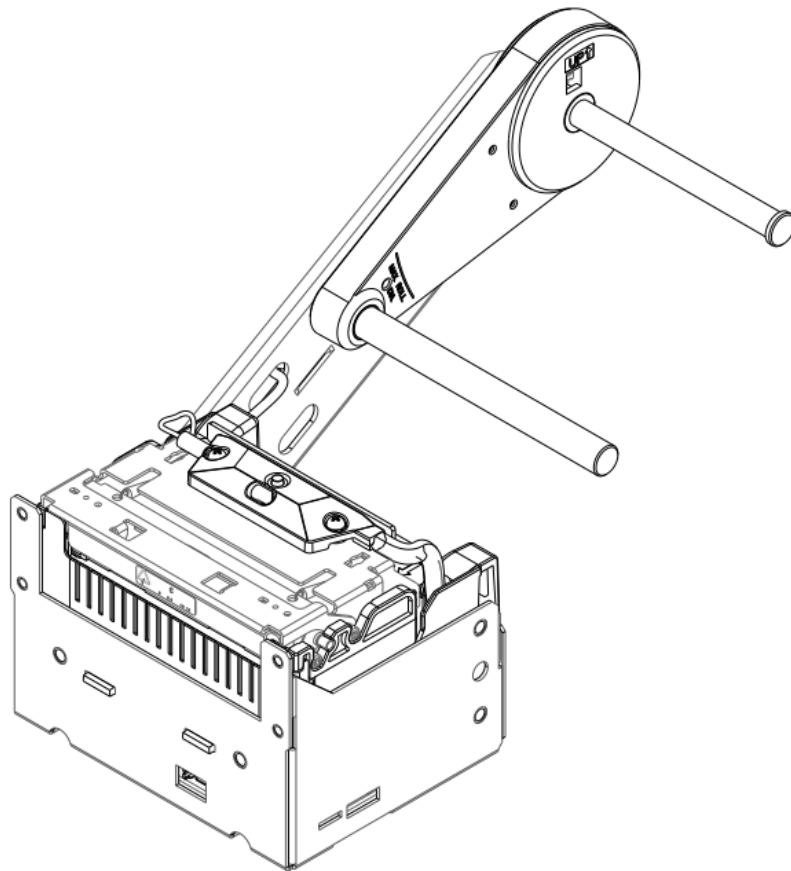


NANOPTIX

ORiZONTM NEXTGEN

Owner's Manual



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Legal Notices

Disclaimer

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Federal Communications Commission (FCC) Radio Frequency Interference Statement

Warning

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Information to the User

This equipment must be installed and used in strict accordance with the manufacturer's instructions. However, there is no guarantee that interference to radio communications will not occur in a particular commercial installation. If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to contact Nanoptix Inc. immediately.

Nanoptix Inc. is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Nanoptix Inc. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

In order to ensure compliance with the Product Safety, ICES, FCC and CE marking requirements, you must use the power supply, power cord, and interface cable which were shipped with this product or which meet the following parameters:

Power Supply

UL Listed power supply with standard 60Hz-50Hz, 100-240VAC input and 24VDC output equipped with AC line filtering, over-current and short-circuit protection.

Use of this product with a power supply other than the Nanoptix Inc. power supply will require you to test the power supply and Nanoptix Inc. printer for FCC and CE mark certification.

Communication Interface Cable

An approved Nanoptix interface cable must be used with this product. Using a cable other than Nanoptix approved product will require that you test the cable with the Nanoptix Inc. printer and your system for FCC and CE mark certification.

Power Cord

A UL listed, detachable power cord must be used. A power cord with Type SVT marking must be used. For applications outside North America, power cords that meet the particular country's certification and application requirements should be used.

Use of a power cord other than described here may result in a violation of safety certifications that is in force in the country of use.

Industry Canada (IC)

Radio Frequency Interference Statement

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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1. About the Printer

1.1 Description of Printer

The Nanoptix Orizon NextGen thermal printer is extremely fast, quiet, and very reliable. With thermal printing technology, there is no ribbon cassette to change, and paper loading is extremely simple.

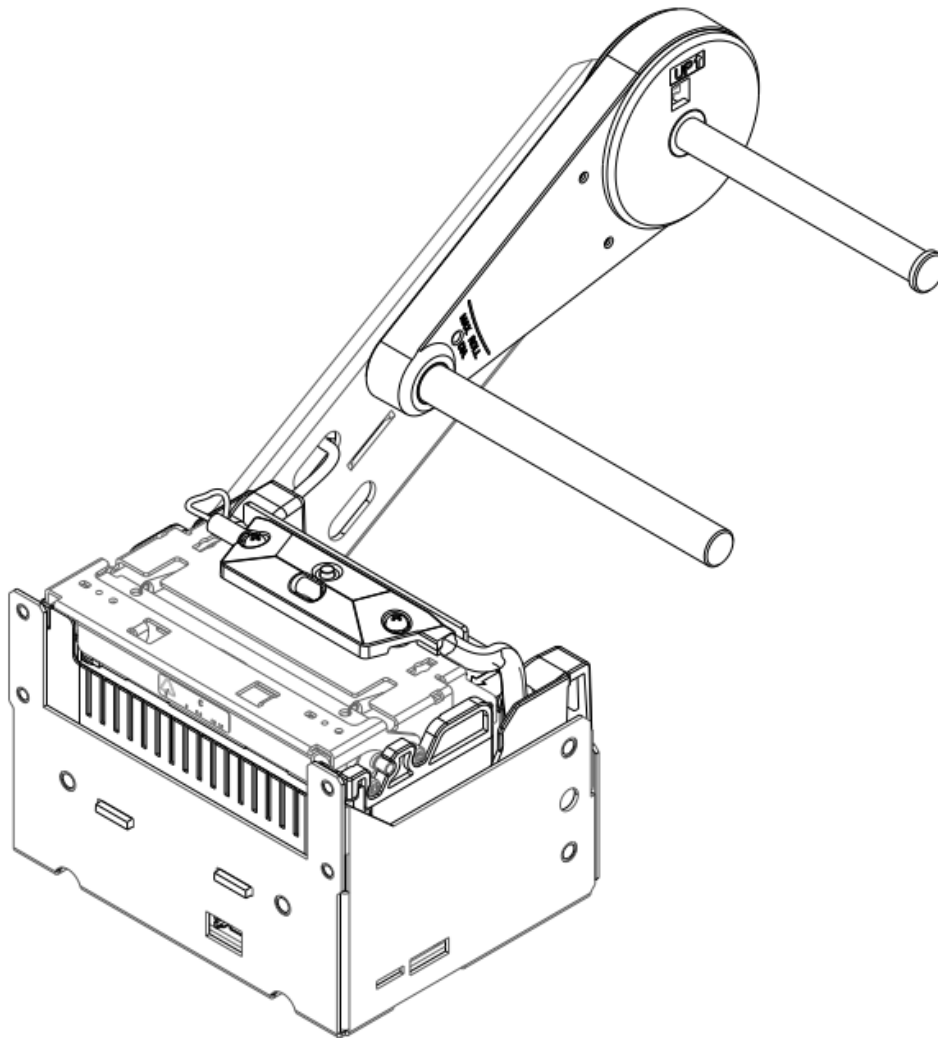


Figure 1: Orizon NextGen Printer

1.2 Presenter Available

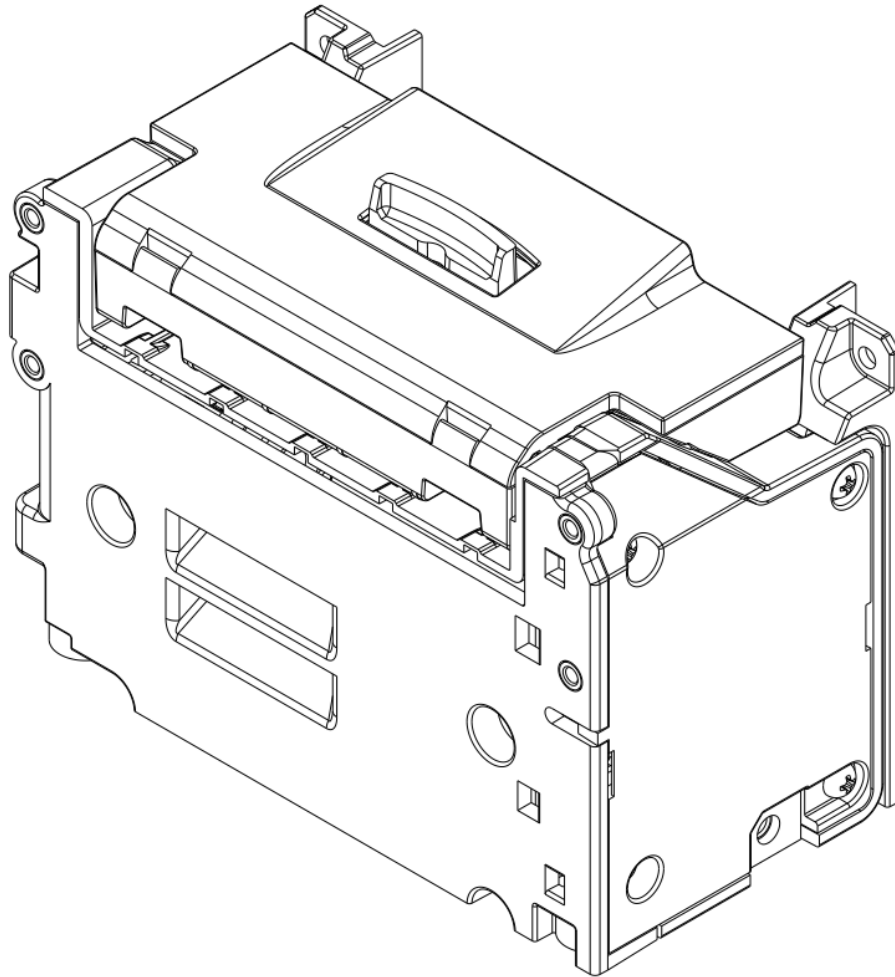


Figure 2: Orizon NextGen Optional Presenter

The Orizon NextGen has an optional presenter and retractor that mounts to the front of the printer. It operates independently from the printer, allowing tickets to be delivered after the entire print is complete. In the event that the ticket is not taken within a predetermined amount of time, it is withdrawn and dropped from the bottom of the presenter.

The addition of the presenter increases the minimum ticket length from 2.55" (65mm) to 3.35" (85mm)

1.3 General specifications

Print Method	Direct Thermal
Resolution	8 dot/mm (203 dpi)
Paper Width	83 ⁺⁰ ₋₁ mm, 80 ⁺⁰ ₋₁ mm, 60 ⁺⁰ ₋₁ mm, 58 ⁺⁰ ₋₁ mm
Max Roll Diameter	150 mm
Operating Temperature	0° to 50° C
Storage Temperature	-30° C to +70° C
Operating Relative Humidity	5% to 90% RH at 50C (non-condensing)
Communication Interface Options	2 Bidirectional RS-232C 2 USB 2.0 high-speed host ports 1 USB 2.0 high-speed device ports HDMI output port, 720p Ethernet Port Micro SD Card Reader
Memory/Firmware	32 Gbit Flash, 4 Gbit Ram & 16 kbit EEPROM
Resident Character Sets	Arial Bold (6 sizes) Note: Other Character sets can be programmed quickly
Integrated Bar Codes	UPC-A, UPC-E, Interleaved 2 of 5, 3 of 9, Code 128, EAN 8, EAN 13. Note: Other Bar Codes can be programmed quickly
Speed	Up to 250 mm/second
Human Interface	Auto-feed paper loading, status LED, paper feed button
Dimensions	Height x Width x Depth (mm) 144 x 125 x 252 (Without Paper Roll) 144 x 125 x 310 (With Paper Roll) 144 x 125 x 313 mm (Printer + Presenter) 144 x 125 x 371 mm (With 152mm, 6", paper roll)
Weight	1.111 Kg

Table 1: Specification

Type	Function
USB Type mini B	USB communication
2 pin "Molex mini fit"	Power
USB Type-A x2	USB communication & Firmware Update
RJ45	Ethernet Communication
12 Pin Micro-Fit Jr	Serial Communication & Debug
HDMI	Video Out
8 pin JST	Bezel Out

Table 2: Specification

1.4 Spindle Arm Configurations

The Orizon NextGen can be mounted in various positions. The arms position can be selected by removing the mounting screws, repositioning the arm, and reinstalling the screws.

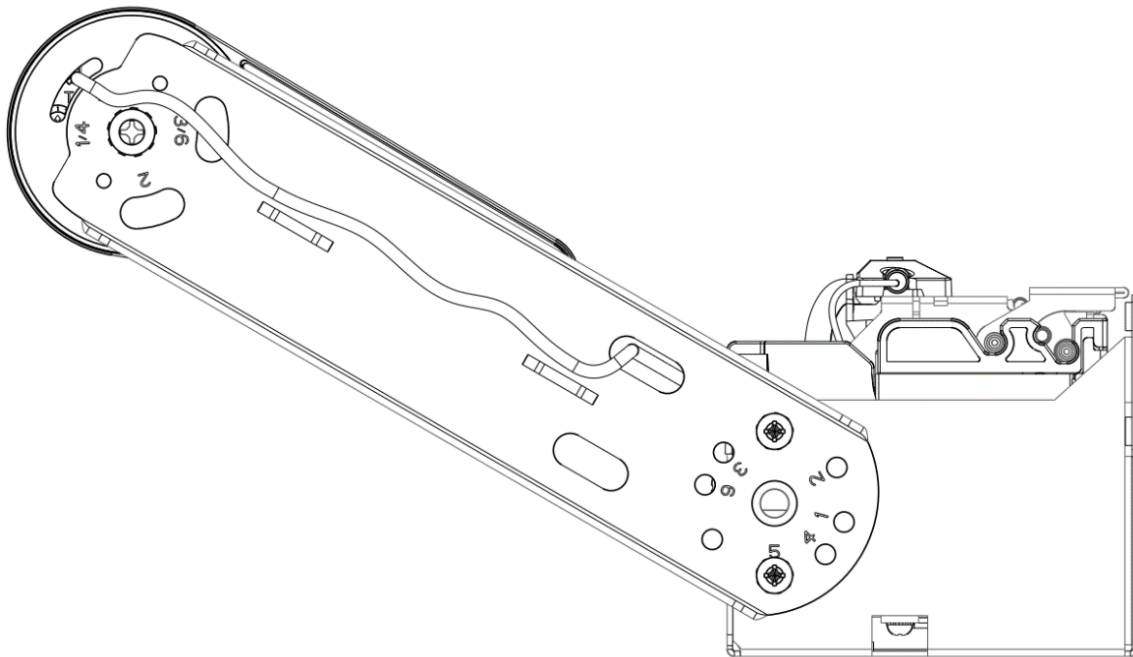


Figure 3: Spindle Arm in Default Position

1.5 Printer Controls

To reset Printer

In case of a fault condition, the *Orizon NextGen* thermal printer can be reset by disconnecting and reconnecting the printer's power connector. Once the printer is reconnected, the printer goes through a startup routine and resets itself.

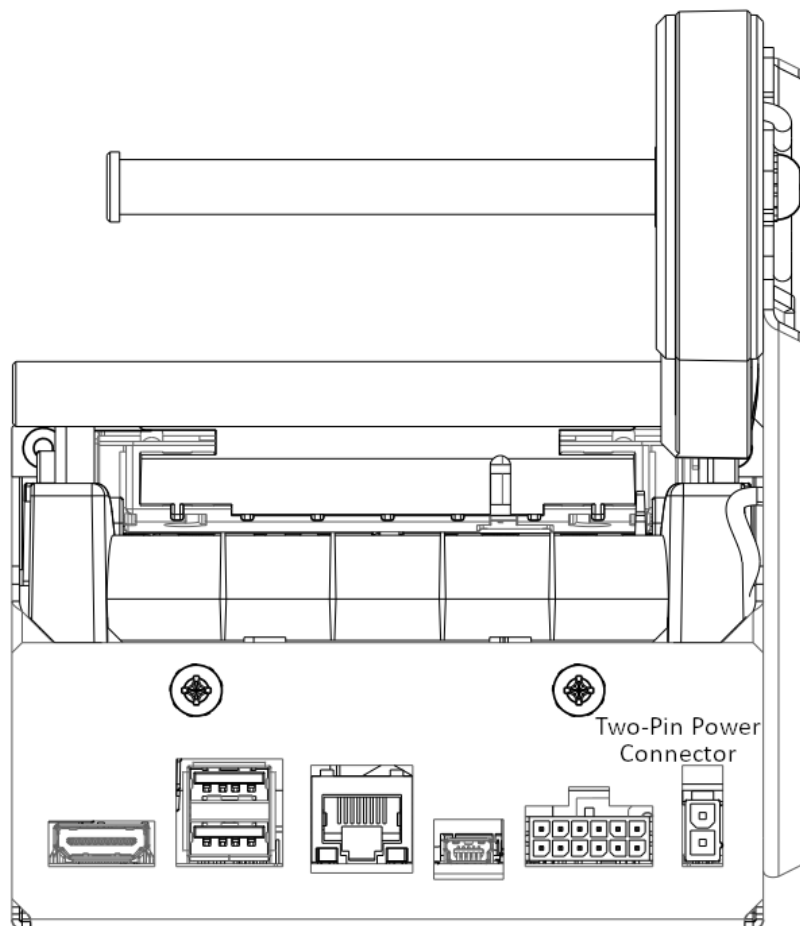


Figure 4: Printer Rear View

1.6 Paper Feed Button & Light Emitting Diode (LED)

Use the Paper Feed Button to advance the paper.
The LED on the top of the printing mechanism displays the printer's status (See section 1.8: Table 3)

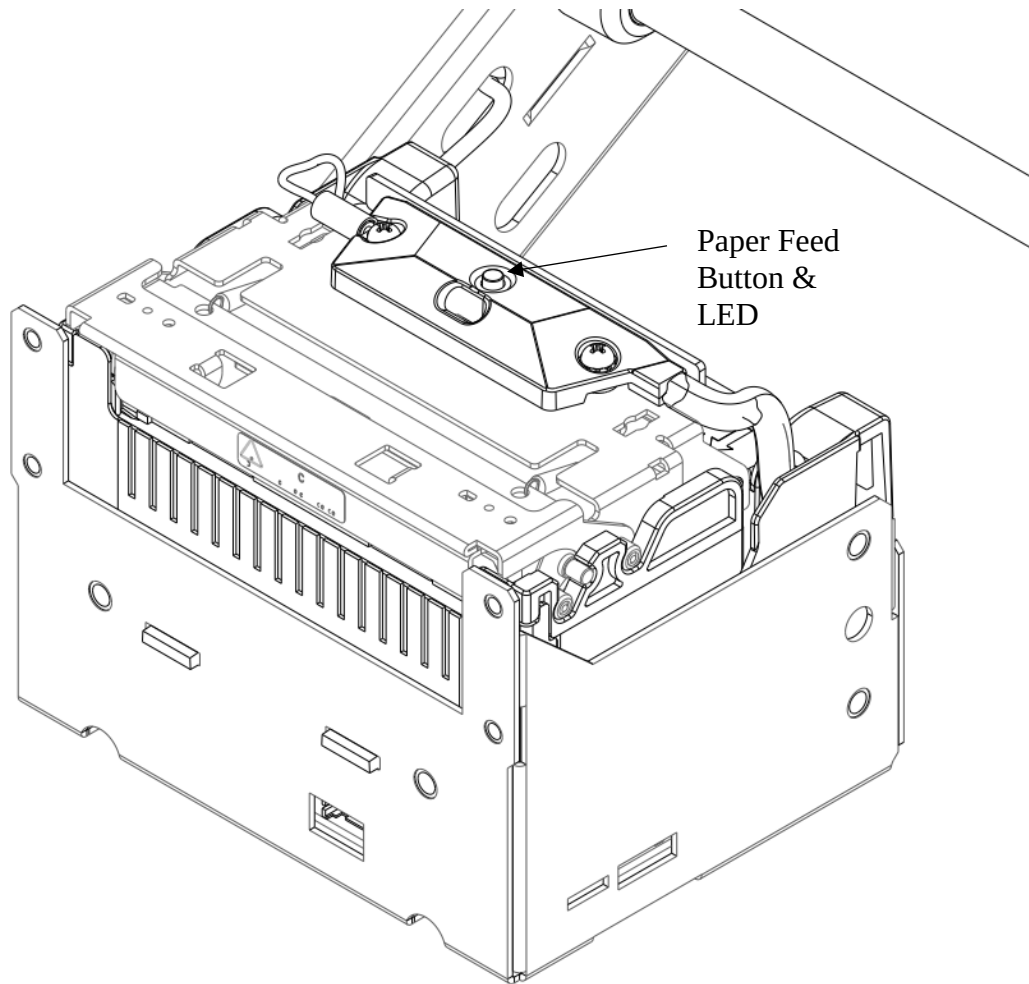


Figure 5: Paper Feed Button & Status Indicator LEDs

1.7 Changing Paper

Caution: Do not attempt to operate the printer if it runs out of paper. The printer will report paper out, but it may continue to accept data from the host computer. Because the printer cannot print any transactions, the data will be lost.

1. Remove the used roll and tear off the end of the new roll so that the leading edge is loose.

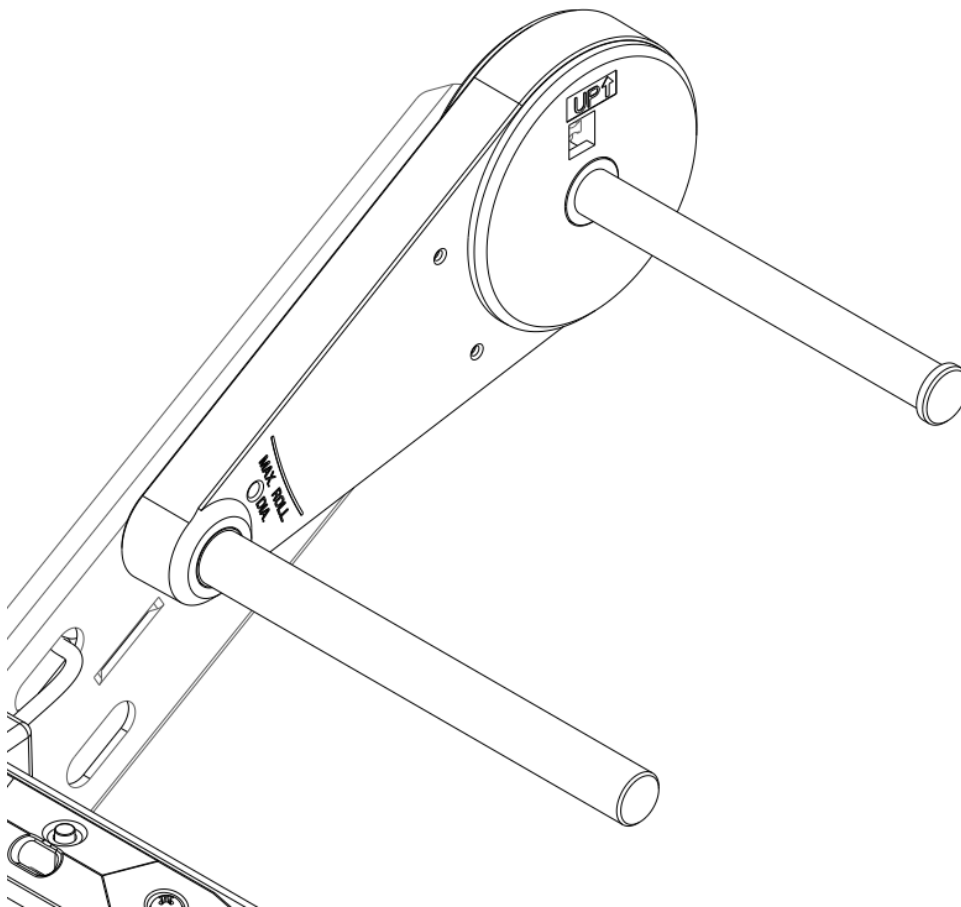


Figure 6: Spindle and Tension Arm

2. Place the new paper roll on the spindle and feed the paper under the tension arm into the paper path, once far enough, the paper out switch will activate the feeder motor which advances the paper to a predetermined length.

Caution: The paper must be unwound from the top of the roll, thermal side out – Figure 6. Otherwise, the printer may not print or the paper may jam.

Note: In the event of a paper jam follow the steps below:

- Unlatch the print head assembly by listing the bar located at the front of the mechanism (pictured below).
- Remove any paper or obstructions.
- Close the print mechanism and re-feed the paper.



1.8 Testing the Printer

Run this test to check the printer. The test prints and cuts a resident test ticket. Verify this ticket to ensure the unit is printing and operating correctly.

To print the test ticket, power-on the printer while pressing and holding the Paper Feed Button (Figure 5) for approximately 3 seconds. A test ticket will be printed approximately 5 seconds later. Example:

```

Model:                ORIZON
Firmware:             ONG – 2.00A
CRC 16:               0xC446
SETTINGS
Protocol:            NTL
Interface:           TCP
Print Mode:          Page
Speed:               200mm/s
Burn Time:           200us
Motor Current:        60%
Voltage:             24.1 Volts
Temperature:          22 Celsius
IP Address:           NOT SET:9100
Subnet Mask:          NOT SET
SYSTEM RESOURCES
FLASH Used: 00000      Free:65535
LIBRARY INVENTORY
Tpl: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D
Rgn: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E
      F, G, I, J, K, L, N, O, P, Q, R, S, T, U, Z,
      X, a, b, c, d, e, f, g, I, j, k, l, m, n, o
      P, q, y, Y, ?, <, >
Gfx:
MANUFACTURING INFORMATION
Board:                209014-0001R-01
Board ID:              HG00001
Printer ID:            ON00001
Product ID:            ON00001
Mechanism ID:          A1XXXXX
MAC Address:           04:A3:16:AC:08:C3
Date Code:             20191112
*S | 0 | ONG – 1.00A | ` | @ | @ | @ | A | P | *
    
```

Figure 7: Testing Printer

When powered on, the paper feed button can also be pressed and held for several seconds to print a performance report including the number of prints, errors, firmware, on time, etc...

1.9 Troubleshooting the Printer

The printer is simple and generally trouble-free, but from time to time minor problems may occur. Follow these procedures to determine the cause and resolution of any problems the printer may be having. If the procedures in this section do not correct the problem, contact a service representative.

Printer Light Emitting Diode (LED)

Condition	LED Status (Green)	LED Status (Red)
Unit ready	ON	OFF
Unit is in Reset or Booting	ON	OFF
Unit in standby (powered off)	OFF	OFF
Paper Out	OFF	ON
Door Open	Fast Blink	ON
Paper Jam	ON	Fast Blink
Missing Black Index Mark	ON	Slow Blink
Temperature Error	OFF	Medium Blink
Voltage Error	OFF	Slow Blink
Print Head Error	OFF	Fast Blink

Table 3: Troubleshooting With Status LED

Printing Problems

Problem	Possible Causes	What to Do
Receipt does not come out all the way.	Paper is jammed.	Press latch to open door, inspect the cutter, and clear any jammed paper.
Printer starts to print, but stops while the receipt is being printed.	Paper is jammed.	Press latch to open door, inspect the cutter, and clear any jammed paper.
Receipt is not cut.	Paper is jammed.	Press latch to open door, inspect the cutter, and clear any jammed paper.
	The printer is not configured for a cutter.	Contact your authorized service representative.
Print is light or spotty.	Paper roll loaded incorrectly.	Check that the paper is loaded properly.
	Thermal printhead is dirty.	Use recommended thermal receipt paper.
Vertical column of ticket is missing.	This indicates a serious problem with the printer electronics.	Contact your authorized service representative.
One side of receipt is missing.	This indicates a serious problem with the printer electronics.	Contact your authorized service representative.

Table 4: Troubleshooting Printing Problems

Printer Does Not Work

Problem	Possible Causes	What to Do
Printer Does Not Function When Turned On.	Printer not plugged in.	Check that printer cables are properly connected on both ends.
		Check that the host or power supply is switched on. Check Printer LED.
	Door not fully closed.	Close the door.

Table 5: Printer Does Not Work

2. Media and Supplies Guide

2.1 Thermal Paper Specifications

The printer requires qualified thermal paper with the following dimensions:

Paper roll width	83 ⁺⁰ ₋₁ mm, 80 ⁺⁰ ₋₁ mm, 60 ⁺⁰ ₋₁ mm, 58 ⁺⁰ ₋₁ mm
Paper roll diameter (max)	152.4 mm (6 in.)
Paper thickness (max)	155 micrometers (6.1 mils)
Core Internal diameter (max)	25.4 mm (1 in.)
Core Thickness (max)	3.175 mm (1/8 in.)
Minimum Ticket Length	65mm (2.55 in)
Minimum Ticket Length (Presenter)	85mm (3.35 in)

Table 6: Thermal Paper Dimensions

The paper must not be attached to the core. If Top of Form Option is installed, paper with a colored stripe at the end can be used to indicate that the paper is running low.

Under certain conditions, colored paper or pre-printing on the thermal side of the paper may affect the presenter's sensors and lead to faulty reporting of the paper jam status.

Nanoptix recommends the use of white thermal paper with no pre-printing on the thermal side for reliable operation.

2.2 Ordering Thermal Paper

Manufacturer	Numbers
Appvion Specialty Papers 825 E Wisconsin Avenue P.O. Box 359 Appleton, WI 54912-0359	Tel: 866-315-0467 Toll-free: 800-922-1729
Kanzaki Specialty Papers (USA) 1350 Main Street Springfield, MA 01103	1.888.KANZAKI Tel: 888-526-9254 Fax: 413-731-8864

Table 7: Ordering Thermal Paper

Note: Contact your Nanoptix sales representative for more information from our toll-free line at 1-888-983-3030.

2.3 Ordering Miscellaneous Supplies

Ordering Power Supply and Power Cords

Please specify the *Nanoptix part number* when ordering power cords.

Part Number	Part Description
102080-0000R	Power Cord -North America (standard C13 "square" inlet connector)
102080-0001R	Power Cord -Continental Europe (standard C13 "square" inlet connector)
213005-0011R	24V, 60W Power Supply (2 Pin Molex connector) GDS Standard

Table 8: Power Cords / Power Supply Part Numbers

Ordering Communication Cables

Please specify the *Nanoptix part number* when ordering communication cables.

Part Number	Part Description
102085-0002R	Mini USB communication Cable 6ft.
210093-0002R	Microfit Receptacle 2x6pos to DB9S.

Table 9: Communication Cables Part Numbers

Contact your Nanoptix sales representative for more information from our toll-free line at 1-888-983-3030.

2.4 Communication Cables Pin-Out

Your printer uses industry-standard connections for Serial, USB and is therefore compatible with standard printers and hosts on the market.

Please note that due to the power requirements of thermal printers, the unit will not function with the USB cable alone. The power cord must be connected to the printer.

Several connector options are available depending on the applications including a DB9 serial connector.

The table below details the connection pin-out for the Micro-fit Jr. 2x6 serial interface on the printer side.

Pin#	Signal	Port
1	Signal Ground 1	1
2	RXD1	1
3	RTS2	2
4	RXD2	2
5	CTS1	1
6	TXD Debug (3.3V)	0
7	TXD1	1
8	RTS1	1
9	TXD2	2
10	Signal Ground 2	2
11	Signal Ground Debug	0
12	RXD Debug (3.3V)	0

Table 10: Orizon NextGen Serial Pinout

2.5 Communicating with the Printer

Please contact your sales representative if you require information communicating with the Orizon NextGen. The printer functions by default using the latest Nanoptix Windows Driver or the "Nanoptix Programming Guide" which will list the Nanoptix ESC/P commands.

3. Printer Disassembly



Use ESD protection (such as a wrist strap)
anytime a PCB is exposed



3.1 Part List

ITEM #	PART NUMBER	DESCRIPTION	QTY
1	100041-1163R	SCREW, SEMS, M3, 5MM	2
2	100041-1164R	SCREW, SEMS, M3, 6MM	8
3	100041-1165R	SCREW, SEMS, M3, 8MM	1
4	100041-1243R	SCREW, SEMS, M4, 6MM	4
5	100041-1403R	SCREW, SEMS, M6, 12MM	1
6	100041-1406R	SCREW, SEMS, M6, 20MM	1
7	208001-0014R	LED BOARD, BEZEL, BLUE	1
8	208068-0001R	PAPER FEED BOARD	1
9	208070-0001R	SENSOR, PAPER LOW	1
10	209014-0001R	MAIN BOARD, ORIZON NEXTGEN	1
11	210032-0010R	HARNESS, PAPER LOW, 265MM	1
12	210056-0009R	HARNESS, GROUND, RING TO FLAG, 145MM	1
13	210059-0011R	HARNESS, CAPM347 TPH TO MAIN BOARD, 250MM	1
14	210088-0004R	HARNESS, BEZEL LED, 140MM	1
15	210092-0004R	HARNESS, PAPER FEED, 140MM	1
16	270040-0001R	PRINT MECH, SEIKO CAPM347, STANDARD	1
17	300281-0001R	WRAPPER, FRAME, ORIZON	1
18	300288-0001R	ARM, SPINDLE	1
19	300289-0001R	GROUNDING TAB	1
20	300298-0001R	SPRING, TAKEUP	1
21-1	300309-0001R	SPINDLE, 80MM & 82.5MM, ORIZON	1
21-2	300309-0003R	SPINDLE, 58MM & 60MM, ORIZON	1
22	300310-0001R	SPINDLE, TAKEUP, ORIZON	1
23-1	310085-0002R	GUIDE, PAPER, TOP, CAPM347, NARROW	1
23-2	310085-0004R	GUIDE, PAPER, TOP, CAPM347, 58MM	1
23-3	310085-0005R	GUIDE, PAPER, TOP, CAPM347, 60MM	1
24	310142-0001R	BEZEL, BODY, 3-PIECE, BLUE	1
25	310143-0001R	BEZEL, LOWER INSERT, BLUE	1
26	310144-0001R	BEZEL, UPPER INSERT, BLUE	1
27	310148-0001R	FRAME, ORIZON	1
28	310149-0001R	COVER, PAPER FEED	1
29	310163-0001R	BASE, TAKEUP	1
30	310164-0001R	HUB, TAKEUP	1
31	310165-0001R	ARM, TAKEUP	1
32	310168-0001R	COVER, TAKEUP	1
33-1	310169-0001R	GUIDE, PAPER, BOTTOM, 58MM	1
33-2	310169-0002R	GUIDE, PAPER, BOTTOM, 60MM	1
33-3	310169-0003R	GUIDE, PAPER, BOTTOM, 80MM	1
33-4	310169-0004R	GUIDE, PAPER, BOTTOM, 82.5MM	1
34	340300-0306R	SCREW, PLASTITE, M3, 6MM	2
35	340300-0308R	SCREW, PLASTITE, M3, 8MM	2
36	340302-2205R	SCREW, TAPPING, M2.2, 5MM	1
37	340302-2506R	SCREW, TAPPING, M2.5, 6MM	5
38	355100-0001R	BRUSH, ANTI-STATIC, 0.4IN X0.96IN	1
39	100068-0001R	TIE-WRAP, BLACK, 4IN, NYLON	5

3.2 Exploded View

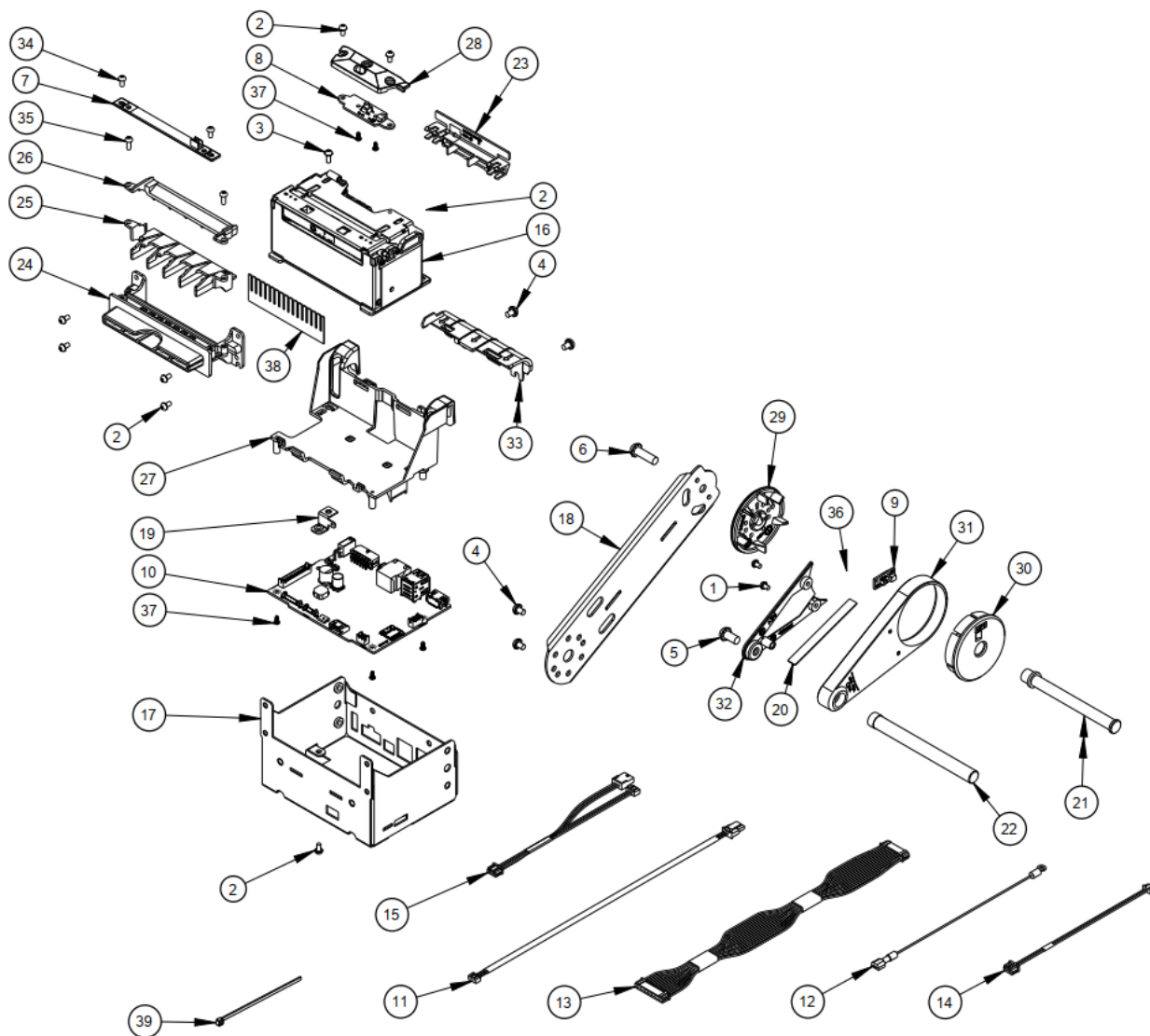


Figure 8: Exploded View

4. Mechanical Drawings (All Values in Millimeters)

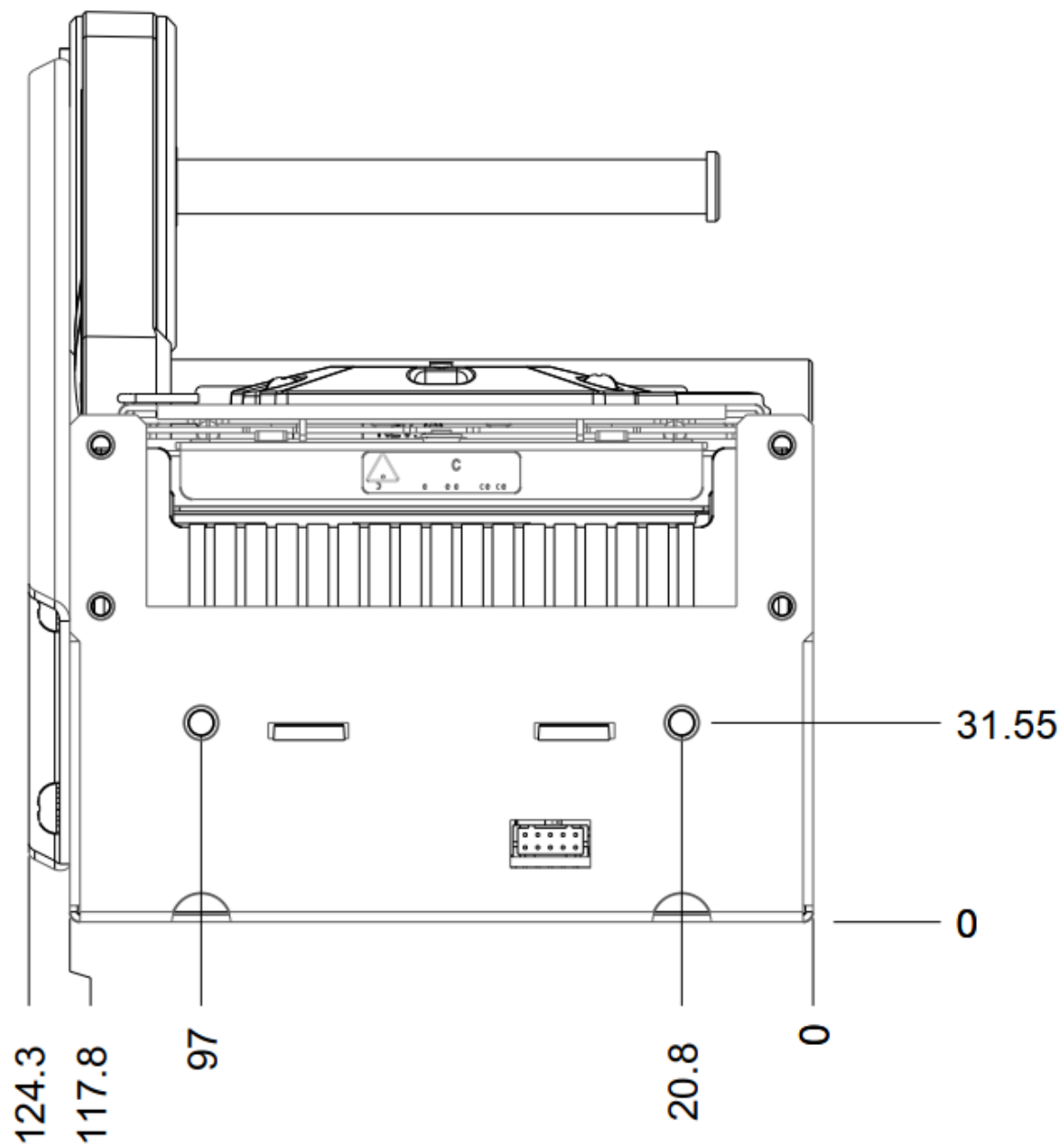


Figure 9: Mechanical Dimensions - Front View

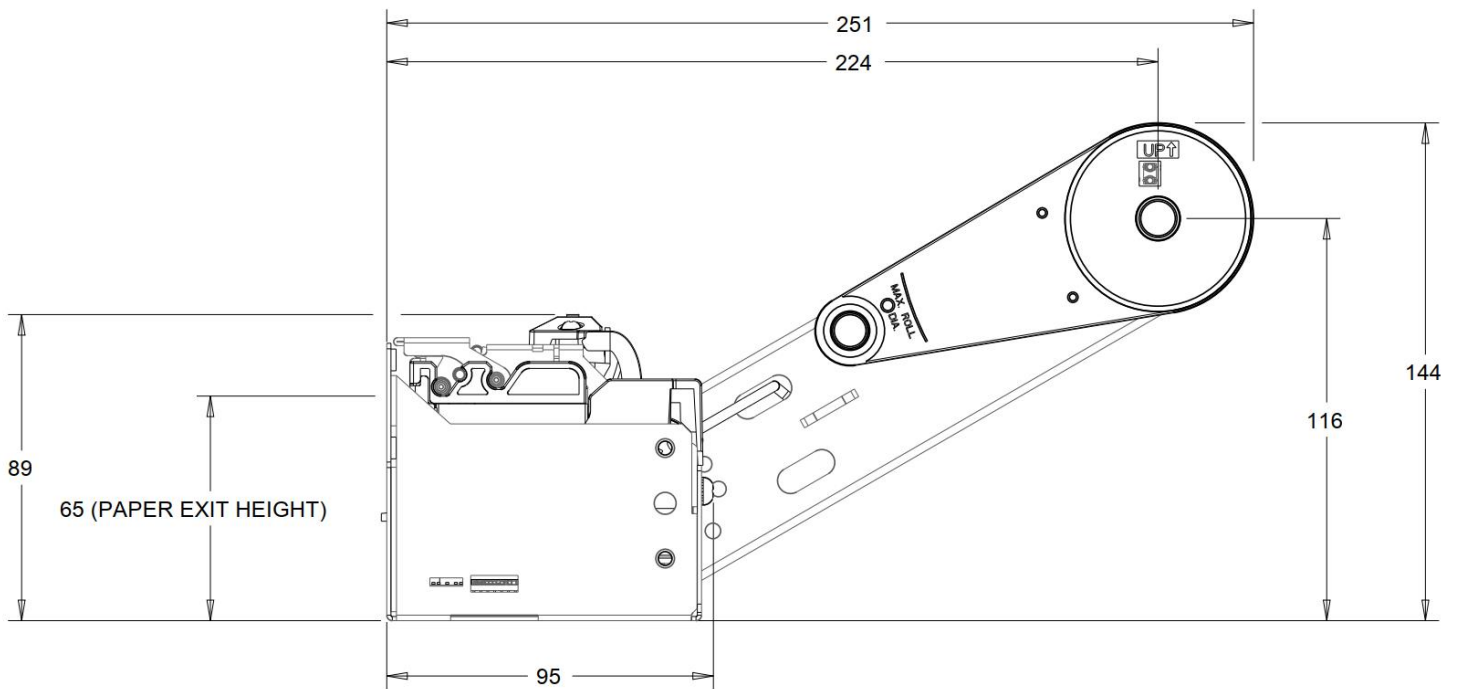


Figure 10: Mechanical Dimensions - Side View

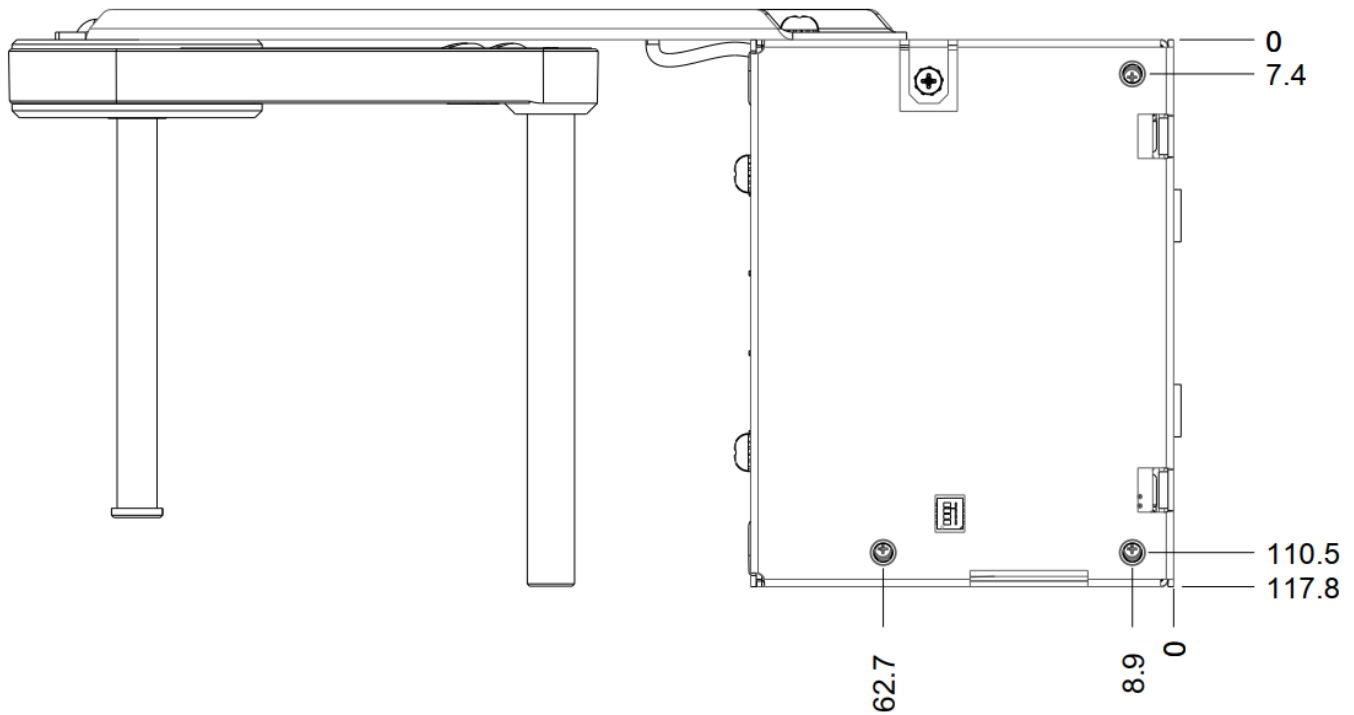


Figure 11: Mechanical Dimensions - Bottom View

5. Printer Maintenance Instructions

Note: Under normal operating conditions, the maximum interval for cleaning the Nanoptix Orizon NextGen printer is 3 months or 5km of paper printed, whichever is reached first. Do not clean the head unit immediately after printing.

1. Unlatch the print mech pulling up on the top front portion of the print mech. Unlatch the roller assembly by pushing up on the top green lever.
2. The top of form sensor is located opposite the thermal head platform (Figure 12). The sensor can be cleaned with a cotton swab and isopropyl alcohol. Wait for the alcohol to dry before closing.

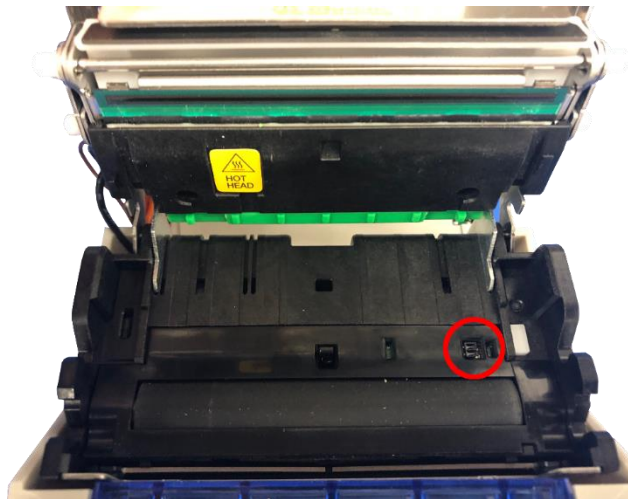


Figure 12: Top of Form Sensors

3. The paper low sensor is located in the Orizon NextGen arm spindle. Unload the paper roll from the printer and gently clean the sensor with a cotton swab and isopropyl alcohol.

6. Service & Support

6.1 Returning printers back to Nanoptix for repairs (RMA)

- Send repair approval request to Nanoptix Inc. which should include:
 - Printer model #
 - Serial #
 - Brief problem description
- Ship defective products to Nanoptix Inc.
- Ensure that each package being sent is identified by the specified RMA number

NOTE: Make sure to place a blank ticket or a piece of paper between the thermal print head and roller for shipping and storage.

United States of America Canada and International

RMA # XXXXXX

Nanoptix Inc.

699 Champlain St.

Dieppe, NB, Canada E1A 1P6

NOTE: It is imperative to have every package clearly identified by an RMA number.

6.2 Technical Support Contact Information

Service department

Nanoptix Inc.

699 Champlain St.

Dieppe, NB, Canada

E1A 1P6

Tel: 506.384.3388

Fax: 506.384.3588

E-mail: support@nanoptix.com

Web site: www.nanoptix.com