Boca Systems

LEMUR -C TICKET PRINTERS
Operator's Manual

RevA: 11.13.24

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FCC NOTICE

NOTE: The 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 the user's expense.

Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

WARRANTY INFORMATION

BOCA warrants the equipment manufactured and sold by it to be free from defects in material and workmanship under normal use and service for a specified period of time. Parts damaged by negligence or misuse (bad ticket stock, improper operating conditions, etc.) are excluded from this warranty. Warranties for printers are 1 year from date of shipment. (NOTE: The print head is a consumable part and is warranted for 90 days.) Spare parts carry a 90-day warranty. Tickets are warranted, under proper storage conditions, for a period of 3 years. All warranty work is to be performed either by BOCA or by an authorized BOCA service center. Shipping charges to the repair center are the customer's responsibility. BOCA will pay for the equipment's return via ground service.

Please go to the link below if you have any reported issues with your new BOCA printer.
www.bocasystems.com/onlinesupportform.html

Equipment damaged in shipping should be reported immediately both to BOCA and to the shipper.

EXTENDED WARRANTY PLAN - BOCA offers extended warranty plans for all printer models. These plans cover all parts and labor. All labor is to be performed at the BOCA facility. Equipment damaged by misuse or negligence, including damage to print heads caused by defective ticket stock, is excluded from this extended warranty. The customer, at its option, may request BOCA to ship individual parts to expedite simple repair procedures. In certain cases where the customer is unable to wait for the normal repair cycle, BOCA will ship an exchange printer within one business day after notification by the customer. All freight charges are the responsibility of the customer.

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1.0 Important Safety Information

WARNING: The appearance of this symbol indicates the proximity of an exposed high voltage area. Please follow all directions carefully for your personal safety. You must read the following safety information carefully before working on the printer.

As a safety precaution, all service to the printer should be done by qualified persons with power off and the AC cord unplugged from the printer. Following any procedure requiring the removal of covers and/or doors, please verify that they have been properly attached and fastened prior to operating the printer.

WARNING: "Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains."

WARNING: Power Cord Set: This must be approved for the country where it is used:

U.S.A. and Canada
- The cord set must be UL-approved and CSA certified.
- The minimum specification for the flexible cord is:
- No. 18 AWG
- Type SV or SJ
- 3-conductor
- The cord set must have a rated current capacity of at least 10A.
- The attachment plug must be an earth-grounding type with a NEMA 5-15P (15A, 125V) or NEMA 6-15P (15A, 250V) configuration.

United Kingdom only
- The supply plug must comply with BS1363 (3-pin 13 amp) and be fitted with a 5A fuse which complies with BS1362.
- The mains cord must be <HAR> or <BASEC> marked and be of type H03VVF3GO.75 (minimum).

Europe only:
- The supply plug must comply with CEE 7/7 ("SCHUKO").
- The mains cord must be <HAR> or <BASEC> marked and be of type H03VVF3GO.75 (minimum).

Denmark: The supply plug must comply with section 107-2-D1, standard DK2-1a or DK2-5a.

Switzerland: The supply plug must comply with SEV/ASE 1011.

China: The product label is located in the bottom of the equipment. It is also located near where the AC cord plugs into the printer.

产品的标识在设备的底部

WARNING: The appliance coupler (the connector to the unit and not the wall plug) must have a configuration for mating with an EN60320/IEC320 appliance inlet.

WARNING: The socket outlet must be near to the unit and easily accessible.

WARNING: France and Peru only:
This unit cannot be powered from IT† supplies. If your supplies are of IT type, this unit must be powered by 230V (2P+T) via an isolation transformer ratio 1:1, with the secondary connection point labelled Neutral, connected directly to earth (ground).

WARNING: RJ-45 Ports. These are shielded RJ-45 data sockets. They cannot be used as standard traditional telephone sockets, or to connect the unit to a traditional PBX or public telephone network. Only connect RJ-45 data connectors. Either shielded or unshielded data cables with shielded or unshielded jacks can be connected to these data sockets.

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2.0 Unpacking the Printer

The printer is shipped in a ruggedized container. **Please save packing material for future use.** Remove the printer and accessories from the box and inspect for obvious damage. If damage is noticed, please report it immediately to BOCA.
Email: cathy@bocasystems.com   Tel: (561) 998-9600   Fax: (561) 998-9609

The following items should be in the box:

- a)   Ticket Printer
- b)   24VDC power supply
- c)   AC cord
- b)   Hopper (if applicable)
- d)   Interface cable (optional)
- e)   Mounting Plate (optional)

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3.0 Introduction

The Lemur-C printer is a direct thermal ticket printer that may be purchased with optional integrated cutting mechanism. This manual will provide the user with general information regarding printer set-up, configuration and troubleshooting. By default, the printer is configured for use with an adjustable paper path (1" to up 3.25") for use with media that has a Lemur-C black timing mark (https://www.bocasystems.com/ticket_specs9.html). This printer may also be ordered to support the use of 80mm rolled receipt stock (see Appendix I – RECEIPT MODE).
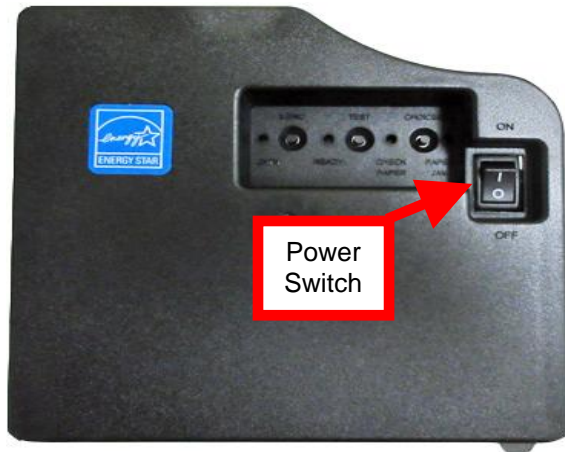
Power Switch

DC IN
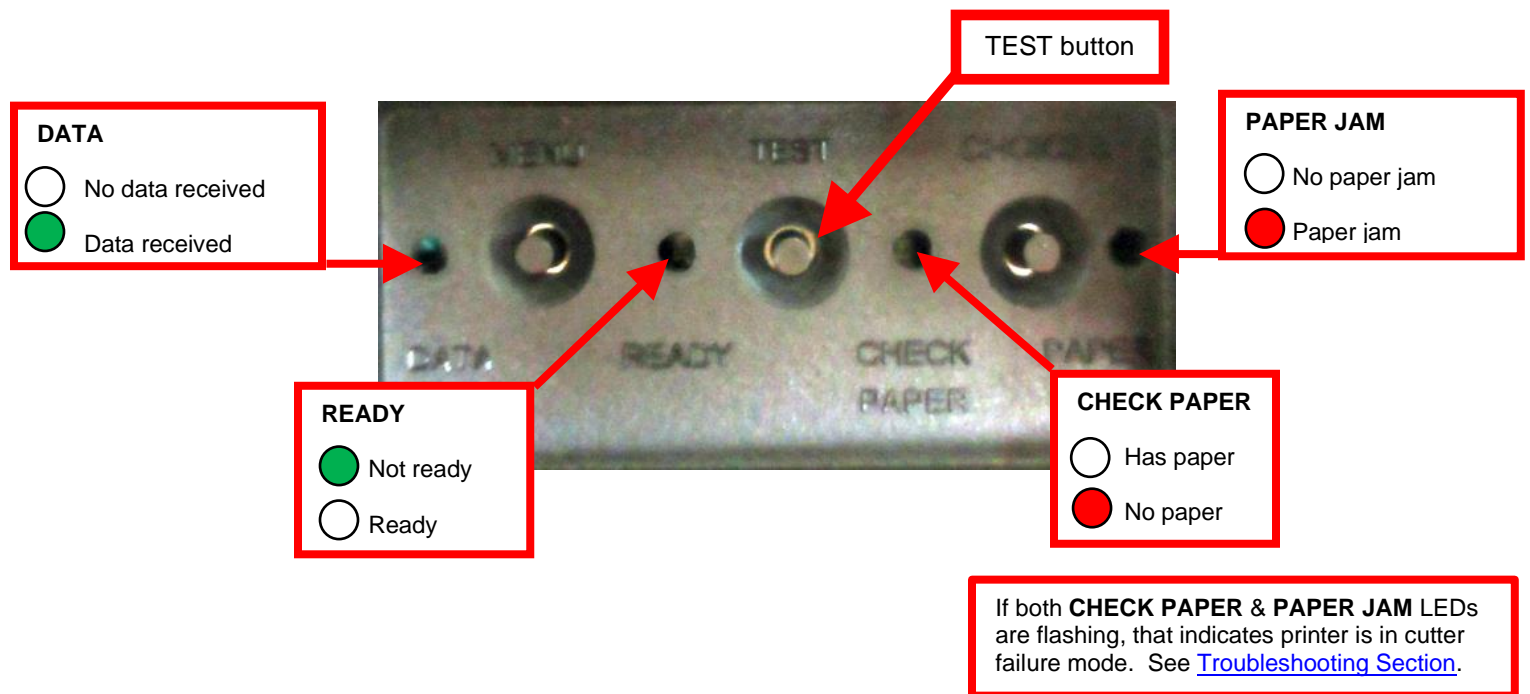
TEST button

DATA

◯ No data received

🟢 Data received

PAPER JAM

◯ No paper jam

🔴 Paper jam

READY

🟢 Not ready

◯ Ready

CHECK PAPER

◯ Has paper

🔴 No paper

If both **CHECK PAPER** & **PAPER JAM** LEDs are flashing, that indicates printer is in cutter failure mode. See Troubleshooting Section.

4.0 Installation

The Lemur-C printer was designed to be mounted either on a desktop or shelf (horizontal model) or vertically in a counter top (see Appendix A for installation of vertical printers).

Prior to site preparation and installation, the printer should be powered up and run in the self-test mode.

- Lay the printer flat on a counter top.

- Attach the AC cord into the 24VDC power supply and plug the other end into the round DC in port of the printer.

- Install ticket hopper (if applicable) to catch the tickets. Lemur printer without a cutter won't have a ticket hopper.

- IF YOU HAVE A LEMUR-C CONFIGURED FOR RECEIPT MODE THEN SEE APPENDIX I.

- Turn power on. If the printer has an optional cutter, then you will hear the cutter motor cycle.

- Wait six seconds after power up. Begin loading tickets through the entrance slot with a smooth motion until the printer automatically positions the ticket. See section 6.0 Ticket Load Procedure.

NOTE: You want to make sure that the black timing mark is in the correct location before loading the tickets into the paper path. See www.bocasystems.com/tickets_specs9.html for black mark layout specs.

- After the ticket is automatically positioned (the green READY led will be illuminated), press the center TEST button located on the control panel to print a test ticket. The next page shows sample self-test ticket printouts.

- Verify that the printer properly works with your system by issuing a ticket through your computer system. You may also use out customer-based program to test the printer independently of your ticketing system (see Appendix E)

You may now install the printer in its permanent location. Adequate room should be provided behind the printer for the smooth feeding of ticket stock. Please do not prevent the ticket hopper (horizontal models) from operating by touching tickets during the printing cycle.

Lemur cover removal – The cover may be removed by depressing the cover lock tab that is located on top of the cover. Slide the cover off.
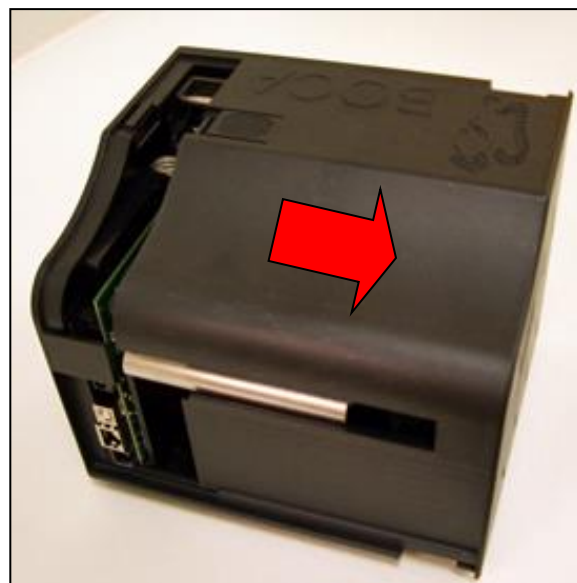
Above sample was printed on a 2" x 5.5" concert size ticket.

Above sample was printed on a 3.25" x 2" cinema size ticket.

Your printout may vary depending on printer configuration and ticket stock used.

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5.0 Media Supply

The Lemur-C has several basic requirements for dispensing the media to the printer from a roll or fan-fold media which include:

- **Align printer with media** – The media roll or fan-fold stack should align with the left side of printer (from where stock is loaded into the printer) to keep the media un-damaged and prevent ticket jams. The 9.6 Ticket Width Adjustment section provides a visual reference of this.

- **Unobstructed media feed** – The media should not touch cable, other kiosk components, or surface other than media guides or the fan-fold media tray.

- **Direct sunlight, incandescent or infrared lighting or heat sources** – These light sources can come from various sources and the printer should be shielded from them. For example, exposure to direct sunlight (possibility to the location of a kiosk vent) will affect the printer's sensors that may lead to reliability issues.

- **Media dispensing must be smooth and easy**

    o Fan-fold media must have sufficient room to unfold and not bind on media guide surfaces or at the perforations or sides.

    o Roll media must be able to turn with little or no drag, and allow the printer to smoothly pull media without jerking and stopping. Minimize roll to roll holder contact and avoid sharp contact surfaces. Recommend the use of an optional BOCA roll holder (P/N 424195) if the printer is being used with external large roll media.

    The printer can produce a distorted print (e.g., compressed print, short receipts, etc.), motor stalls, and jamming if media dispensing to the printer if the media transition is not smooth and easy for the printer.

- **Fan-folded stock be fanned prior to use** - This may be done by securely holding one side of the stack and fanning the other. You will want to do both sides. This fanning will help remove any paper dust or debris that may be on the ticket stock, as well as reduce the paper dust in the printer too.

- **Leading Edge** – The leading edge (first part of the media that is loaded into the printer) must have a clean edge and be as flat as possible. Media with damaged edges and are curled upward may not feed properly through the paper path.
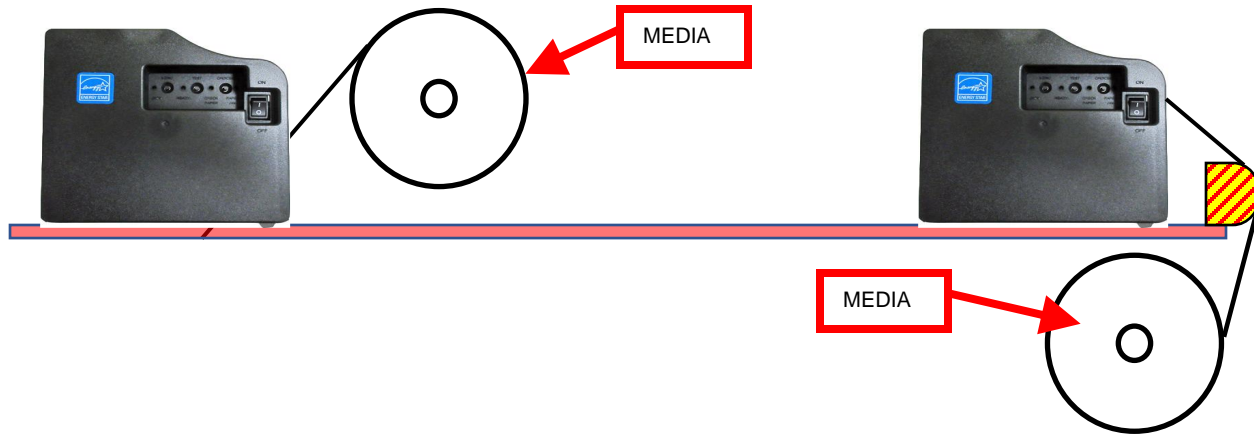
Media Input Aperture

The printer has a wide aperture to support a range of media mounting locations. The media can enter the printer directly or indirectly with the addition of optional or custom-made guides.   Want to have the media back far enough away to clear the cables that plug into the back of the printer.
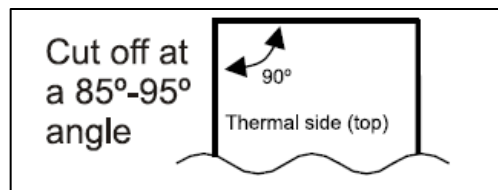
FAN FOLDED STOCK
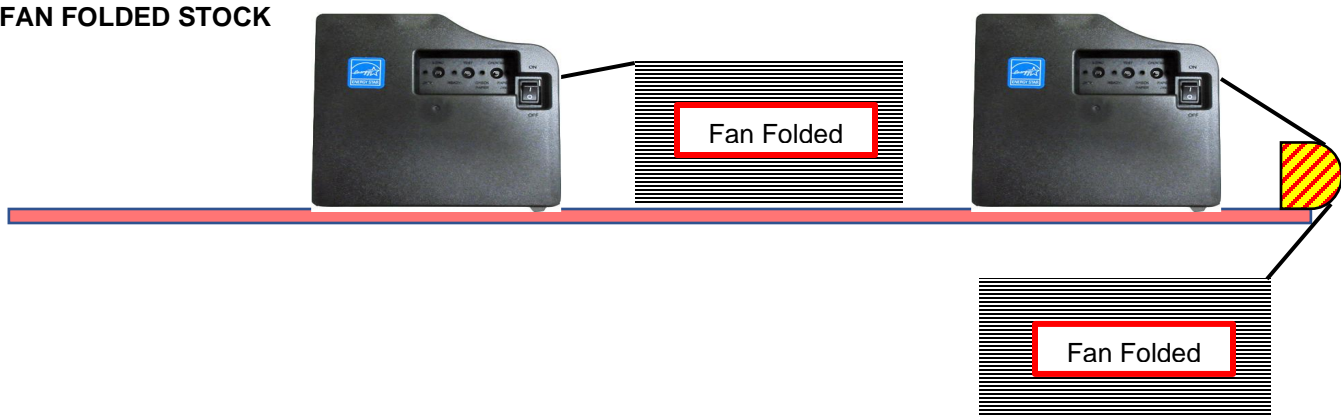
ROLL RECEIPT MEDIA

If the entrance of the media into the printer will fall below the red highlighted area shown above, then the highlighted yellow area 🔶 should have a continuous physical barrier separating the media from coming in contact with the cabling, printer body, kiosk chassis seams, etc.

RECEIPT MEDIA

The leading part of the media should have a clean edge and be as flat as possible. If the media is curled upwards then it will need to be flatten prior to loading into the printer. The loading process works best with the media having as a square, straight edge. Cut the paper in a suitable angle.


Cut off at a 85º-95º angle
90º
Thermal side (top)

Also cutting a 45° angle on each side will help the flimsy media load through the paper path better.

Cut a 45° angle

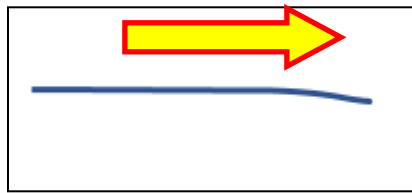Cut a 45° angle

RECEIPT MEDIA

WRISTBANDS

When feeding wristband stock into the printer the leading edge of the wristband should be lying flat and not curled upwards. An upward curled wristband may not feed properly into the printer and may lead to possible ticket jams on a printer with auto cutter.
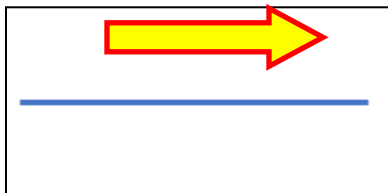
GOOD – wristband lying flat

ACCEPTABLE – wristband has a slight curl downward.
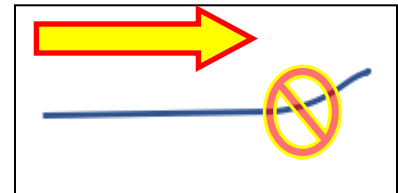
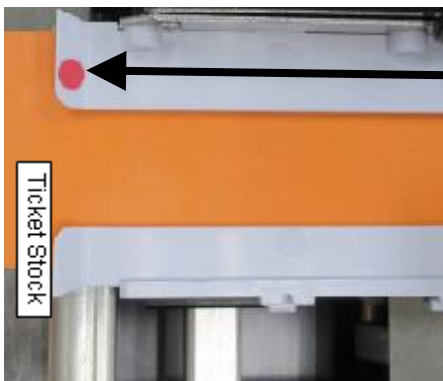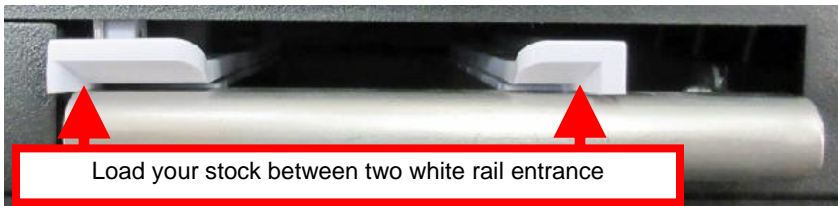**May cause feed issues** – wristband is curled upwards.

If you have any ticket load or jamming issues then make sure the paper path width is properly adjusted for the media being used (see 9.6 Ticket Width Adjustment).

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6.0 Ticket Load Procedure

## Universal Paper Guide (UPG) Ticket Load Procedure

1. Turn the printer on and wait five seconds. The red CHECK PAPER led will be illuminated. If your printer has a cutter, they you will hear it cycle during this time.

2. Begin loading the tickets through the entrance slot with a smooth motion until the ticket stock comes to a stop (at this point the stock is between the thermal head and platen). Keep pressure against the stock and the printer will automatically feed the ticket stock.

If you have any ticket load issues then make sure the paper guild slider bar is properly adjusted (see 9.6 Ticket Width Adjustment).

Load your stock between two white rail entrance

The black timing mark on the back of your ticket stock should pass under the rail side with the red dot and is facing down towards the floor.
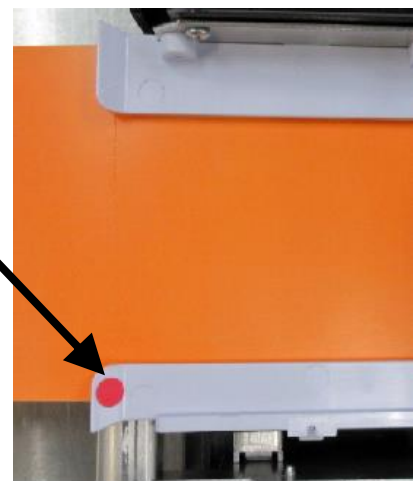
Above shows ADJ2 or ADJW path   **Above shows RADJW path**

Two typical ticket formats and feed directions are shown below. The black timing mark on the back of the ticket stock must be facing down towards the floor and the opto sensor.

Feed Direction

When loading 5.50" long ticket stock the black timing mark should be towards the rear of the ticket (the last part that goes into the printer). When loading 2.0"" long cinema ticket stock the black timing mark should be furthest away from to the leading edge of the ticket (the first part that goes into the printer).

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Non-Universal Paper Guide (UPG) Ticket Load Procedure

Printers built prior to June of 2021, Printer serial number 459433 and lower, are equipped with none Universal Paper Guides, except for receipt models.

1. Turn the printer on and wait five seconds.   The red CHECK PAPER led will be illuminated. If your printer has a cutter, they you will hear it cycle during this time.

2. Begin loading the tickets through the entrance slot with a smooth motion until the ticket stock comes to a stop (at this point the stock is between the thermal head and platen). Keep pressure against the stock and the printer will automatically feed the ticket stock.

If you have any ticket load issues then make sure the paper guild slider bar is properly adjusted (see 9.7 Ticket Width Adjustment).

Load your stock towards this side and below this metal plate

The black timing mark on the back of your ticket stock should pass over this side facing down towards the opto

Adjustable (ADJW)

Two typical ticket formats and feed directions are shown below. The black timing mark on the back of the ticket stock must be facing down towards the floor or the opto sensor.


Feed Direction

When loading 5.50" long ticket stock the black timing mark should be towards the rear of the ticket (the last part that goes into the printer). When loading 2.0"" long cinema ticket stock the black timing mark should be furthest away from to the leading edge of the ticket (the first part that goes into the printer).

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7.0 Standard Interface Pinouts

RJ12 Serial Connection

RJ12 Connector
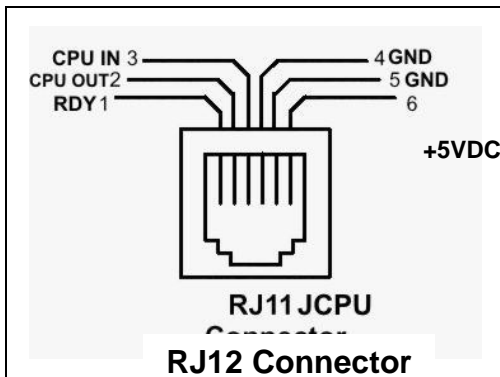
TYPICAL DB9 to RJ12 PIN CONNECTIONS

9 pin host	BOCA RJ12	
2	2	Transmit
3	3	Receive
5	4	GND
6	1	RDY
8	6	CTS

USB USB 2.0 compliant devices.

ETHERNET (Optional) is a standard RJ45 Ethernet cable connection.

WI-FI (Optional) is compatible with 802.11b/g/n Wi-Fi router and supports security settings WEP/WPA/WPA-2.   Printers built after July 2020 (s/n 452607 and higher) are able to support 802.11b/g/n Wi-Fi router. On dual-band router our printer needs be configured for the 2.4GHz band.

BLUETOOTH (Optional) Allows connection via Bluetooth interface.
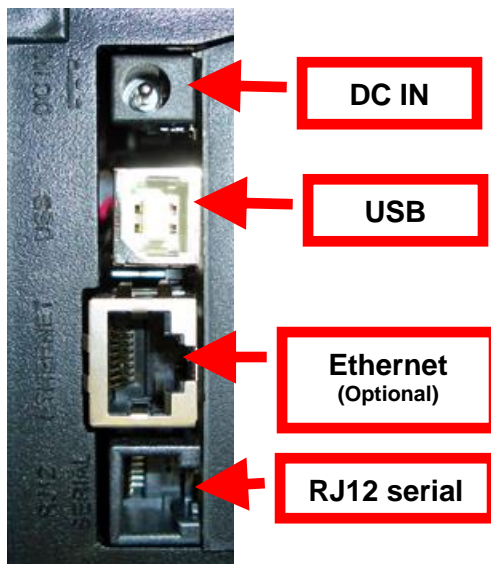
Printers serial number 500970 & higher had status LEDs on the optional Ethernet connector itself.

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8.0 Thermal Paper - Theory & Specification

Refer to the BOCA Systems website at www.bocasystems.com, THERMAL TICKETS section for the most current paper specifications.

The print head's life expectancy is composed of both a mechanical and an electrical component. Both of these factors are strongly influenced by the quality of the thermal paper used.

MECHANICAL
The print head has a theoretical rating of 60 kilometers. This number is based upon the assumption that the head will be used with a good quality, top coated thermal paper. Uncoated and poorly top coated thermal papers are abrasive to the print head and have been found to wear through the head after less than one kilometer.

Other factors which may contribute to premature mechanical wear are the use of non-thermal inks and stray metallic particles stuck in ticket perforations. Certain inks colors such as opaque white (which contains titanium dioxide) are also highly abrasive.

Unfortunately, there are no available devices for quantitatively measuring the abrasiveness of a given ticket. Fortunately, we have developed a slightly subjective, but effective method of weeding out overly abrasive ticket stock.

ELECTRICAL
Each heat element, dot, on the print head has a theoretical life expectancy of 100 million activations. This is based on the assumption that each activation will cause the dot temperature to approach the dot's maximum recommended temperature. Running at lower temperatures will increase the theoretical life expectancy, while slight temperature increases will seriously (exponentially) degrade the head life.

The thermal paper can affect the electrical head life in two ways. Insensitive, slow papers will typically encourage the user to increase the voltage to darken the printed image. This will directly increase the head temperature resulting in reduced head life. Additionally, the higher temperatures will frequently cause the ink to peel off the ticket and deposit onto the print head. The ink debris will disrupt the normal transfer of heat from the head to the paper. This further increases the head temperature above the desired level. The use of non-thermal inks and/or non-top coated papers also will cause the ink to release and deposit on the print head.

SPECIFICATION
Based upon the above technical information, BOCA has always tried to encourage our customers to use the proper thermal papers to maximize the life of their print heads. BOCA provides an extensive series of papers which meet the above criteria for low abrasion and high sensitivity. We have also tested and approved a number of Ricoh thermal papers which meet our criteria. While we have not had the opportunity to test other manufacturers' thermal papers, we feel confident that other papers manufactured with the above goals in mind should be acceptable for use in our printers. The following list of papers have been approved by BOCA.

200 dpi usage
BOCA   T4, T5, T7, LCS and SKI10

200 and 300 dpi usage
BOCA   HS7, M7, HS5, M10, SKI14

Please note that the 300 dpi papers may be used on 200 dpi printers. In fact, doing so will allow the user to decrease the head energy thereby increasing the electrical life of the head. DO NOT use 300 dpi heads with 200 dpi paper.

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9.0 Maintenance and Adjustments

Your ticket printer is solidly constructed and has been designed for high volume use. It requires minimal care to provide maximum service.

WARNING: The appearance of this symbol indicates the proximity of an exposed high voltage area. Please follow all directions carefully for your personal safety. You must read the following safety information carefully before working on the printer.

This section provides an overview of printer maintenance.

For discussion purposes, the printer consists of three major modules or assemblies:
- Paper guide and print head assembly
- Cutter assembly
- Logic board assembly

As a safety precaution, all service to the printer should be done by qualified persons with power off and the AC cord unplugged from the printer. Following any procedure requiring the removal of covers and/or doors, please verify that they have been properly attached and fastened prior to operating the printer.

Routine Maintenance – Routine maintenance should normally be done a minimum once a year. Printer may require increased maintenance due to usage and environmental conditions.
See following link: https://www.bocasystems.com/documents/LemurC_RoutineMaintenance.pdf

Paper Guide and Print Head Assembly

The principal function of this assembly is to guide the ticket stock to the thermal print head where thermal printing takes place. Additionally, this assembly houses the drive platen and ticket positioning sensors. If necessary, the total assembly may be removed from the unit. All replacements and adjustments of the components on this assembly may be done without removing the total assembly. The most common adjustments and replacements regarding this assembly follow:

Lemur-C non-UPG paper guide
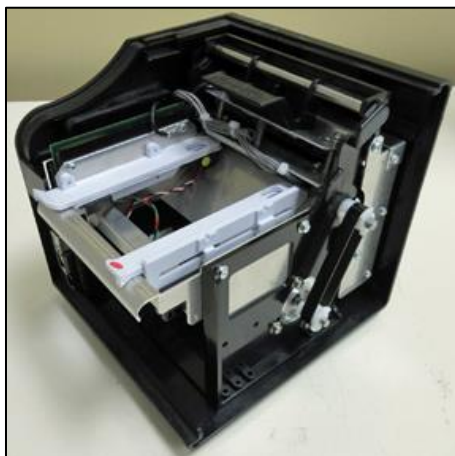
Lemur-C UPG paper guide
 (current model)


Lemur-C with receipt paper holder
 See Appendix I.

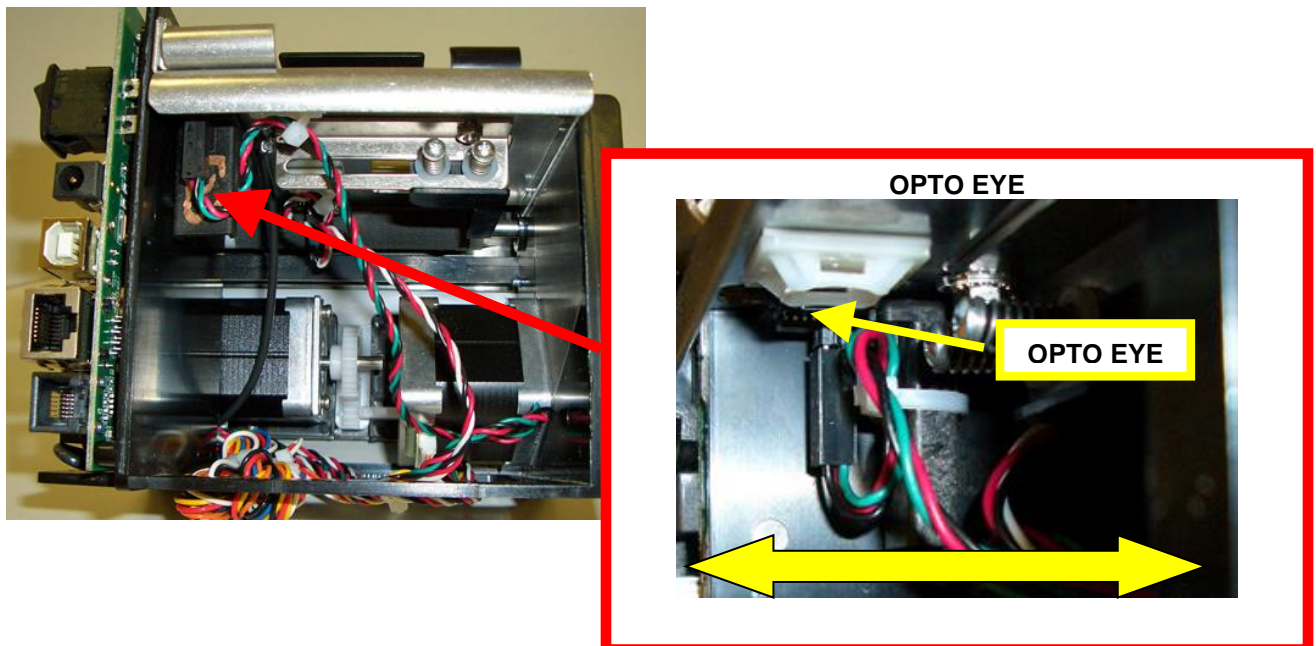Click here to return to > Table of Contents

9.1 Cut or Tear Opto Sensor

There is black mark opto sensor that controls the cut or tear position of the media. Removal or adjustment of the opto should be done without removing the bracket from the paper guide. The opto position is factory set and adjustment should normally not be necessary.

Once a year the opto eye should be blown off with air. This interval will vary depending upon the environment and the quality of the ticket stock.

- Below image shows a Universal Paper Guide (UPG). The sensor with be located in the rail that has a red dot on it and position towards the back (where stock enters the paper path)

Black mark sensor location

ADJW or ADJ2 paper path   RADJW paper path

OPTO EYE
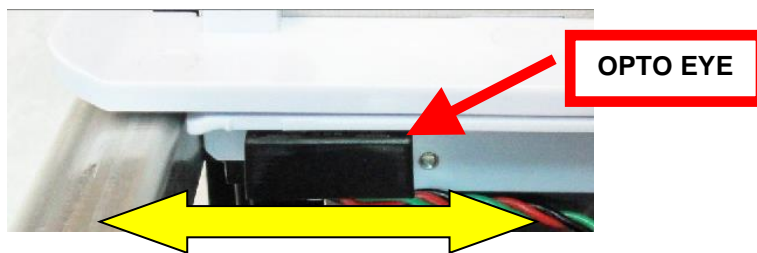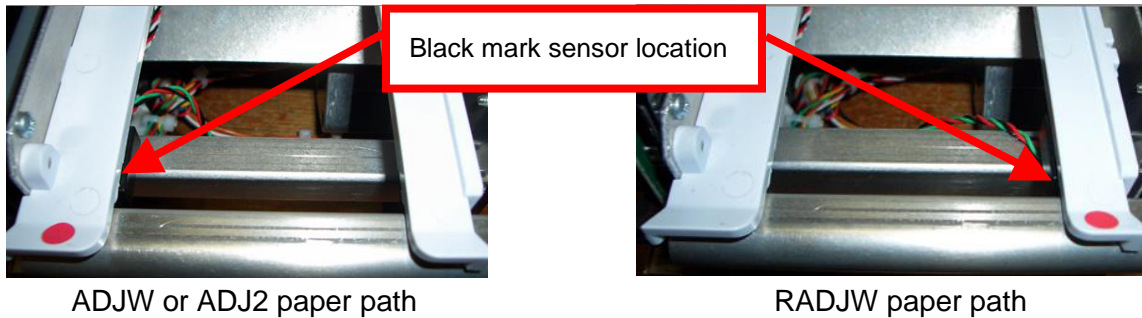
- Below image shows a non UPG

OPTO EYE

OPTO EYE

Note: Before making any opto adjustments make sure your ticket stock was manufactured to proper <u>ticket specifications</u>.

To adjust the cut or tear position, physically adjust the opto mounting bracket forward or backwards to achieve the desired cut or tear location. On a Lemur-C with auto cut the cut position should be a 1/16"-1/8" away from the ticket perforation. On a Lemur-C without auto cut the ticket perforation should line up with the edge of the cabinet or top plate.

For a printer with a Universal Paper Guide (UPG) you may need to remove the ticket stock in order to physically adjust the black timing mark sensor (opto).

If you are not able to get the desired cut position, make sure your ticket stock was manufactured to proper specifications.

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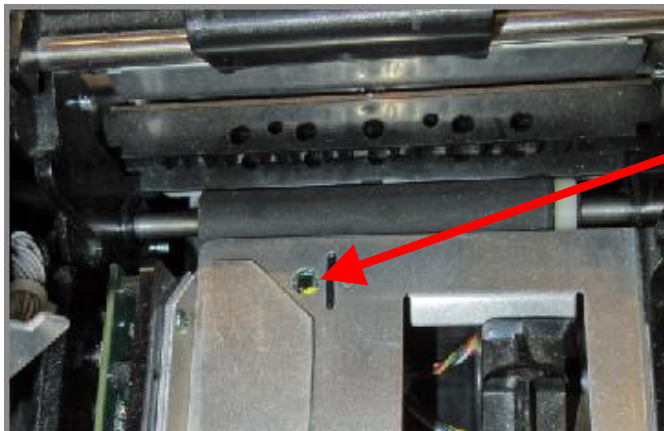
9.2 Load Opto Sensor

The load opto is responsible for letting the printer know when it has paper stock loaded in the printer.

Once a year the opto eye should be blown off with air. This interval will vary depending upon the environment and the quality of the ticket stock.

- **Universal Paper Guide (UPG)** For both cutting and non-cutting printer the load sensor is located on the fixed rail said.


- **Non-UPG**

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9.3 CUT-3 Opto Sensor

Your printer may have an optional CUT-3 configuration that will place the cut opto onto the cutter or tear assembly. On the printer's serial number tag the opto field will show CUT-3. The opto sensors are responsible for letting the printer know when it has paper stock loaded in the printer (load opto) and detecting the black timing mark on the back of the ticket stock (cut/tear opto).

1. Remove the print head (see 9.4 Thermal Print Head)

2. Using inert dusting gas (canned air) or equivalent blow air over the opto eyes (see below photo).

CUT OPTO EYE

LOAD OPTO EYE
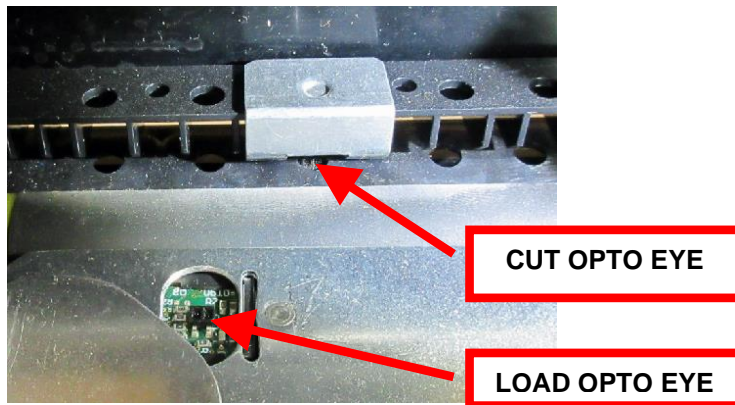
3. Once the opto eyes are cleaned, install the print head back into the printer

4. Restore pressure to the head by closing the cam lock lever so it locks in place.

The printer is now ready to be put back in service.

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9.4 Thermal Print Head

The print head should be cleaned periodically to prevent debris from building up on the print element. The required cleaning interval varies greatly depending on the quality of the ticket stock and the amount of dust entering the print area. Excessive dirt builds up on the print head will result in reduced quality. Continuing to run the print head in a dirty condition will reduce its life expectancy, as it is unable to diffuse its heat properly.

The thermal print head can be removed for cleaning or replacement, as follows:
1. Make sure power is off and the AC cord is disconnected from the printer.
2. **DO <u>NOT</u> UNPLUG CABLE FROM PRINT HEAD.**
3. Lift up on the cam lock assembly (located above the head mounting block or plate) to remove pressure from the thermal head. **Photo A**
4. Lift up on the head mounting plate/thermal head to remove. **Photo B**
5. Clean the thermal print head surface (the side that makes contact with the paper) with isopropyl alcohol. **Photo C**
6. Install the head by reversing the above procedures.
7. Restore pressure to the head by pushing down on the cam lock assembly.
8. The printer in now ready for operation. If the print quality is still poor then the thermal head needs to be replaced.
9. To replace print head remove ribbon connector from print head and then remove print head from mounting plate by removing two Philip head screws.

Cam Lock Lever

Head mtg. Plate

Photo A

Photo B

Clean This Surface

Photo C
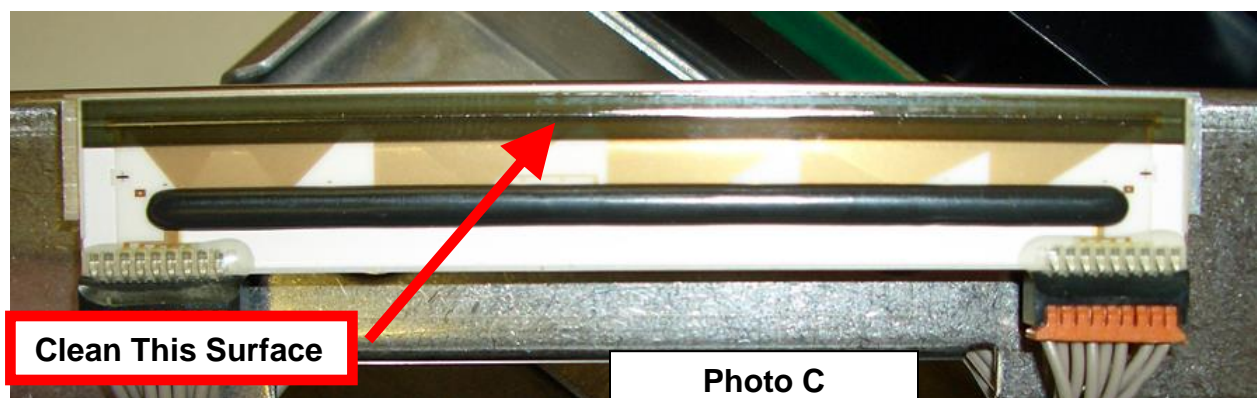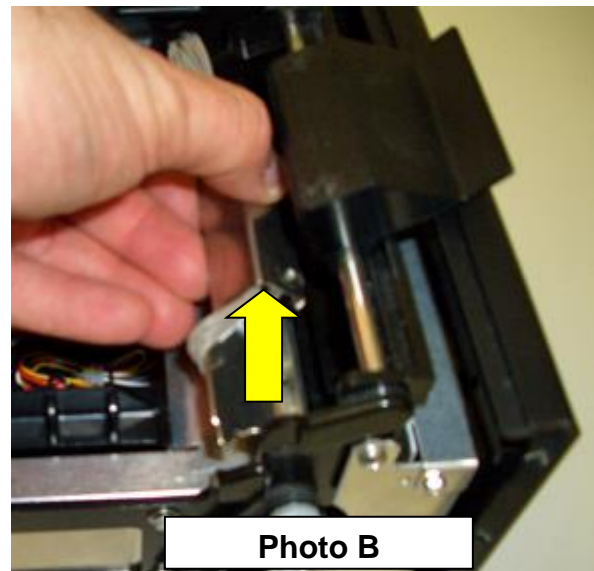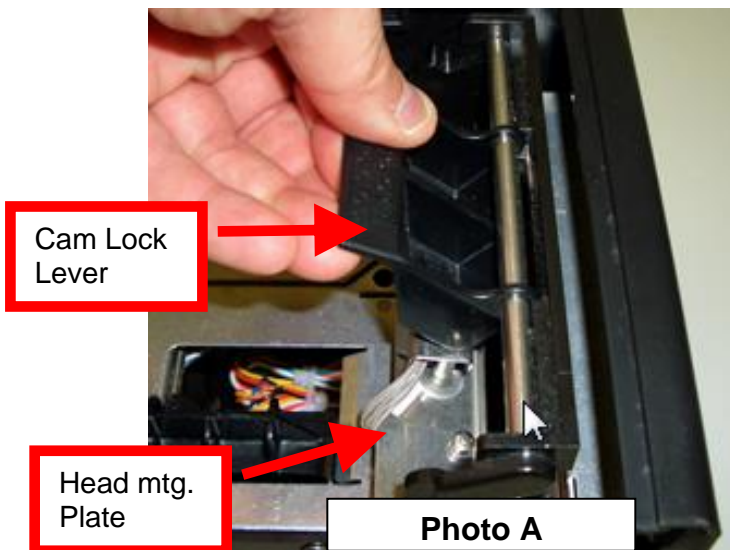
# 9.4.1 Thermal Print Head Replacement

The below review how to replace the thermal print head in your printer, if needed.

The follow needs to be done with the printer powered off and unplugged from the AC source.

1. Remove the print head mounting plate from the printer as shown in section 9.4 Thermal Print Head.

2. Once the head plate has been removed; loosen the two Philip head screws until the thermal print head disengages from the head plate. Take care not to lose lock and flat washers.

3. Gently unplug the cable from the old print head and plug it into the new print head. If your print head has two cables then this should be done one cable at a time so not to mix them up. The cables are keyed (see examples below). The keyed position must be lined up while plugging the cable into the print head. **You should not have to use excessive force to do this**
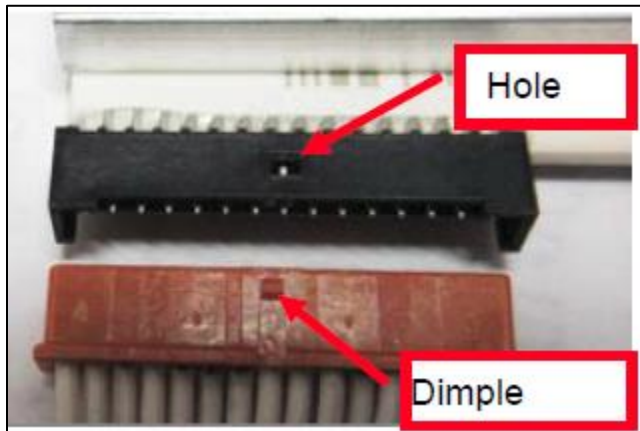

4. Install the print head back onto the print head mounting plate.

5. Install the head mounting plate/ thermal head back into the printer.

9.5 Platen (Rubber Driver Roller)

The Platen (rubber drive roller) should be cleaned once a year to prevent paper dust from building up on the roller. (NOTE: The platen may require more frequent cleaning in dusty environments or under high usage)

1. Make sure power is off and the AC cord is disconnected from the printer

2. Unlock the cam lock lever and remove head mounting block/ plate. (Refer to section 9.4 Thermal Print Head).

3. Apply a small amount of Isopropyl alcohol onto a paper towel to clean the rubber roller.

4. Clean only the part of the rubber roller where the ticket stock makes contact with.

5. Rotate the rubber roller clockwise a little and repeat step 4; continue in the same manner for one full revolution of the rubber roller.

6. Install the head mounting block/ plate and lock the cam lock lever back in place. Printer in now ready for normal operation.
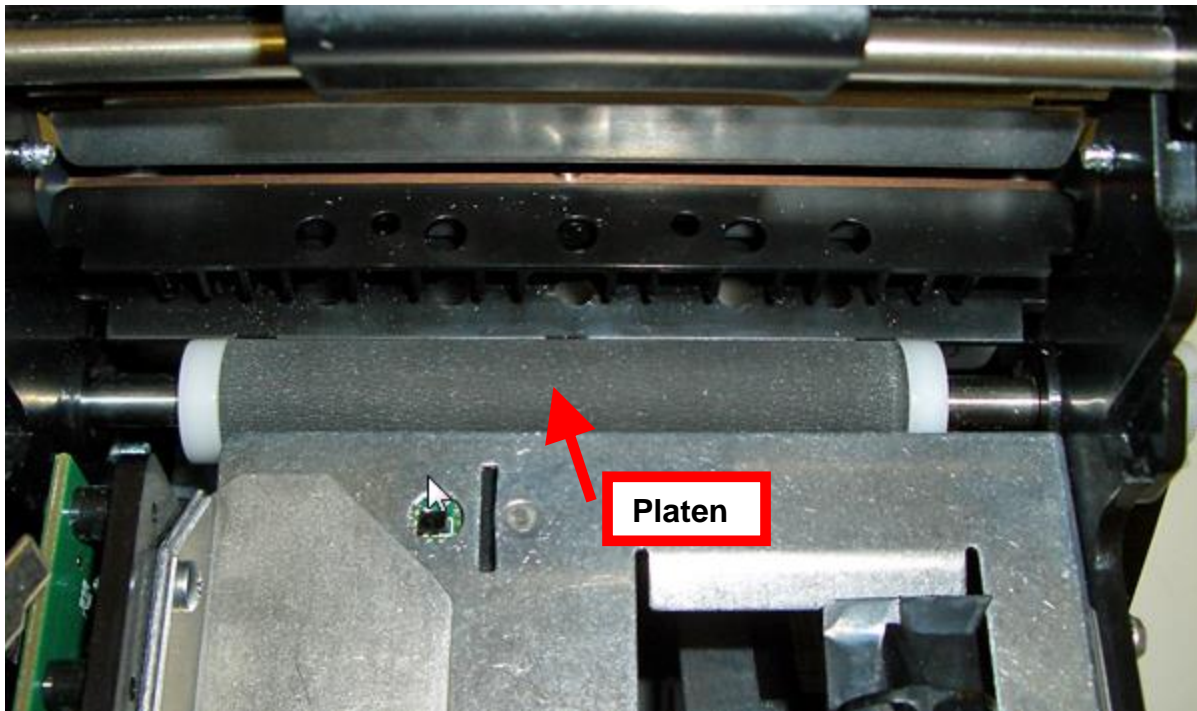
Platen color and shoulder configuration may vary

9.6 Ticket Width Adjustment (UPG)

The below reviews how to adjust paper path of a Universal Paper Guide (UPG) printer for use with a different ticket width.   Adjust the slider bar down to the proper ticket width, making sure the bar is not too tight against the ticket. The ticket should move freely in the paper guide path

The adjustable rail may be closed by gently pushing on the black plastic block shown in the area below (highlighted in yellow).
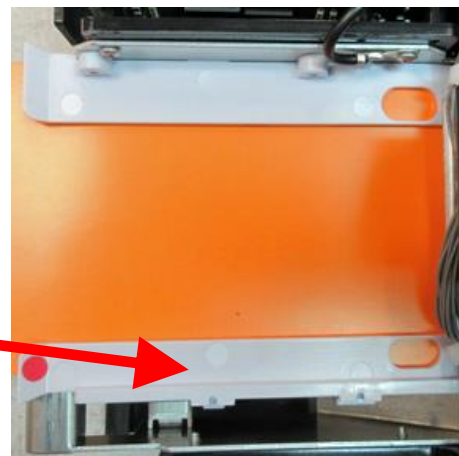

Black Plastic Block
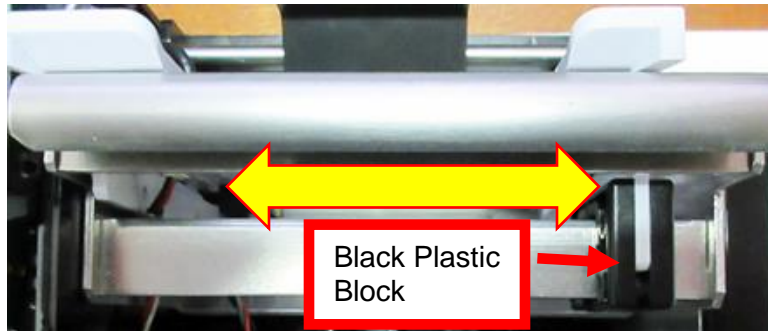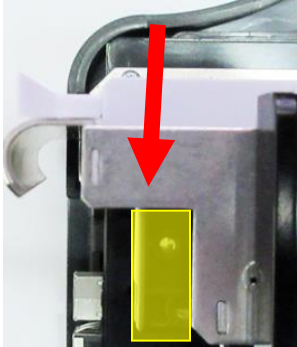
- Open up the adjustable rail so it is a little wider than the width of the stock you intend to us.
- Insert your ticket stock into the paper guide.
- Adjust the rail down to the proper ticket width, making sure the rail is not too tight against the ticket. The ticket should move freely in the paper path
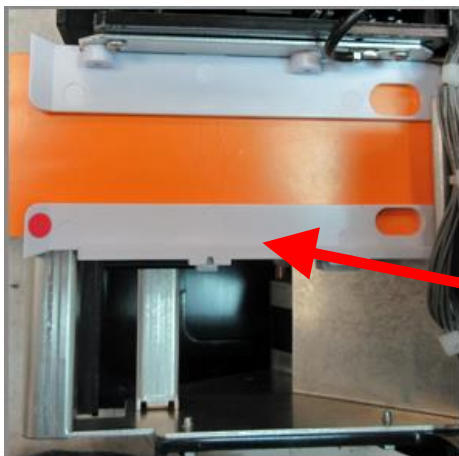
Adjustable Rail

Above shows UPG adjusted for 2" wide media   Above shows UPG adjusted for 3.25" wide media
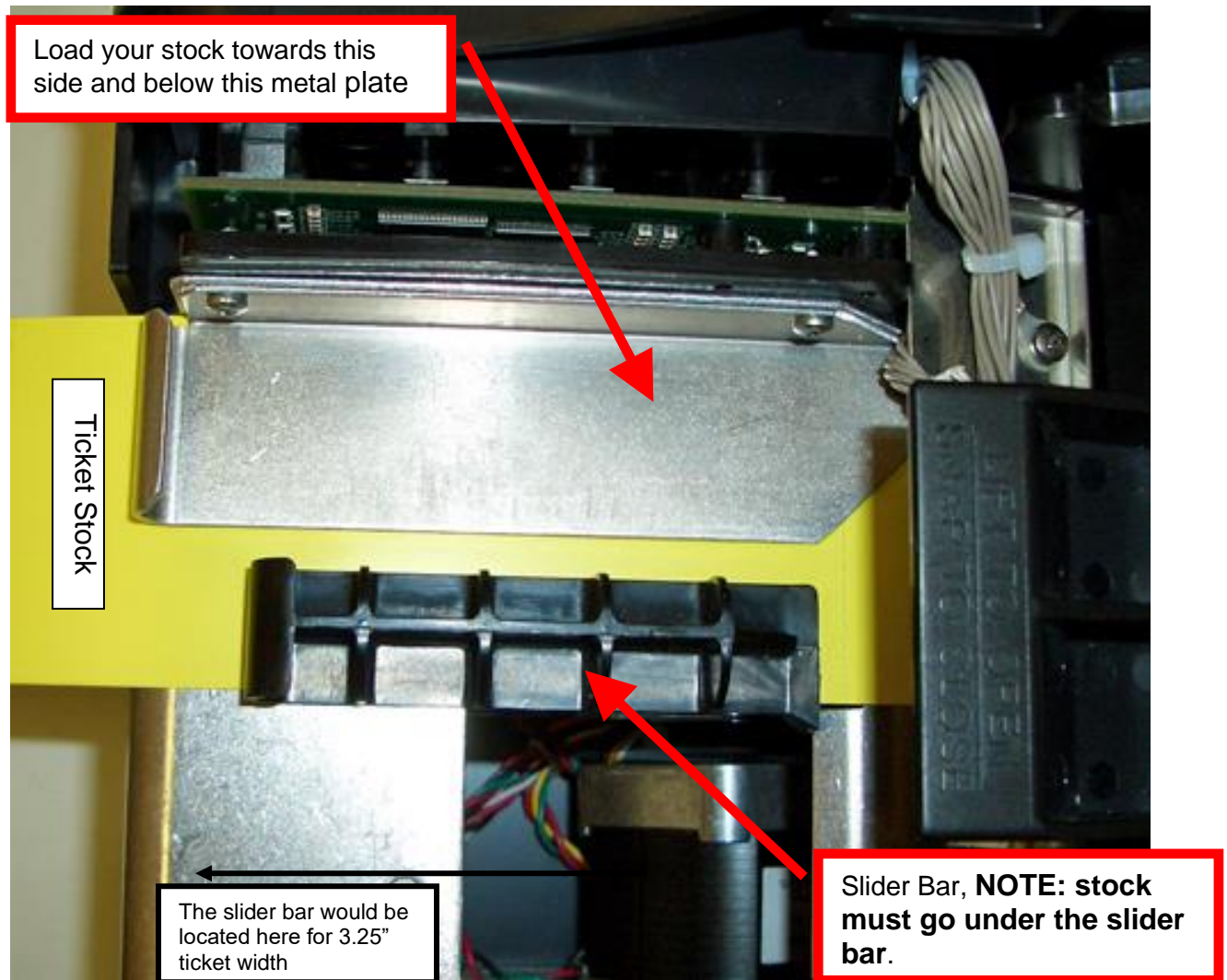
CAUTION:
If the slider bar is adjusted too tightly against the ticket stock, then it will cause the stock to buckle (see photos below). This will lead to feed or ticket jam issues. Ensure the adjustable rail is properly adjusted.

9.7 Ticket Width Adjustment (non-UPG)

To adjust the paper path for use with a different ticket width, adjust the slider bar to the fully open position. Insert your ticket stock into the paper guide. Adjust the slider bar down to the proper ticket width, making sure the bar is not too tight against the ticket. The ticket should move freely in the paper guide.

Load your stock towards this side and below this metal plate

Ticket Stock

The slider bar would be located here for 3.25" ticket width

Slider Bar, **NOTE: stock must go under the slider bar**.

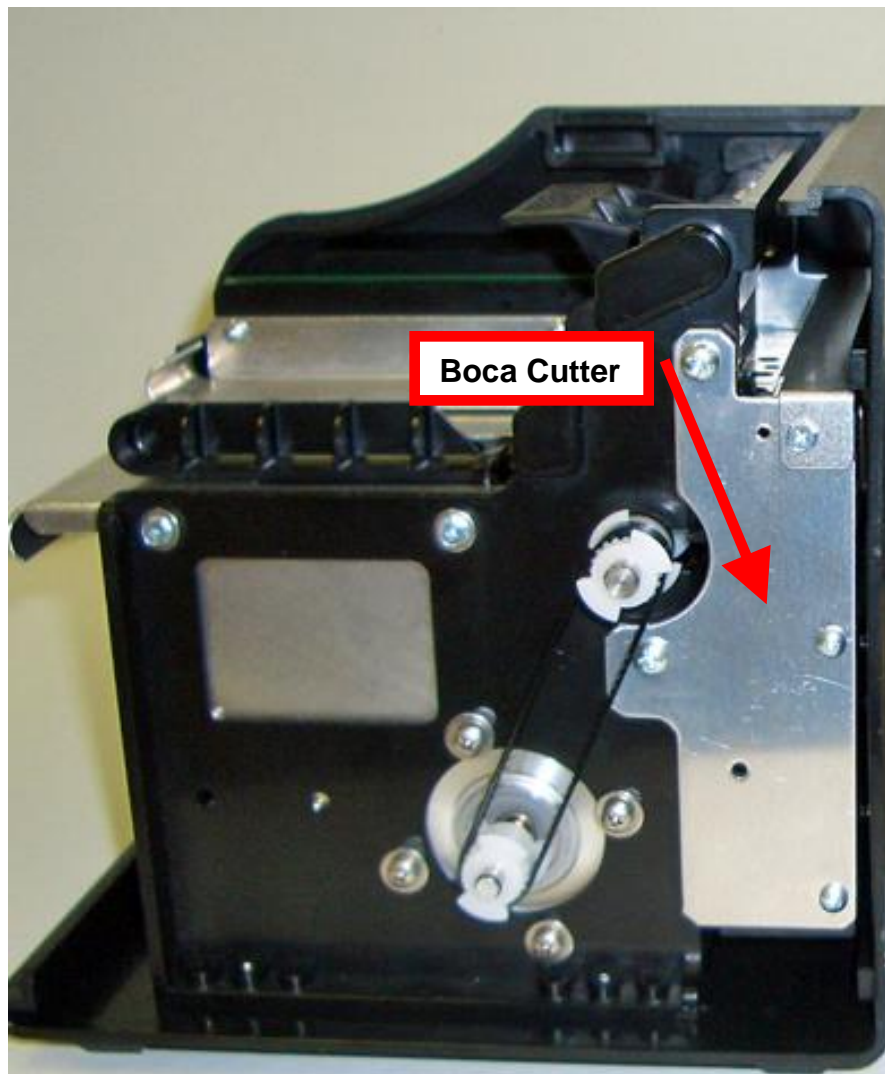Click here to return to > Table of Contents

9.8 Cutter Assembly

The optional BOCA cutter system is a fully integrated cutter knife mechanism powered by a stepper motor. The cutter requires no adjustments and is rated for approximately 750,000 cuts. Please be aware of the following:

Wait five seconds before feeding ticket stock into the printer after power up. During this time the cutter knife will move up and down. If ticket stock is fed into the printer before five seconds, a ticket jam could occur.

The cutter area should be blown out with air periodically to prevent debris from building up inside the cutter area. The required cleaning interval varies greatly depending on the quality of the ticket stock and the amount of paper dust entering the cutter area.

If the printer will be used with ticket stock that has a thickness greater than .008" then the cutter speed needs to be changed to SLOW. Please contact BOCA for documentation to make this change. If the cutter speed is not changed to SLOW, then the printer will not work reliably with said stock.

Boca Cutter

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10.0 General Cleaning

The interior of the printer should be cleaned whenever there is a visible accumulation of dust. Use a small vacuum for cleaning. Be careful not to jar any of the printer's parts loose.
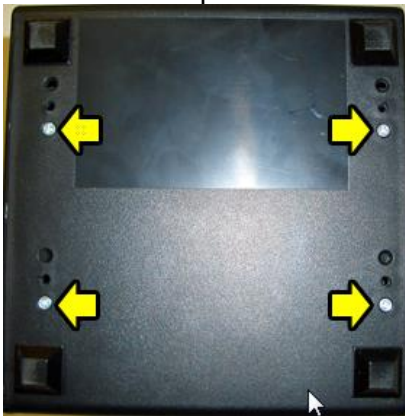
11.0 Logic Board

The printed circuit boards used in this product have been manufactured using surface mount technology. These printed circuit boards cannot be effectively repaired in the field and should be returned to the manufacturer if repair is required.

Warning: ALL SERVICE SHOULD BE DONE WITH POWER OFF AND THE DC POWER SUPPLY UNPLUGGED FROM THE PRINTER.

11.1.1 Logic Board (Removal)

1. Gain access to the logic board. This is normally done by removing the electronics cover or rear access panel.
    a. Remove 4 Philip head screws that are located on the bottom of the printer.

2. Side the print module assembly out.
3. Denote where all the cables are plugged into the logic board.
4. Unplug connectors connected to the main logic board.
5. Remove the three Philip head screws that secure the logic board onto the print module.
6. Remove board.

11.1.2 Logic Board (Installation)

1. Installed the logic board into the printer.
2. Install the three Philip head screws that hold the logic board onto the print module and tighten.
3. Attach connectors going to the main logic board.
4. Install the print module back into the enclosure. Take care to make sure the wires are not being pinched.

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12.0 Spare Parts List

#	Part Number	Description
1	423524C-1	Upper Rail Only (cutter)
1*	423524-C-NC	Upper Rail Only (non-cutter)
2	423802-W	Slider bar assembly for ADJW
3	423236P	Take Out Head Cam Lock
4	423496-ONE2C	Head Mounting Plate complete, for 200C3 (2C) print head only
4A	424496-ONE-L4	Head Mounting Plate complete, for 300L4 (3L) print head only
5	423760-LC-200	Platen complete for 200dpi (ADJW & UPG path only)
5*	423760-LC-200-ADJ2	Platen complete for 200dpi (ADJ2 path only)
5*	423760-LC-200RC	Platen complete for 200dpi (receipt roll holder only)
5*	423760-LC-300	Platen complete for 300dpi (ADJW & UPG path only)
6	SQ OPTO-L	Opto Detector Ticket load
6*/**	SQ OPTO-L-JST	Opto Detector Ticket load (for printers with CJ logic board)
7	200C3	Print Head, 200dpi (2C) only
7A	300L4	Print Head, 300dpi (3L) only
8	P50-1017	Drive Belt, 98T (for 200dpi only)
8*	P50-1002	Drive Belt, 102T (for 300dpi only)
9	423473C	Mounting plate only, BC5 cutter
10	424011	Stepper Motor with 20T pulley
11	423480C	Exit deflector upper, only
11A	423480C-C	Exit deflector upper, with brush
12	422718WV	Anti-Static Brush only (three holes)
13	423480C-VL	Exit deflector upper, complete for vertical printer only
14	423829-1	Mylar only, vertical bc5
15	423485-VL	Exit Deflector Lower, vertical
16	424008-LC	Cutter Assembly (BC5) No mounting plates (AMP sensor connectors)
16*/**	424008-LC-U	Cutter Assembly (BC5) No mounting plates (JST sensor connectors)
17	SQ OPTO	Opto Detector cut or tear
17A**	SQ OPTO-JST	Opto Detector cut or tear (for printers with CJ logic board)
18***	CR46	Main Logic Board (Standard)
18***	CR46-E	Main Logic Board w/ Ethernet option
18***	CR46-CD	Main Logic Board with RJ12 cash drawer mode
18***	CR46-ECD	Main Logic Board (Ethernet option) with RJ12 cash drawer mode
18***	CR46-BT	Main Logic Board (Bluetooth/Wi-Fi option)
18***	CR46-EBT	Main Logic Board (Ethernet & Bluetooth/Wi-Fi option)
19	423196	Ground Strap
20	424010	Cable, Thermal Head (for 2C print head only)
20A	424049	Cable, Thermal Head (for 300L4 print head only)
21	423938	DC Harness, cutter
21*/**	423938-JST	DC Harness, cutter (for printers with CJ logic board & UPG paper path)
22	420880C	Base
23	420881C	Cover
24	424095	Power Supply 24VDC 65W
25	423825-4x6	Hopper, (4" x 6") Plastic
26	423480Z-R	Exit deflector upper, receipt roll holder printer only
27	SQ OPTO-U	Opto detector, cut/ tear (UPG paper path) yellow dot on side
28	SQ OPTO-L-U	Opto detector, load (UPG paper path)
29	424221	Cable, JST to AMP dc harness jumper
*	P19-1000	Cable, AC cord 110VAC (US)
*	423855	Cable, AC cord 220VAC (European)
*	423856	Cable, AC cord 220VAC (UK)
*	423863	Cable, AC cord 220VAC (Australia)
*	423855	Cable, AC cord 220VAC (European)
*	423765	Cable External, serial DB9 TO RJ12
*	423947	Cable External, serial DB25 to RJ12
*	423846	Cable External, USB
*	423825-4x6	Hopper, (4" x 6") Plastic
*	423635	Rubber Feet
*	421421C-P	Top Plate, vertical (8.70" x 9.64")

* Customer dependent and not shown in photos
** for printer that has software ID CJ## on the serial number tag and UPG paper guide.
*** If the logic board is for a printer with a 300dpi print head then add -300 to the end of the part number.

In February of 2020 the LC46 (JDC AMP connector) board was phased out as a spare part item. All future boards will have a JDC JST connector. Printer serial number 447356 and higher.
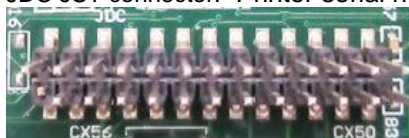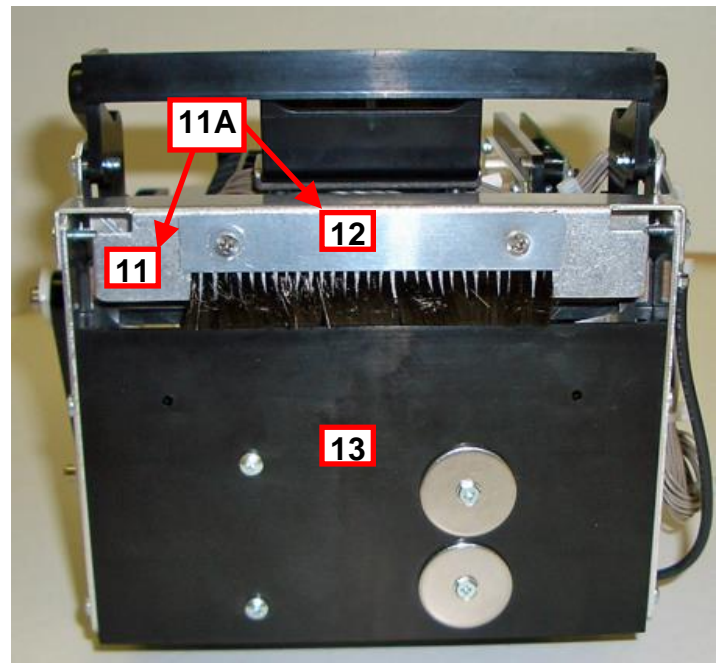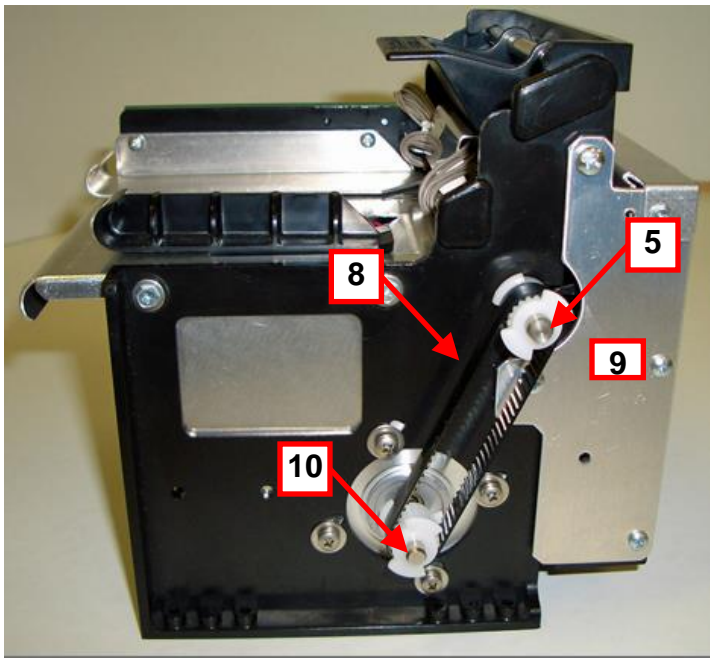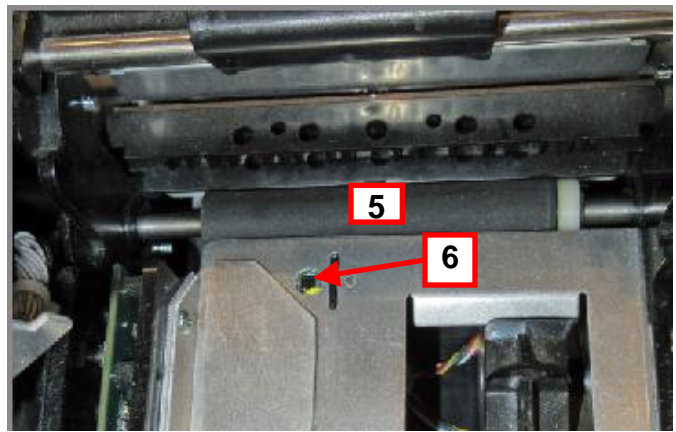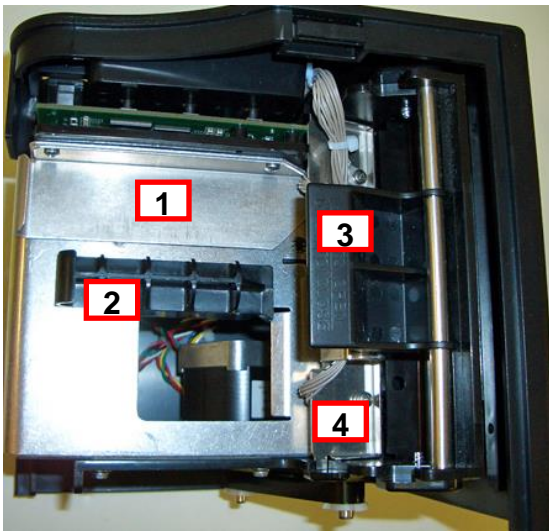

JCD AMP connector

JCD JST connector

The part number 424221 JST to AMP jumper will need to be ordered when the CR46 board is being used in a print that has AMP connector DC harness. Printer s/n 447355 and lower.

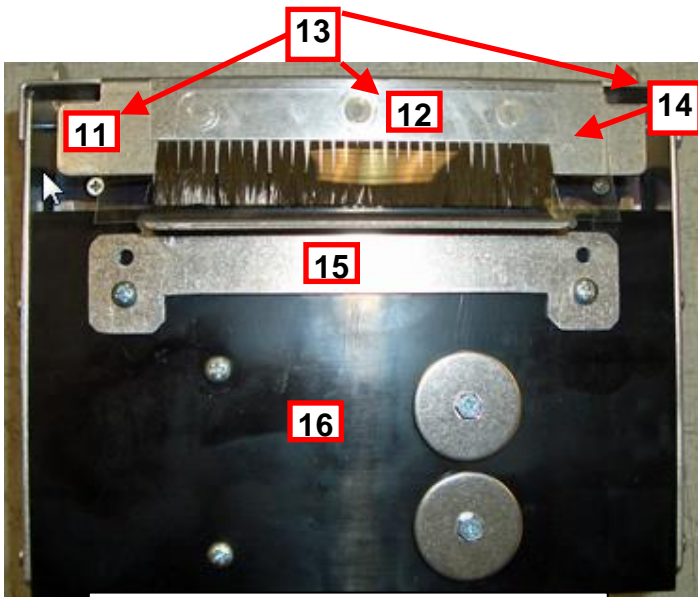200C3 print head installed on 423496-ONE2C head mtg. plate

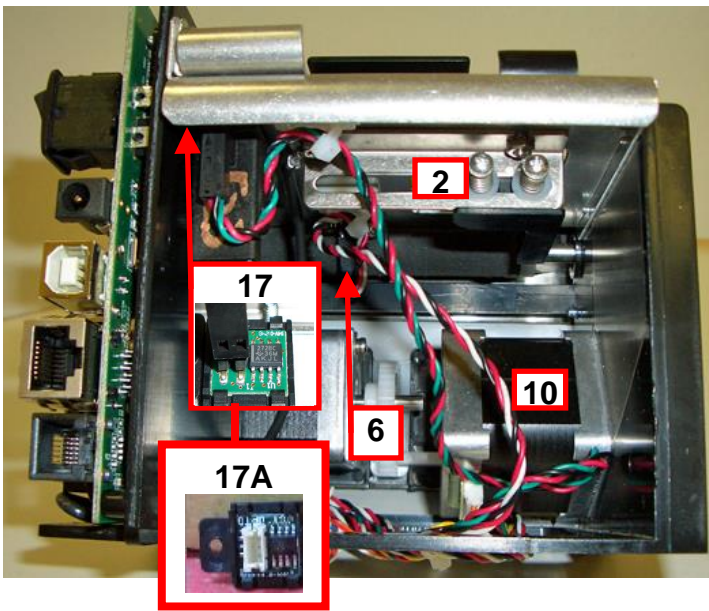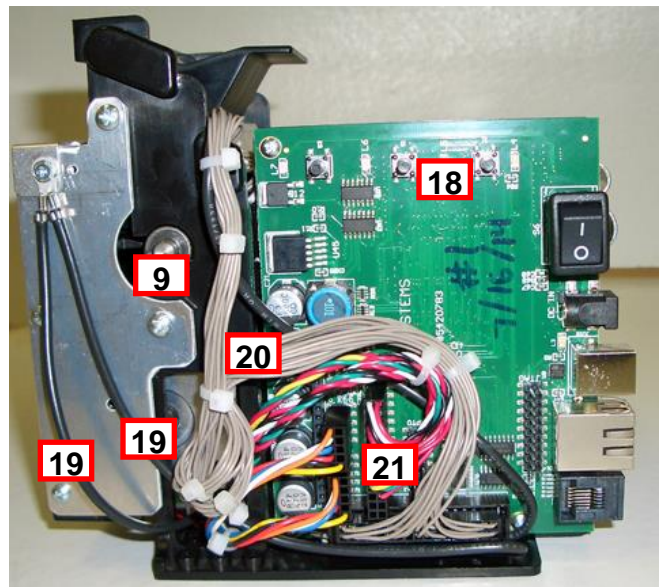300L4 print head installed on 423496-ONEL4 head mtg. plate

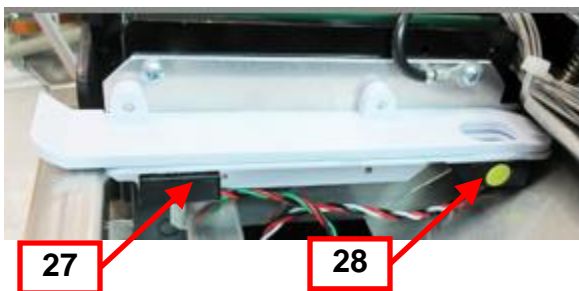423480Z-R Exit Deflector on Receipt roll holder printer

Above is a vertical Lemur-C

Universal Paper Guide (UPG) – In June of 2021 the UPG paper guide was phased-in for use on Lemur-C printers, except those with receipt roll holder. Printer serial number 459433 and higher.
Below shows an optional RADJW path printer

13.0 Troubleshooting Guide

This is a simplified troubleshooting guide listing some of the typical problems. It is not intended to provide technical details or repair methods, but can serve as a guide to fault isolation in the field. **As a safety precaution, all service to the printer should be done by qualified persons with power off and the AC cord unplugged from the printer**. **Following any procedure requiring the removal of covers and/or doors, please verify that they have been properly attached and fastened prior to operating the printer.** If you need additional help, please visit the link below
www.bocasystems.com/onlinesupportform.html

1. NO OPERATION, LED'S DON'T LIGHT UP UPON POWER UP
    a. Power the printer off and wait 30 seconds then power it back on.
    b. Check the power cord for proper installation at both ends.
    c Check that there is power at the AC outlet.
    d. Contact your system provider or BOCA for further assistance.

2. POWER IS ON BUT NO OPERATION
    a. Make sure the stock is being loaded properly into the printer. Consult section 6.0 Ticket Load Procedure.
    b. Perform routine maintenance on the printer. See below link
       https://www.bocasystems.com/documents/LemurC_RoutineMaintenance.pdf
    c. Default printer setting. With the printer powered off, hold down the center TEST button and power up
       the printer. Keep the TEST button head down for 10 seconds and release (printer will rest at this time).
    d. With the printer powered off, unplug the thermal head and turn on the printer. If printer works then
       replace the thermal head.
    e. Contact your system provider or BOCA for further assistance.

3. POWER ON BUT NO OPERATION (2 RED LED ARE FLASHING)
    a. Make sure there is no media jammed in the cutter area.
    b. Perform routine maintenance on the printer. See below link
       https://www.bocasystems.com/documents/LemurC_RoutineMaintenance.pdf
    c. Default the printer settings. With the printer powered off, hold down the center TEST button and power up
       the printer. Keep the TEST button held down for 10 seconds and release (printer will reset).
    d. Contact your system provider or BOCA for further assistance.

4. POWER IS ON BUT TICKET WILL NOT LOAD
    a. See # 2
    b. Make sure the print head/cam lock assembly is fully locked in the closed position.
       Consult "9.4 Thermal Print Head" section.
    c. Check that the ticket stock is being loaded correctly. Consult 6.0 Ticket Load Procedure section.
    d. Contact your system provider or BOCA for further assistance.

5. ERRATIC CUT POSITION
    a. Check for defective ticket stock. Is the black mark unevenly spaced apart or
       light in color? Is the ticket too wide for the paper path?
    b. Make sure the paper guild slider bar is properly adjusted (see 9.6 Ticket Width Adjustment).
    c. Perform routine maintenance on the printer. See below link
       https://www.bocasystems.com/documents/LemurC_RoutineMaintenance.pdf
    d. Replace ticket cut opto.
    e. Contact your system provider or BOCA for further assistance.

6. ERRACTIC PRINT POSITION
    a. See # 4

7. CUTTER KNIFE DOES NOT MOVE (if equipped)
    a. Check for blockage in the cutter area.
    c. Default printer settings. With the printer powered off hold down the TEST button and power up
       the printer. Keep the TEST button held down for ten seconds and release.
    c. Contact your system provider or BOCA for further assistance.

8.	POOR PRINT OUT (light print out)
a. Try a different stack of ticket stock.
b. Make sure the print head/cam lock assembly if fully locked in the closed position. Consult "9.4 Thermal Print Head" section
c. Clean print head. Consult "9.4 Thermal Print Head" section.
d. Replace thermal head. Consult "9.4.1 Thermal Print Head Replacement" section.
e. Contact your system provider or BOCA for further assistance.

9.	POOR PRINT OUT (white voids in print out)
a. Clean print head. Consult "9.4 Thermal Print Head" section.
b. Replace thermal head. Consult "9.4.1 Thermal Print Head Replacement" section.
c. Contact your system provider or BOCA for further assistance.

10.	NO PRINT OUT
a. Try a different stack of ticket stock.
b. Check head cable for electrical connection at both ends
c. Check to make sure head cable is plugged in properly into the thermal head.
d. Replace the thermal head.
e. Contact your system provider or BOCA for further assistance.

11.	PRINTER SKIPS TICKETS WHILE PRINTING
a. Check position and quality of black mark on the ticket stock.
b. Make sure the paper guild slider bar is properly adjusted (see 9.6 Ticket Width Adjustment).
c. Perform routine maintenance on the printer. See below link
   https://www.bocasystems.com/documents/LemurC_RoutineMaintenance.pdf
d. Replace ticket cut opto.
e. Contact your system provider or BOCA for further assistance.

12.	PRINTER SKIPS TICKETS AND DIES
a. See # 10.

13.	TICKET JAM ENTERING THE CUTTER AREA
a. Make sure the entrance to the cutter area is not blocked.
b Make sure the paper guild slider bar is properly adjusted (see 9.6 Ticket Width Adjustment).
b. Contact your system provider or BOCA for further assistance.

14.	ETHERNET WILL NOT CONNECT
a. When the Ethernet cable in connected to the printer the DATA LED should start flashing. On printer s/n 500970 & higher you will need to check on the Ethernet connector itself. If it does not flash:
   - Check to make sure the Ethernet setting is not set to NO. The self-test ticket printout shows the status.
    - Check to make sure the Ethernet connect on the cable is good.
b. Your Network IP server may not to support the use of a DHCP protocol and require the Ethernet to be set to a static IP address. Ethernet Interface Addendum of the FGL programing guide reviews how to do this.

15.	WI-FI WILL NOT CONNECT
a. Make sure you are connecting to Wi-Fi router that supports 802.11b devices. The router also needs to support 1 and 2 MBps data rates.
b. On initial setup have the printer as close as possible to the Wi-Fi router.
c. Check to make sure you have the correct security values for the Wi-Fi router you are trying to connect to.
d. If you have multiple routers change the channel setting to 1, 6 or 11. Multiple routers using the same channel will cause connection and drop single issues.

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APPENDIX A - VERTICAL PRINTER INSTALLATION

Prepare the counter top by cutting a rectangular hole in accordance with the dimensions specified for your printer model. **NOTE: The table or counter top must be able to support at least four times the weight of the printer.**
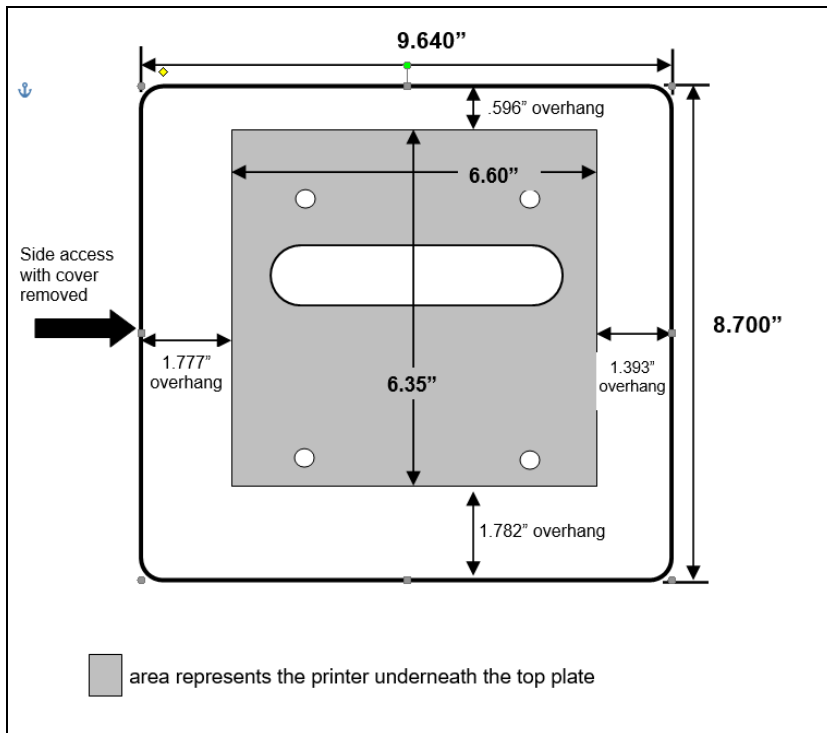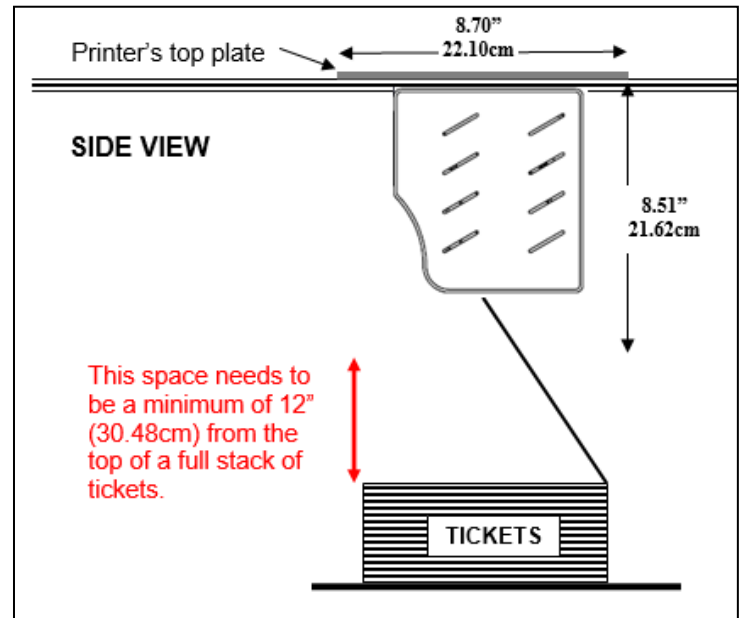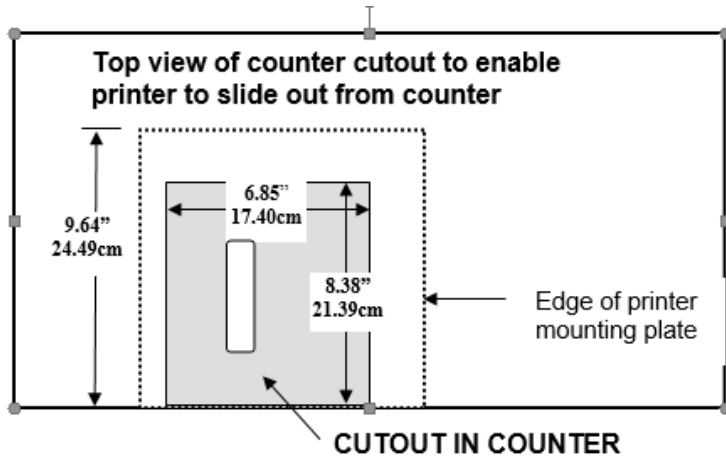
Top view of standard 421421C-P top plate

If you are looking to make the cutout just big enough to fit the printer then we recommend making the cutout 0.50" larger than the height and width of the printer.

- Attach the top plate to the printer using only the supplied mounting hardware.
- Insert the printer with the top plate attached into the countertop cutout.
- Attach the power cord and the interface cable to the printer.
- Turn the power switch to the ON position.
- The printer is now ready for ticket stock to be loaded.

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APPENDIX B –ETHERNET PARAMETERS

Each Boca Ethernet Printer is assigned a unique MAC address based in part on the printer's serial number. All Boca printers are factory configured in DHCP enabled mode. (Exceptions may be made by special request.) If the printer is unable to get a dynamic IP address from the customer's network in the allotted time period (about four minutes). You can select a different fixed IP address either via a Web Browser (see below).
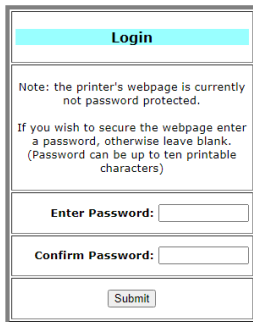
ETHERNET – Quick Installation Guide

1. Connected to the printer's IP via a web browser. The printer and web browser need to be on the same network.

   When a printer is first powered on, it will try to obtain an IP address from the Network IP servers. After the printer has been left on for 4 minutes, press the center TEST button to printout a self-test ticket. An IP address will be printed on this ticket. If the printer did not get an IP address from the IP server, then it will default to using:
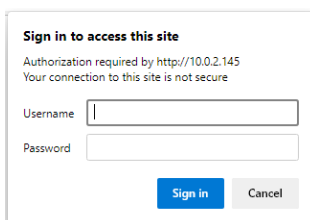
   - For "N" version firmware 010.000.000.192
   - For "R" version firmware 169.###.###.###

   Type the IP address found on the self-test ticket in a web browser. For example, if the printer came up with its default IP 169.254.010.052 they you would type 169.254.10.52 in the browser.
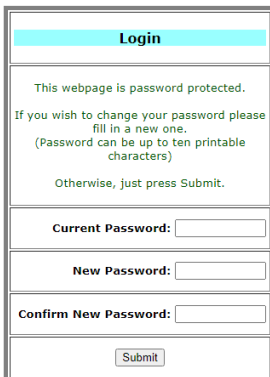
2. If printer had "N" version firmware you will see the below. Click on Submit button to go to the configuration page if you do no was to pass work protect.

Login
Note: the printer's webpage is currently not password protected.
If you wish to secure the webpage enter a password, otherwise leave blank. (Password can be up to ten printable characters)
Enter Password: [   ]
Confirm Password: [   ]
Submit

3. If printer has "R" version firmware you will see the below. Username = boca & Password = printer. Your IP address will be different than what is shown below.

   Sign in to access this site
   Authorization required by http://10.0.2.145
   Your connection to this site is not secure

   Username [   ]
   Password [   ]

   Sign in   Cancel

   The menu will come up, click on Submit button to go to the configuration page if you do no was to pass work protect.

Login
This webpage is password protected.
If you wish to change your password please fill in a new one. (Password can be up to ten printable characters)
Otherwise, just press Submit.
Current Password: [   ]
New Password: [   ]
Confirm New Password: [   ]
Submit

4. Below shows the configuration page

Boca Systems' Printer Configuration Page

Firmware :	HP46N166 / COM46N166 / SH00
Serial number :	488827
On Time :	000:00:03:27 d/h/m/s
MAC ID :	00.0D.71.07.75.7B

FACTORY MENU : items with an * should not be changed or selected without first consulting Boca Systems.

BAUD RATE=	9600,N,8,1 ⌄	MINI/MICRO=	MINI ⌄	PRINT SPEED=	3 ⌄	DIAGNOSTIC MODE=	NO ⌄
TICKET TYPE=	SPECIAL TICKET ⌄	STATUS ENABLED=	USB/SER ⌄	TRANSPARENT MODE=	NO ⌄	PAPER MODE=	NO ⌄
*HEAD DPI=	300 ⌄	SPECIAL HEAD=	NO ⌄	PATH TYPE=	PATH1 ⌄	BUFFER MODE=	MULTIPLE MODE ⌄
CLEAR DOWNLOAD=	NO ⌄	DEFAULT SETTINGS=	YES ⌄	CUT1 COUNT=	16 (1-200)	CUT2 COUNT=	16 (1-200)
*2-SIDED PRINTER=	NO ⌄	PARK TICKET=	NO ⌄	TICKET MODE=	MULTIPLE ⌄	PRINT MODE=	THERMAL ⌄
PRINT INTENSITY=	NORMAL ⌄	SKI MODE=	NO ⌄	FLASH ACK MODE=	NO ⌄	SOFTWARE BUSY=	NO ⌄
BI-DIRECTIONAL=	NO ⌄	USB=	YES ⌄	ACKNOWLEDGE=	NORMAL ⌄	ORIENTATION=	NORMAL ⌄
FGL COMMANDS=	YES ⌄	*HIGH SPEED MODE=	NO ⌄	*SHUFFLE MODE=	NO ⌄	*CUTTER TYPE=	BOCA ⌄
*CUTTER SPEED=	NORMAL ⌄	RFID=	NO ⌄				
ETHERNET=	DHCP/SUB/GATE ⌄	IP ADDRESS=	010.000.002.031 (Enter 12 digits)	SUBNET MASK=	255.255.0.0 ⌄	DEFAULT GATEWAY=	010.000.002.002 (Enter 12 digits)
SPEED/DUPLEX=	AUTO-NEGOTIATE ⌄	USB DEVICE TYPE=	PRINTER ⌄	BLUETOOTH=	NO ⌄	AUTO CASH DRAWER=	NO ⌄
MAGNETICS=	NO ⌄						

Configure SNMP

SAVE CHANGES
(Press Save button to store)

5. If you are going to set a static IP address then you will need to change the ETHERNET setting to YES. Set IP address, Subnet Mask and Default Gateway to the values you want.

6. If you experience any problems, please refer to the Ethernet section of our FGL Programming Guide.

Click here to return to >

APPENDIX C – WINDOWS USB DRIVER INSTALLATION GUIDE

Do not connect the printer to your computer's USB port until instructed.

Please contact your software provider to confirm if the use of our driver is required for their ticketing software. We recommend that the print driver is installed by either your system administrator or IT support staff.

These print drivers are intended to be installed on 64-bit Windows PC platforms from Windows 7 forward. This guide will cover the more common Windows versions - 10 & 11. The ARM platform is not supported.

Below is a link that provides details on how to installed the print driver:

http://www.bocasystems.com/documents/WindowsDriverInstallGuide.pdf

If you were not able to install the BOCA print driver using the above steps, please take a screenshot of the "printers and drivers" dialog and attach it to the support form located at www.bocasystems.com/onlinesupportform.html

APPENDIX D – MAC DRIVER INSTALLATION GUIDE

Do not connect the printer to your computer's USB port until instructed.

Please contact your software provider to confirm if the use of our driver is required for their ticketing software. We recommend that the print driver is installed by either your system administrator or IT support staff.

Below is a link that provides details on how to installed the print driver:

www.bocasystems.com/documents/MAC_Driver_Install_Guide_2019.pdf

If you were not able to install the BOCA print driver using the above steps, please take a screenshot of the "printers and drivers" dialog and attach it to the support form located at www.bocasystems.com/onlinesupportform.html

APPENDIX E – TESTING A LEMUR

Boca Systems, Inc. has developed various program that allows customers to communicate from a host computer or mobile device to the printer. Below are the various configure and test programs we offer:

WINDOWS: (Allow connection via Ethernet/ Wi-Fi, Parallel, Serial, USB-HID interfaces and print driver connection)
https://www.bocasystems.com/documents/Testing%20a%20BOCA.pdf

MAC: (Allows Ethernet/Wi-Fi, USB-HID interfaces or print driver connection)
https://www.bocasystems.com/documents/Testing%20a%20BOCAmac.pdf

iPad: (Allows Bluetooth and Ethernet/Wi-Fi interfaces connection)
https://apps.apple.com/us/app/bocaprinter/id951179236

Click here to return to >

APPENDIX F – DOWNLOADING SOFTWARE COMMANDS

For those Lemurs model printers without LCD display the menu setting changes may be done by utilizing the software commands listed below. This is best done using our configure and test program (see Appendix C)

If needed, the printer may be defaulted back to its originally factory settings as follows. With the printer powered off hold down the TEST button and then power up the printer. Keep the TEST button held down for 10 seconds and release (the printer will reset at this time).

Once you have your interface or driver selected then clicks on the "Enable FGL for PCL" button. *For the MAC customer program under the Select Printer Operation choose "Enable FGL Commands (HP)".* Click on the Yes Click the Yes button and then the OK button.
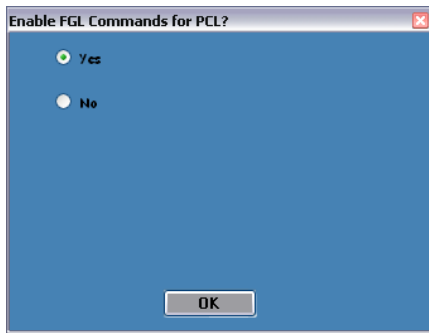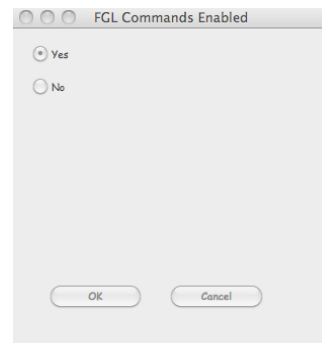
| Window | MAC |

Click on the "Send Text" button. *For the MAC customer program under the Select Printer Operation choose "Send Text Commands".* Once the Text Data box comes up you type the text command in the Data input box. Then click on the OK button and the text data will be sent to the printer.
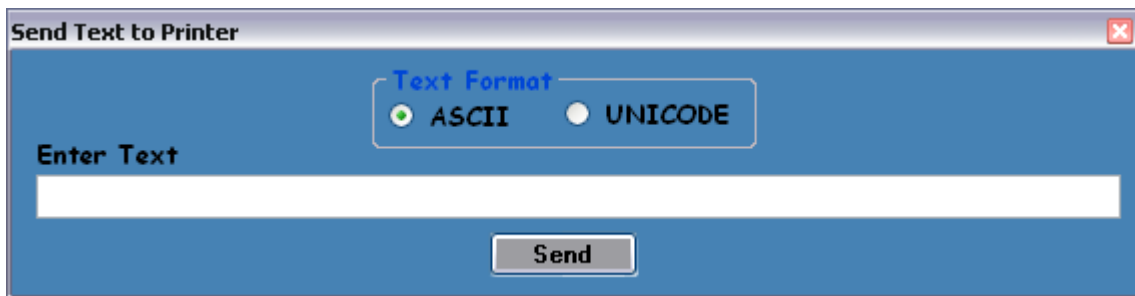
You may click on the HELP button at any time to open up the help window.

The CONFIGURATION TEST TICKET SUPPLEMENT section of the FGL programming guide shows all of the commands necessary to access the operator control panel functions.

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APPENDIX G– BLUETOOTH CONNECTION

If your printer is equipped with an optional Bluetooth interface port then you will see the following in the Interface 2 or Interface 3 field of the serial number tag.

- **BT LE -** Printer is configured for Bluetooth Classic Mode.
- **BT+** - Printer is configured for Bluetooth Classic Mode.
- **BLE+** - Printer is configured for Low Energy Mode.
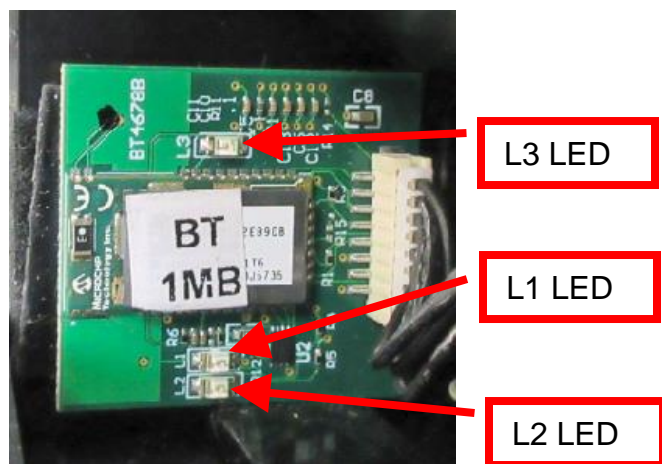
The printer will also have the Bluetooth interface board mount onto one of the paper guides rails (see below photo).

- L1 LED – Will only illuminate when an Android or iPad device is paired with the Bluetooth board.

- L2 LED – Will illuminate, indicating board has power.

- L3 LED – Flashing all the time.

BLUETOOTH CLASSIC

If the printer has optional Bluetooth interface and it is enabled then you should see BLUETOOTH = ENABLED on the self-test printout that is issued when the printer's center TEST button is pressed.
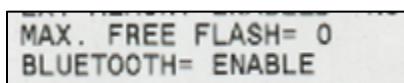
Android Connection

The below provides an overview of an Android connecting to a BOCA printer with optional Bluetooth interface.

1. Swipe down from the top of the screen.
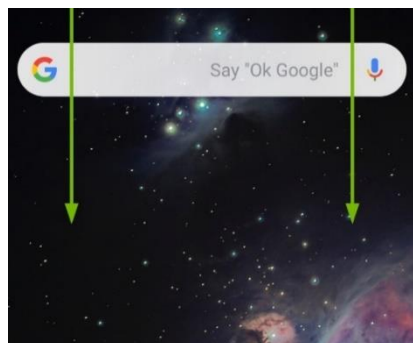
2. Press and hold the Bluetooth icon to access the Bluetooth screen.

Press and hold
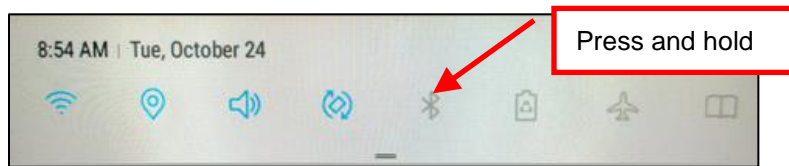
3. If Bluetooth is OFF then turn ON.

Swipe right to turn ON
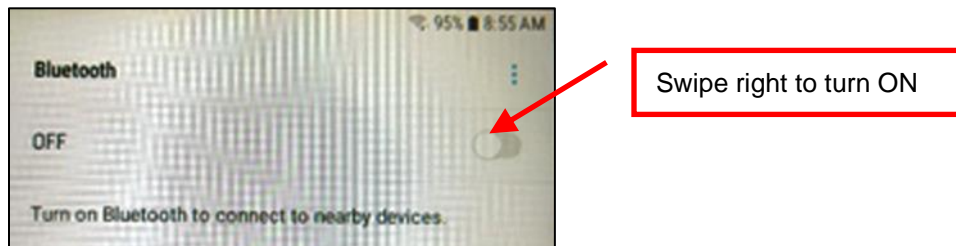
4. Once turned ON, a list of Bluetooth devices will be shown. Under AVAILABLE DEVICES you should see the serial number of the printer you are trying to pair to (Boca######) For example if your printer was serial number 523706 then you would see Boca523706.
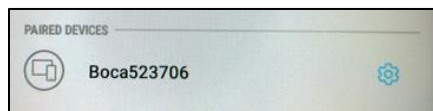
Tap on the BOCA printer you want to pair.

Tap on printer you want to pair.
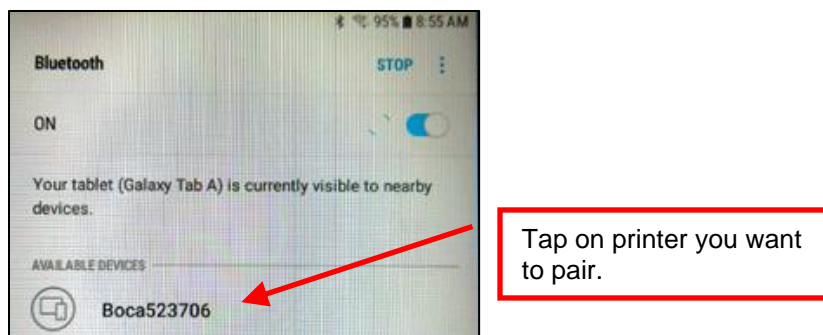
5. You will see the below during the pairing process.

6. You will see the below once the printer has been paired to the device.

iPad Connection

The below provides an overview of an iPad connecting to a BOCA printer with optional Bluetooth interface.

1. Touch the setting icon.

2. When setting menu comes up click on Bluetooth.

3. Turn Bluetooth ON if it was OFF.

4. Under DEVICES you should see the serial number of the printer you are trying to pair to (Boca######) For example if your printer was serial number 000000 then you would see Boca000000
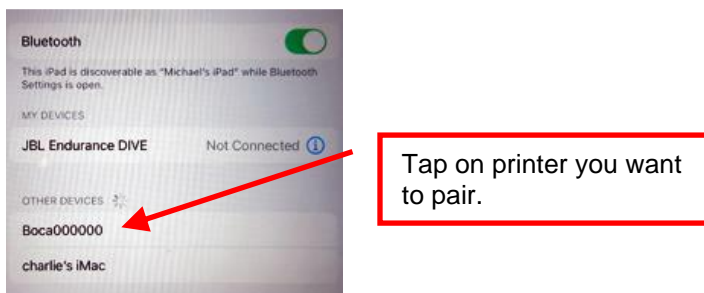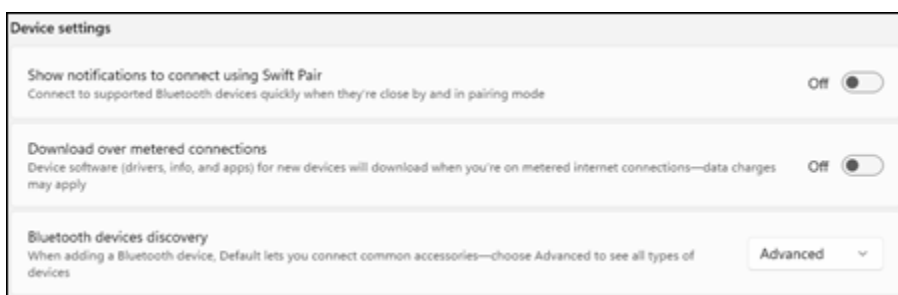

5. Touch on this serial number to enable the iPad to pair to it.

6. The iPad should show that it is connected when successfully paired.

7. When the printer is powered off the iPad will disconnect from the printer.   When the printer is powered on you will need to manually reconnect to the printer.

You may use our iPad test program that is on the Apple store to test the printer. The search will need to be done via the iPad and search name would be *BocaPrinter* (https://itunes.apple.com/us/developer/boca-systems/id951179235).

Windows 11 Connection

The below provides an overview of a Windows 11 connecting to a BOCA printer with optional Bluetooth interface.

1. In your Windows Bluetooth device settings, set Bluetooth devices discovery setting from Default to Advanced. The below link reviews how to set Bluetooth to advanced setting.
   https://help.cricut.com/hc/en-us/articles/16511514972183-Windows-11-Bluetooth-Devices-Discovery-Issues#:~:text=Open%20open%20Bluetooth%20settings%20and,setting%20from%20Default%20to%20Advanced

2. When you do your search, you should now see Boca######. In the below example my test printer is serial number123456, you should see Boca522557. Click on it to pair your PC to the printer and follow the instructions provided.
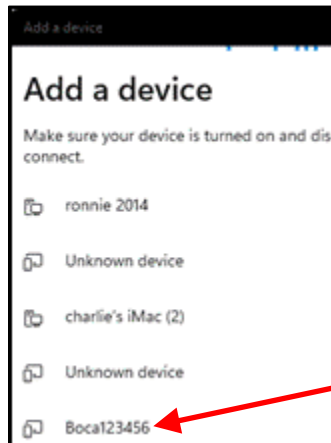

Click on printer you want to pair.

3. Once connected go to Device Manager settings, the blow link shows various ways to open Device Manager.

   https://help.cricut.com/hc/en-us/articles/16511514972183-Windows-11-Bluetooth-Devices-Discovery-Issues#:~:text=Open%20open%20Bluetooth%20settings%20and,setting%20from%20Default%20to%20Advanced

4. Once open, look under Ports (COM & LPT) and you should see Standard Serial over Bluetooth link (COM#). In the below example W11 provided two COM ports, which the lowest number COM port should be used. This this case I would use COM5. Your COM port values may be different.
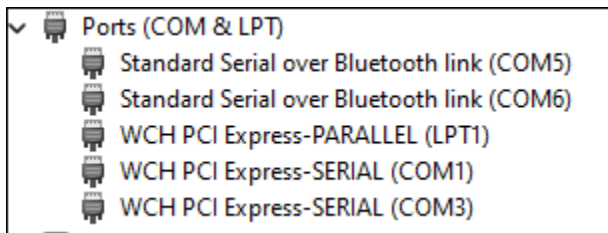
- Your software application would then use this COM port connection to communicate to the printer through.

The Bluetooth will need to be disabled if you choose to communicate to the printer via the USB port.

The below command may be sent. This command only needs to be sent to the printer once to take permanent effect and the printer will reset upon receipt of said command. The Appendix E DOWNOADING SOFTWARE COMMANDS section provides download procedures.

<bld> = DISABLE

<ble> = ENABLED

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APPENDIX H – CONFIGURE WI-FI CONNECTION

To use the wireless capabilities of a printer equipped with the optional wireless interface (Wi-Fi), it will first be necessary to setup the printer with information and security settings that match the settings of the compatible wireless server/router you are connecting to. Printer purchased after April-2014 is able to support IEEE 802.11g compatible wireless server/router. Printers purchased after July 2020 can support 802.11 b/g/n wireless networks.   *The RJ12 serial port will not work with a printer that has optional Wi-Fi interface.*

Our Wi-Fi printer is designed to work with a wireless router.

We recommend that the Wi-Fi be configured by either your system administrator or IT support staff who is knowledgeable about your network and Wi-Fi configurations.

You need to confirm / know the following:

- Wi-Fi router is a b/g/n wireless device that supports 2.4 GHz speed (we do not support 5 GHz speed)?
- If the printer needs to be configured for DHCP or Static IP address?
- SSID name of the router you are connecting to?
- What security mode is required (Disabled, WAP, WAP2 or WEP)?
- If security mode is required then need to know said Pass Phrase/Shared Key (WAP or WAP2) or WEP Encryption/ Key value?

You must use our Configure and Test program for Windows or Customer program for MAC (see Appendix F) and be connected to the printer via a wired connection.

- If connection via Ethernet, use the IP address that is on the self-test ticket.

- If connecting via USB then the appropriate print driver needs to be used:

    - **MAC** – https://bocasystems.com/documents/MAC_Driver_Install_Guide_2021.pdf
    - **WINDOWS** - http://www.bocasystems.com/documents/WindowsDriverInstallGuide.pdf

1. For initial install the printer must be as close as possible to the Wi-Fi router itself. This will ensure maximum single strength. Once you have confirmed the Wi-Fi is operational, the printer may be moved to its desired location.

2. You need to confirm you are able to print a ticket using our Configure and Test program for Windows or Customer program for MAC (see Appendix C). The printing of a ticket via this program will confirm it is communicating with the printer.

3. In the Configure and Test program for Windows click on the "Setup Wi-Fi button. In the Customer program for MAC select "Setup Wi-Fi" under the "Select Printer Operation".

4. When the Configure Printer Wi-Fi and Security menu comes up you have a few choices.
    a. **Wireless Mode** – Infrastructure (this is default setting). DO NOT SELECT Ad Hoc (peer to peer)

    b. **Disable Wireless** – You would choose this if you wanted to disable the Wi-Fi
       Enable with Static IP – This would be for networks that require a static IP address.
       Enable with DHCP IP - Automatically attempts to get an IP address from Local Server (this is the most common one and the one we will be using for the rest of the steps).
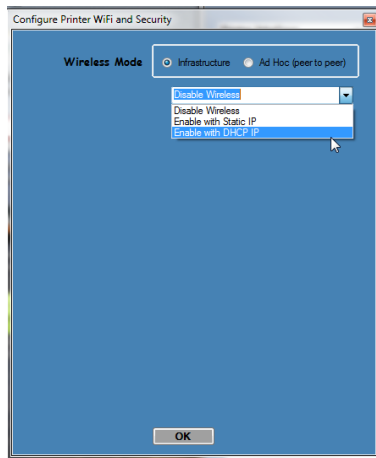
5. You will need to enter the **SSID value**. The Service Set Identifier is a 1 to 32 byte string. This normally would be the name of the Wi-Fi router you are connection to. **Please note the ID is case sensitive**.

6. Security Mode: you will need to choose the security mode that is appropriate for your WiFi router.
   Disable – Allows the user to communicate through the wireless network without any security encryption involved.
   WPA – Go to
   WPA2 – Go to
   WEP – Go to
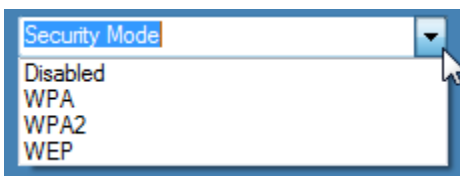
7. **WPA** and **WPA2** Personal Security Mode – Allows the user to communicate through the network using WPA or WPA2 Personal wireless encryption. When this security encryption mode is chosen it will be required to enter the "WPA Shared Key" for the local wireless network. Some networks also enforce the use of an optional key value. The optional prompt field is provided for those networks. Finally click on OK to have these values transmitted to the printer (through the cable). The printer will reset and upon re-initialization it will establish wireless communication with the local network. The handshaking involved in establishing wireless communication can take up to 30 seconds. Go to .

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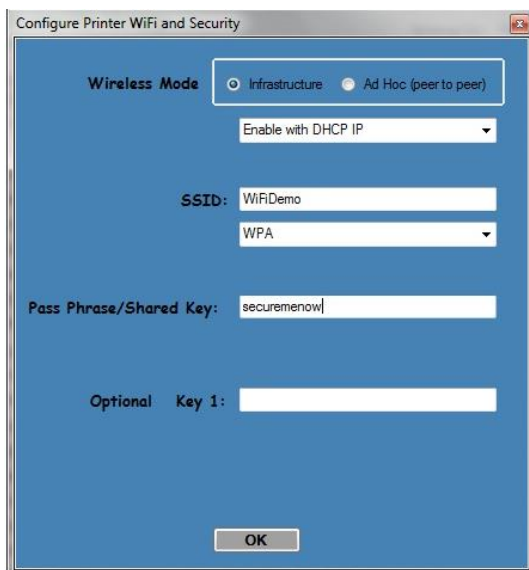
8. **WEP** Security Mode – Allows the user to communicate through the network using WEP wireless encryption. With WEP one can select 64 bit or 128 bit encryption. When the security encryption mode is chosen it will be required to enter the "Pass Phrase" for the local wireless network. Some networks also enforce the use of a default transmit key. If needed select one, else leave it set to "1". Next the four security key values will have to be entered to match those of the local network. Finally click on **OK** to have these values transmitted to the printer (through the cable). The printer will reset and upon re-initialization it will establish wireless communication with the local network. The handshaking involved in establishing wireless communication can take up to 30 seconds. Go to step #9.

9. The printer will reset. Depending on your operating system, this rest may happen less than 60 seconds or as long as 5 minutes. Upon re-initialization it will establish wireless communication with the local network. Depending on your network, a connection can be established in less than 60 seconds or as long as 5 minutes. If it fails then see item #13 on the Troubleshooting Guide.

10. Press the TEST button to print out a self-test ticket. This ticket will show the IP address that was acquired by the printer. You may use the configuration and test program to test this interface connection. You would run the program like you are connecting to an Ethernet printer and enter in the IP address that is shown on the self-test ticket.

Please go to the link below if you need assistance in configuring your Wi-Fi connection.
www.bocasystems.com/onlinesupportform.html

If your printer has an options Ethernet port then this port will be disable while the printer is in Wi-Fi mode. The printer is not able to run both Ethernet and Wi-Fi at the same time. If you need to go back to using the Ethernet port then the Wi-Fi needs to be disable. This may be done by repeating the above procedure but at step # 4 choosing **Disable Wireless.**

Click here to return to >

APPENDIX I – RECEIPT MODE

The Lemur-C may be configured from the factory for use with receipt roll stock.

The leading part of the media should have a clean edge and be as flat as possible. If the media is curled upwards then it will need to be flatten prior to loading into the printer. The loading process works best with the media having as a square, straight edge. Cut the paper in a suitable angle.
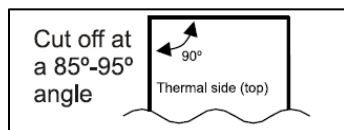
Also cutting a 45° angle on each side will help the flimsy media load through the paper path better.

Ticket Load Procedure
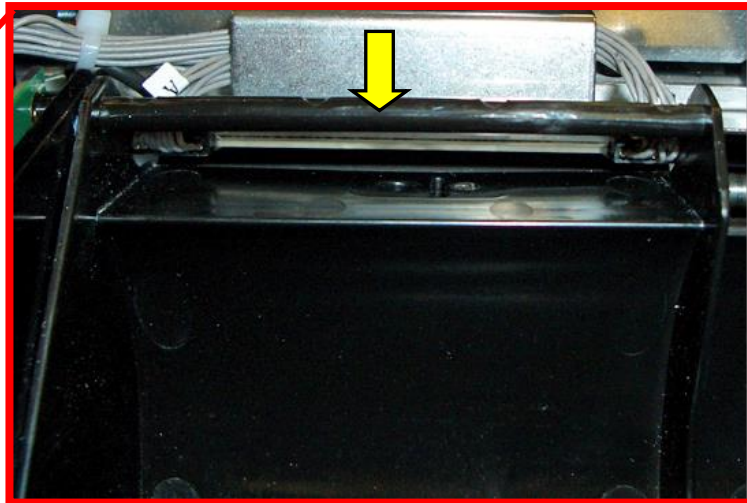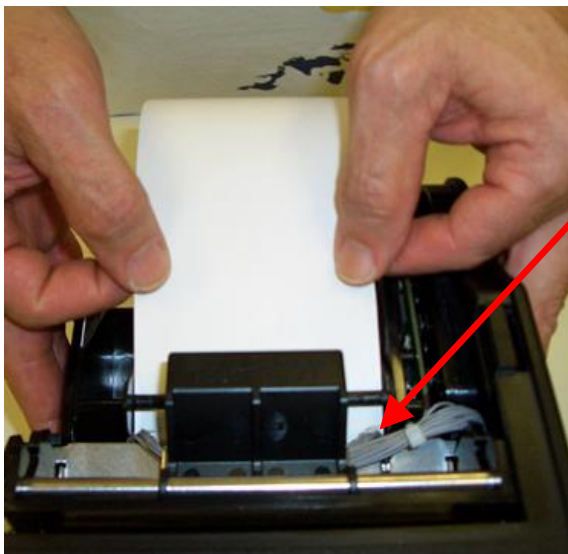
- Turn the printer on and wait five seconds. If your printer has an optional LCD then it will display PAPER OUT (the red CHECK PAPER led will be illuminated).

- You need to make sure the leading edge (first part that is feed into the printer) has a nice clean edge. Not crumpled or tape stuck to it.

- Begin loading the tickets through the entrance slot with a smooth motion until it stops. At this point the printer will automatically grad and positions the receipt paper.

- After the ticket is automatically positioned (the READY LED will be illuminated), press the TEST button located on the control panel to print a test ticket. The printer is configured when it leaves the factory to be particle cut the receipt. Self-test printout should look similar to the image below.
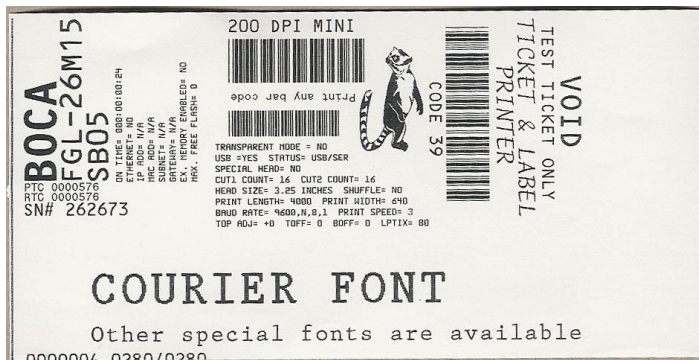
- Printer is now ready for operation.

Click here to return to >

LOAD & CUT OPTO

Once a year the opto eyes should be blown off with air. This interval will vary depending upon the environment and the quality of the ticket stock. The print head will need to be removed to gain access to the optos.

Blow out with air in these areas
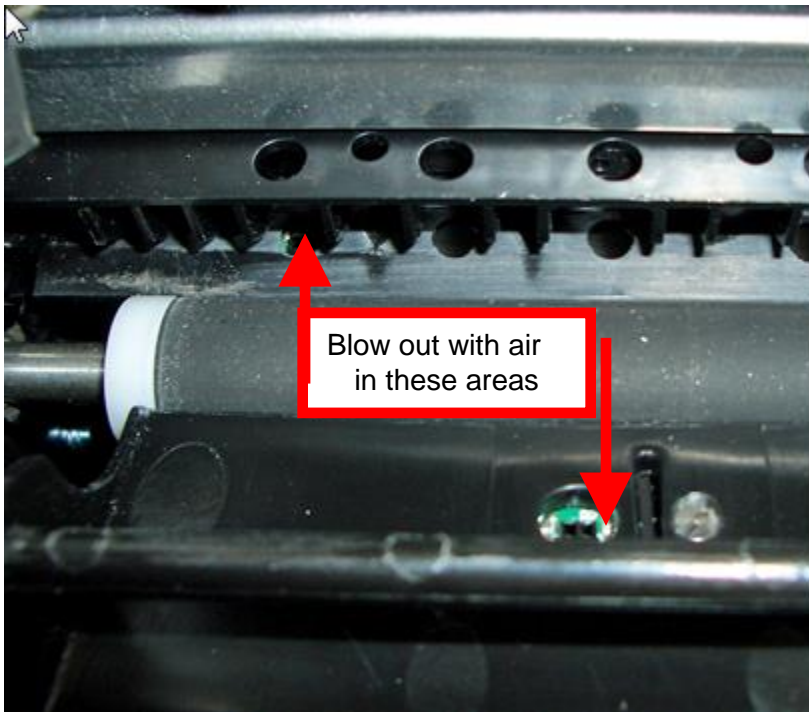
The below items are serviced just like a standard Lemur-C printer.

Thermal head – See 8.1.3 Thermal Print Head

Platen – See 8.1.4 Platen (Rubber Driver Roller)

Cutter Assembly – See 8.2 Cutter Assembly

General Cleaning

The interior of the printer should be cleaned whenever there is a visible accumulation of dust. Use a small vacuum for cleaning. Be careful not to jar any of the printer's parts loose.

APPENDIX J – Optional Roll Holder Adaptor Kit (P/N 424195)

Kit will include floor plate (2pcs), one roll holder arm, one spindle, one adjustable stopper and various mounting screws.
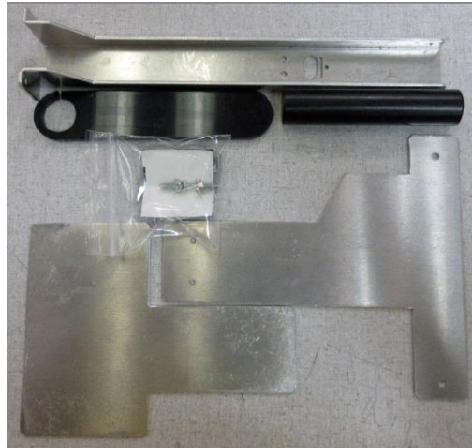

Part may vary from above photo

1. Attach the spindle onto the roll holder arm using the two Philip ¼" Hex head screws.
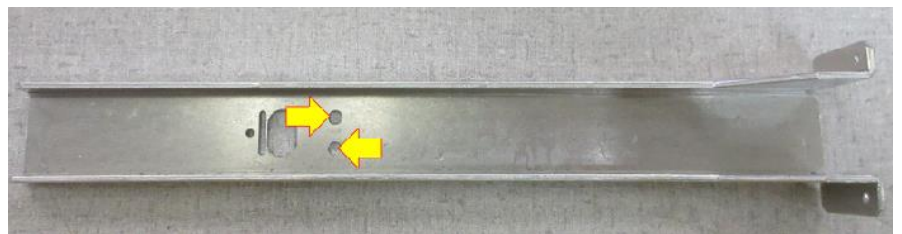
2. Affix the rubber feet to the bottom roll holder arm plate.
   Align the two floor plate pieces so that the two screw holes align. Make sure the piece with the rubber feet is on the bottom with rubber feet facing up. Install the two self-tapping 3/16" hex head screw and tighten.
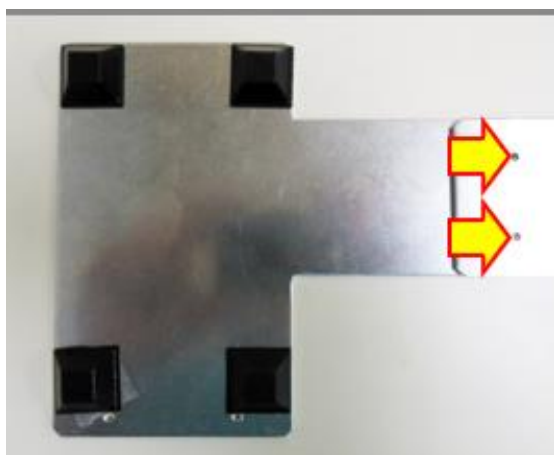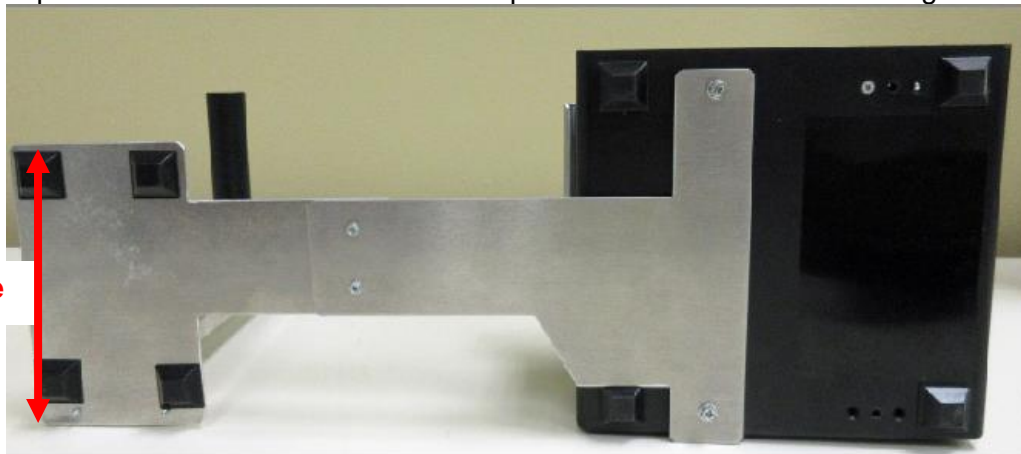
3. Install the floor plate onto the bottom of the Lemur UPG printer. Align the two holes on the floor plate up with the two mounting holes on the printer. Install the two self-tapping 1/4" hex head screws and tighten.
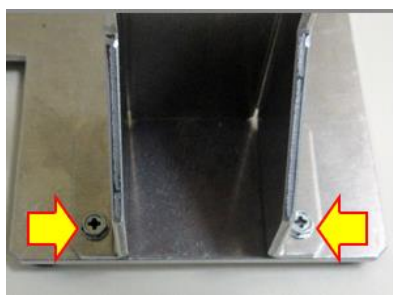

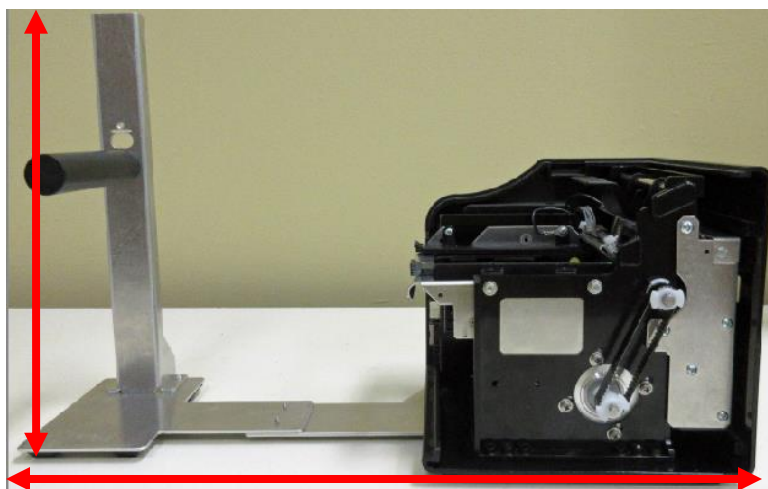4. Flip both the Lemur and attached floor plate so all rubber feet are facing down.

5.00" wide

5. Align the two holes on the roll holder up with the two mounting holes on the floor plate. Install the two self-tapping 3/16" hex head screws and tighten.
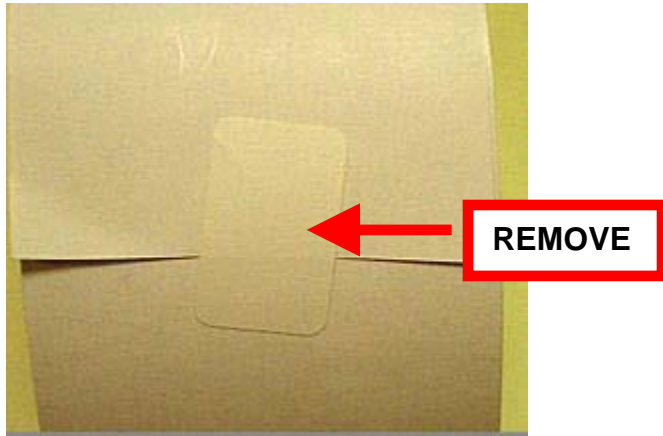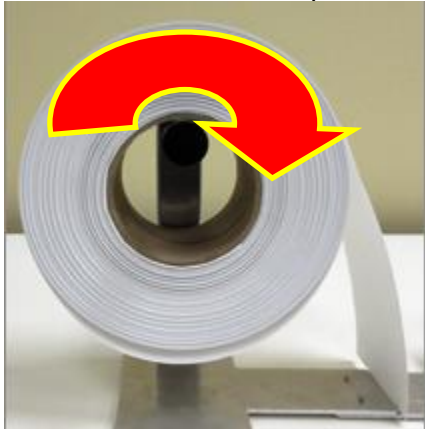

10.50" high

16.0" length

6. Tear off a full turn of the paper or media from the new roll. **Caution**: It is important that the outer end of the media is free of glue or other adhesive substance that may cause a paper jam or damage the print head.

7. Place the roll onto the spindle so the media turns in a clockwise direction.

8. Install the adjustable stopper disc onto the spindle and slide into place. The stopper should not be binding against the roll to prevent it from moving freely.
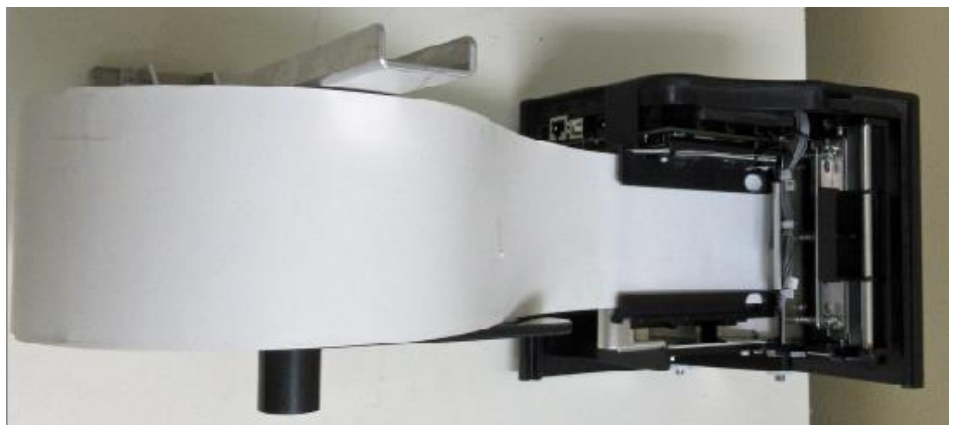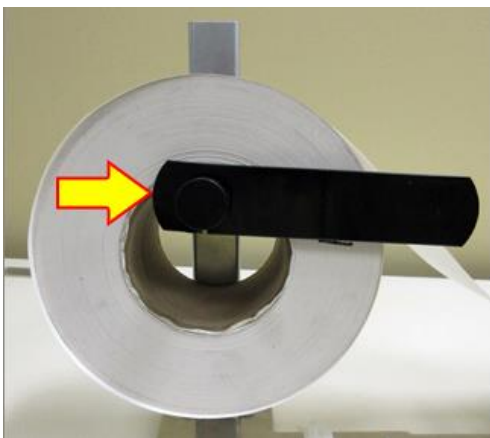
Click here to return to >

APPENDIX K – SERVICE PLANS

For enhanced warranty coverage or out of warranty printer, we offer two types of service plans.

GOLD SERVICE
- Printer repair at BOCA facility (3 business day turnaround)
- Replace defective parts (ship within one business day) – customer must return defective parts
- Free printer and parts return via UPS ground service (other delivery options to be billed to the customer)

PLATINUM SERVICE
- Printer repair at BOCA facility (3 business day turnaround)
- Replace defective parts (ship within one business day) – customer must return defective parts
- Free printer and parts return via UPS ground service (other delivery options to be billed to the customer)
- Replacement printer provided within one business day, if requested. (This service will become available one week after the platinum plan begins.)

The following items are not covered by the service plans:
- **Preventative Maintenance** – the customer is responsible to provide a reasonable level of preventative maintenance as described in section 9 of this manual.
- **Negligence** – parts damaged by misuse or negligence, including damage due to defective ticket stock, is not covered
- **Pre-existing conditions** - all printers must be in good working order prior to entering the plan. The customer will be invoiced for any parts and repair work needed on printers which were defective prior to the start of the maintenance plan. BOCA reserves the right to make this determination unilaterally.
- **Incoming Shipments** – the customer is responsible for shipping charges to BOCA.

Please visit the link below for the latest pricing on our service plans.
www.bocasystems.com/serviceplans.html

APPENDIX L – TECHNICAL SUPPORT

Please go to the link below if you require technical support with your BOCA printer. There is no fee for initial email support.

www.bocasystems.com/onlinesupportform.html

PHONE / EMAIL SUPPORT - BOCA provides free technical support via email for all printers under warranty or service contracts. (Phone support may be provided for covered printers at BOCA's sole discretion as needed.) Email support for non-warranty/non-contract printers is billable at $100.00 per incident. However, BOCA may (at its sole discretion) choose to waive this fee for customers in good standing. Phone support for non-warranty/non-contract printers will be billed at a rate of $100.00/hour for Level 1 support and $200.00/hour for Level 2 support.   Billing time will be rounded up to the nearest hour. A valid credit card number is required for phone support payments.

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