [Figure 8](#) for details.



FIGURE 8: TEARING PAPER



The tear bar may have sharp edges

Note: Using the tear bar is the only way to tear the paper.

Note: Pulling up and pulling sideways without using the tear bar can cause a paper jam due to paper misalignment in the print head mechanism

3 Using the Printer

3.1 Initial Power-Up and Self-Test

Once the Battery is charged and the paper is loaded, an initial power up self-test can be performed:

- Press the <ON/OFF> switch once. This turns the printer on. LED #1 illuminates in green, blue or amber depending on the mode of communication.
 - The printer will stay ON until it is manually turned OFF.
 - If the printer is set for Bluetooth communication mode the printer will stay on all the time. Pressing the <ON/OFF> switch again will turn the printer off.
- Press the <ON/OFF> switch to turn the printer off. The LED turns off.
- To start the self-test, press and hold the <FEED> switch then press the <ON/OFF> switch.
- The printer will start printing the self-test message. Release the <FEED> and <ON/OFF> switches.
 - Press the <ON/OFF> or <FEED> switch to stop or cancel the self-test print.
 - The first few lines of self-test show the printer firmware version, the current printer settings (for example Bluetooth or USB mode) and a list of any optional or special features installed. [Figure 9](#) shows a printing sample.



**FIGURE 9:
SELF-TEST**

3.2 Connecting the Printer

- The APEX 4 printer supports USB and Bluetooth™ communication as default communication interfaces. WiFi communication and IrDA is also available as an optional feature.
- USB, Bluetooth™, and 802.11 communication settings can be changed via a DIP switch located on the control card. See Figure 10 for details.
- Printer drivers for Windows 95/98/NT/2000/ XP, Vista and Windows 7 are available from Datamax-O'Neil.

3.2.1 Dip Switches Location

- The DIP switch is located inside the battery compartment as illustrated above indicating the location of this switch. [Figure 10](#) shows the DIP switch location.
- The functions assigned to these switches are shown in [Table 3](#).



FIGURE 10: DIP SWITCH LOCATION

3.2.2 Setting Dip Switches

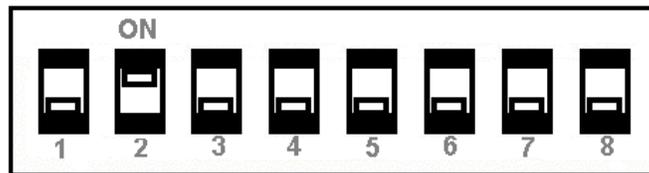


FIGURE 11: DIP SWITCH #2 SHOWN IN "ON" POSITION

Note: Be careful when changing dip switch settings. Carefully use a pointer on the dip switch you are going to change. DO NOT use a screw driver or apply excessive force.

3.2.3 Dip Switch Functions

Note: Programmer's refer to Developer Manual for more information

Table 3 – DIP Switch Setting

The APEX 4 printers support USB*¹, Bluetooth™, Serial and Wi-Fi communication. Settings can be changed via a DIP switch located on the battery compartment as shown in [Figure 10](#).

Communication Interface	Switch #								Notes
	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8	
RS232	OFF	OFF							Baud rate set by Dip switches 3,4 and 5
¹ IrDA	ON	OFF							Baud Rate can be negotiated up to the value specified through Dip switches 3,4 and 5
Bluetooth or 802.11g	OFF	ON							
N/A	ON	ON							Setting not supported
² USB	X	X			OFF	OFF	ON		
³ USB Bootloader	X	X			ON	OFF	ON		
⁴ Baud Rate			SW 3	SW 4	SW 5	RS232 and IrDA only			
115200			OFF	OFF	OFF				
57600			ON	OFF	OFF				
38400			OFF	ON	OFF				
19200			ON	ON	OFF				
14400			OFF	OFF	ON				
9600			ON	OFF	ON				Use for fixed IrDA
2400			OFF	ON	ON				
1200			ON	ON	ON				
Parity Bit						SW 6	SW 7		
Parity Enabled (ODD)						ON	ON		Does not apply for IrDA
Parity Enabled (EVEN)						ON	OFF		Does not apply for IrDA
Auto Power Save								SW 8	
Power Save Enabled								ON	Auto Power Down
Power Save Disabled								OFF	Manual On/Off

¹ If IrDA is not installed, printer will default to RS232 mode with baud rate 115200

²X stands for **Don't Care**: Dip Switch 7 will override 1 and 2

³Firmware Applies to Apex 4 - Version 1.10 or later.

⁴Baud Rate and Parity are applicable to RS232 and IrDA communication mode **ONLY**

Note: In order for changes to the dip switch configuration to take effect, the printer power must be reset. This action occurs automatically when the battery is removed to gain access to the dip switches.

3.3 Communications

- The APEX 4 Printer is able to support various modes of communication depending on the selected dip switch settings indicated in [Table 2](#). The standard configuration includes USB and Class 2 Bluetooth.
- Serial and 802.11b/g communications are available as an option.
- The printer can have Bluetooth™, 802.11b/g enabled or both communication modes at the same time.

3.4 USB Communication

The APEX 4 printer comes equipped with a USB 2.0 slave port. Everything that can be done through the RS-232 port can now be done through the USB port. You may print to or send commands to the printer from a PC or any equipment that can act as a USB master.

Dip switch setting

To enable USB, you must set the dip switches on the printer as below:

SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8
Any position	OFF	ON	Any position				

Compatible Software

The host and printer communicate through a method called the "Virtual Com Port", in which a software intermediary called the "driver" makes the USB connection look like a com port to the end-application. Consequently, all software that communicates through the com port is compatible.

Software Driver Installation

You must install the driver before you can use USB to print. Turn on the printer and connect it to the PC with a USB cable. If the driver has never been installed before, a dialog box will appear. Reply by selecting "Install from a list or specific location" and indicating the location of the file .inf supplied with the CD.

After installing the driver, review the Virtual Serial Port # created under:

- (Control Panel > System > Hardware Tab > Device Manager)
- Under the Ports (COM & LPT), you should see an entry named "**Datamax-O'Neil USB CDC Communications Port**" and the Port number assigned by Windows.

3.5 Bluetooth Communications

- For Bluetooth operation: Dip Switch #1 must be in the <OFF> position. Dip Switch #2 must be in the <ON> position.

Note: Adjust baud rate settings to match those of the Bluetooth module in your computing device.

- The printer can be powered up by pressing the power <ON/OFF> switch.
- Pressing the power <ON/OFF> switch again will turn the printer <OFF>.

Note: It is necessary for the mobile computing device you are using to discover and pairing the printer to establish Bluetooth communication.

Note: Systems Integrators: Refer to the Bluetooth manual provided with your mobile computer and the Bluetooth section of the APEX 4 Developer's Manual

3.6 802.11 Communications (Option)

- For 802.11g operation: Dip Switch #1 must be in the <OFF> position. Dip Switch #2 must be in the <ON> position.

Note: Adjust baud rate settings to match those of the 802.11 module in your computing device.

- The printer can be powered up by pressing the power <ON/OFF> switch.
- Pressing the power <ON/OFF> switch again will turn the printer <OFF>.

Note: It is necessary that the 802.11b/g settings match the settings of your wireless network (Infrastructure or Ad-Hoc mode). Refer to the instructions provided by the network administrator.

Note: Systems Integrators: Refer to the Developer's Manual for a detailed description of the default Wi-Fi settings of the APEX 4.

3.7 Serial RS232 (Option)

- All Dip Switches must be in the <OFF> position.
- The printer can be powered up by pressing the power <ON/OFF> switch.
- The standard communication speed is 115200 bps. Refer to [Table 2](#) for a description of the bit parity settings.
- Pressing the power switch again will turn the printer <OFF>.

3.7 Magnetic Stripe Reader (Option)

- The Magnetic Card Reader is a factory-installed option. This option requires special application software to read and process cards with a magnetic stripe, such as credit cards or driver's license

Note: Refer to the [Figure 12](#) if your printer is equipped with the optional magnetic stripe reader.

- Quickly swipe the card through the reader either left to right or right to left. The magnetic stripe must be facing toward the paper supply door while it is passed through the reader.
- Refer to [Table 4](#) for the description of the LED indicator Status.

Table 4 - Magnetic Card LED Indicator

LED Indicator	State	Status
Green	ON	Ready/waiting for card to be swiped
	OFF	Card not ready to be swiped or Good swipe – Card data read
Red	ON	Error reading card's data



FIGURE 12: USING THE MAGNETIC CARD READER

4 Printer Maintenance

4.1 Print Head Cleaning Instructions

You may need to clean the print head and platen roller after printing a number of rolls of paper, whenever you load new supplies or when you see voids in the printout. We recommend using the cleaning pen, part number 757150, which is included with the printer. To order more cleaning pens, please contact your distributor or Datamax-O'Neil.



Do not use sharp objects to clean the print head. This may damage the printer and require service.

- Open the paper door by pressing the Paper Door Release Button on the top cover as shown in [Figure 6](#). The paper supply door will pop up.
- Remove the paper roll.
- Use the cleaning pen or moisten a cotton swab with isopropyl alcohol and clean the print head
- Clean the platen roller with a dry cloth or small brush

Note: You can also use the cleaning pen or another cotton swab moistened with isopropyl alcohol. Turn the platen roller with your finger and run the cotton swab or dry cloth across it. Make sure the platen roller is clean all the way around.

- Use the cleaning pen or moisten another cotton swab with isopropyl alcohol. Rub the swab across the black mark sensor to remove any build-up
- Use the cleaning pen or moisten another cotton swab and rub the swab across the tear bar to remove any build-up

Note: You may experience dust build-up depending on the environment and the quality of the paper supply you use. If this occurs, use a can of compressed air to blow dust and paper debris out of the printer.

4.2 Charging the Printer Battery

The printer battery is charged using the wall mounted charger provided. Follow these steps to charge the battery pack.

Note: Make sure the printer and all LED's are OFF before charging battery.

- Plug the charger into an appropriate wall socket; then plug the charger line cord into the adapter jack on the side of the printer. Refers to [Figure 1](#) for details.
- The amber CHARGE LED will illuminate, to indicate battery is charging.
- The Charge LED turns off when battery cartridge is fully charged. It takes about 180 minutes to fast charge the battery cartridge.
- To insure full charge, printer should not be operated while the battery is charging.

4.2.1 Important Notes on Charging Batteries

- The model APEX 4 printers require an adapter output of 10 VDC/1.32 A.
- The battery Fast-Charge is initiated each time the power adapter is connected to the printer
- The fast-charge controller checks the battery's voltage and temperature before the start of the fast recharge process. If the battery voltage or the temperature is outside of the fast-charge limits, the charger defaults to trickle charge at C/10 or 70 mA rate
- Optional external battery chargers are available for Datamax-O'Neil batteries. Refer to [Section 4.7](#) "Printer Supplies" for detailed information.

4.2.2 Important Notes on Replacing Batteries

- Replace battery every 15 – 18 months or as directed by your IT department. Check for the correct Datamax-O'Neil part number for the battery and only user that part for your new battery. See [Section 4.7](#) for printer supplies.

	Risk of explosion if battery is replaced by an incorrect type
	Dispose of used batteries according to instructions in Section 4.5

4.3 Verifying Battery Charge State

We strongly recommend testing your printer before returning it to Datamax-O'Neil. Follow these steps to identify and correct any battery power problem that may be encountered. These will help to identify that the fault is with the printer and not some other part of your system.

To test the AC adapter:

- Use a multi meter and measure the output voltage. Output should be 10 VDC.
- Press the <ON/OFF> switch, and wait until all LED's are off.
- Insert the AC adapter plug into the printer. If the amber LED goes on, the battery is not fully charged but the charge circuit is functioning.
- The AC power portion of the circuit appears ok.

To test the DC power:

- Disconnect the AC Adapter once the battery has charged for 5 minutes or so.
- Press and hold the <FEED> switch, then press and release the <ON/OFF> switch and then release the <FEED> switch. The printer will print a "self test" receipt
- If the self test receipt is printed, the DC power is ok.

To test if the battery is accepting charge:

- Press <ON/OFF> switch and wait until all LED's are off
- Plug the AC power adapter into the printer. Press <ON>; the green LED is illuminated and after about 20 seconds the LED should go off
- If the amber LED is on, this will continue on through this test indicating that the battery is accepting a charge and that the charge circuit is ok. At the end of a 180-minute charge cycle, the LED will go off.

4.4 Battery and Safety Information

The printer is powered by a 7.4V Li-Ion battery cartridge.

- Charging time in the printer is approximately 3.0 hours.
- Take the battery out of printer if storing the printer for long periods of time.
- The battery storage temperature is 40°F to 104°F (4°C to 40°C). Do not store a fully charged battery at temperatures greater than 104°F (40°C) for long periods – the battery may permanently lose charge capacity.
- The recommended temperature for charging is between 68°F (20°C) to 77°F (25°C).
- Be sure to use a fully charged battery before long or battery intensive printing sessions.

Certain operations (for example, printing receipts with a lot of bar codes and graphics) drain the battery more quickly.

- Dispose according to your local regulations. **Do not throw in trash.**

	<p>Do not disassemble, short circuit, heat above 80°C, or incinerate: The battery may explode.</p>
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4.5 Recycling Batteries

The Rechargeable Battery Recycling Corporation (RBRC) is a non-profit organization created to promote recycling of rechargeable batteries. For more information about how to recycle batteries in your area, visit <http://www.rbrc.org>

4.6 Troubleshooting

Problem	Action
Does not feed paper or has a paper jam	<ul style="list-style-type: none"> • Remove any jammed supply Reload paper supply
Does not print	Check or replace the printer's battery Make sure the paper supply is loaded correctly, not backwards. Verify communication between the host device and the printer by disconnecting the communication cable and performing a printer self test.
Light printing	<ul style="list-style-type: none"> • Check or recharge the battery Adjust the print contrast through print application.
Voids in printing	Clean the print head following the cleaning instruction listed in the Section 4.1 .
Red (Error) LED on	<ul style="list-style-type: none"> • Check that paper roll is not out and paper door is closed. • Error reading MCR. After extended printing, print head may be hot; printer will pause before resuming printing.

If the problem is not identified following the troubleshooting guide, contact Datamax-O'Neil Technical Support. Support numbers and Email addresses are listed at [Section 6](#).

	<p>Other than routine cleaning and other maintenance described in Section 4, the printer is not intended to be serviced by the user. It must be returned to an Authorized Service Center. Under no circumstances should the user attempt to take the printer apart</p>
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4.7 Printer Supplies

Part Number	Description
78928U1-3	Apex 4 with USB, Class 2 Bluetooth®
78928U1R-3	Apex 4 with USB, MCR, Class 2 Bluetooth®
78928U1-2	Apex 4 with USB, 802.11b/g
78928U1R-2	Apex 4 with USB, MCR, 802.11b/g
157261	Multi-Plug Battery Charger Adapter (US, UK, Euro & Australian Plug)
756984	IP54 Certified Environmental Case – No MCR
756998-2	Belt Loop System
740853-104	Spare Paper, 103' per roll
770183-200	Thermal Print Head Cleaning Pen
757351	Shoulder Strap System
767400-1	Battery Charger (2 Bay) Li-Ion, 120V
767400-2	Battery Charger (2 Bay) Li-Ion, 220V
767400-4	Battery Charger (2 Bay) Li-Ion, 240V
7A1000014-1	Li-Ion Battery Cartridge: 7.4 VDC – 2200 mAh
5892USB	USB Cable 2.0
Available from Datamax-O'Neil at www.datamax-oneil.com	Windows 95/98/NT/2000/Vista and Windows 7 Drivers

5 Specifications

5.1 Printer Specifications (subject to change without notice)

Dimensions	7.4"L x 6.5"W x 2.5"H (191L x166W x 63H mm)
Weight	22 ounces (648g)
Shipping weight	3.3 lbs. (1.5kg)
Power	Lithium-Ion battery (7.4V; 2250 mAh)
Operating Temp. Limits	14 to 122°F (-10 to 50°C)
Storage Temp. Limits	-4 to 140°F (-20C to 60°C)
Operating Humidity Limits	20% to 85% non-condensing
Storage Humidity Limits	5% to 95% non-condensing
Print Width	4.1" (104mm) , 203 dpi (8 dots per mm)
Printing Method	Thermal Direct
Print Speed	Up to 3.0 inches/sec. @ 7.2v to ph.
Fonts: (Bitmap)	3 Resident Font Tables, 6 Downloadable Font Tables, Bold Font and Proportional Font
Supported Bar Codes	Codabar, Code 39, UCC/EAN – 128, UPC/EAN/JAN, Interleaved 2 of 5, Code 128, PDF 417
Memory	Flash: 4MB SRAM: 2MB
Charging Time	Approximately 180 minutes
Communications	USB, Bluetooth, 802.11b

5.2 Supply Specifications

Supplies	Thermal direct receipt paper/ tag stock
Supply Thickness	2.2 to 6 mils (receipt paper/ tag stock)
Supply Width	4.375 inches (111 mm)
Supply Length	1 Roll of receipt paper is ~100 ft. (30km.)
Supply Sensing	Black mark (on face of supply)
Paper Roll Diameter	Outside: 2.0 inches (51 mm), Inside: 0.40 inches (10 mm)
Approved Vendors	Kansaki: P300, P310, P350, P354, P390, P394, P530UV, TO281CA, OP200, TO381N Jujo: TF-50KS-E2C Honshu: FH65BV-3

5.3 Regulatory Notes

5.3.1 FCC Part 15 Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For Bluetooth equipped printers, please note:

- The printer contains an OEM Serial Port Adapter from connectBlue with FCC ID: PVH070101. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - (1) This device may not cause harmful interference,
 - (2) This device must accept any interference received, including interference that may cause undesired operation."

5.3.2 Warranty

This printer is warranted by Datamax-O'Neil to be free of defects in parts and workmanship for a period of one year from date of shipment. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Datamax-O'Neil specifically disclaims any implied warranties of merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, special, incidental or consequential damages. Datamax-O'Neil's total liability is limited to the repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral is expressed or implied.

5.3.3 Warranty and/or Repair Service

A Return Authorization number must be issued before a unit is returned to Datamax-O'Neil for repair. Once a unit has been properly returned to Datamax-O'Neil (note: the customer is responsible for ensuring proper packing to prevent damage in transit as well as the shipping costs back to Datamax-O'Neil), it will be repaired (estimates are provided first if the repair cost is estimated above \$100.00) and returned via UPS ground. The customer may elect a faster mode of transport at their cost.

6 Customer Support

Datamax-O'Neil Americas

Orlando, FL USA

Monday - Friday

8:00am - 6:00pm EST

Tel: 407-523-5540

Fax: 407-523-5542

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Datamax-O'Neil EMEA

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