

Boca Systems

LEMUR TICKET PRINTERS

Operator's Manual

Lemur



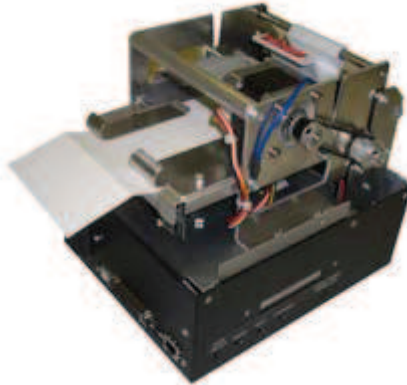
Lemur-S



Lemur-2



Lemur-K



Lemur-2K



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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 insure 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 Introduction

The [Lemur series printers](#) are direct thermal ticket printers that may be purchased with optional integrated cutting mechanism and LCD display. This manual will provide the user with general information regarding printer set-up, configuration and troubleshooting. Please read the important safety information section before installation is conducted. Review the [programming guide](#) for additional details.

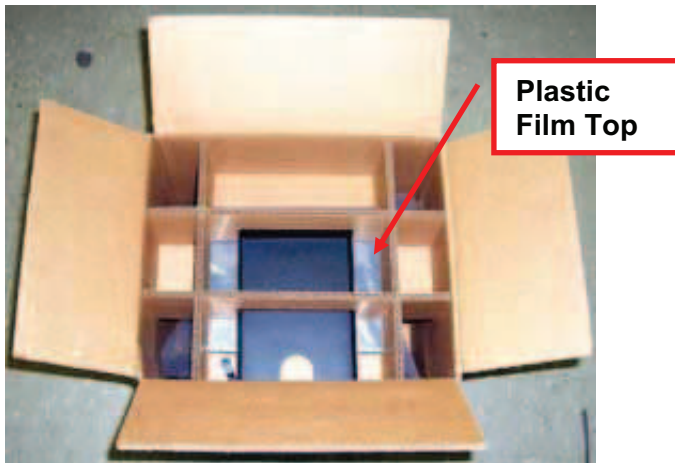
2.0 Unpacking the Printer

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) Hopper (if applicable)
- c) AC power cord
- d) Interface cable (optional)
- e) Mounting Plate (optional)



NOTE: When shipping, make sure plastic film is placed on the bottom and top of printer.

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3.0 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.

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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4.0 Installation

The [Lemur series printer](#) was designed to be mounted either on a desktop or shelf (horizontal model) or vertically in a counter top (see [Appendix B](#) 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. On a Lemur-S model printer you will need to remove the side cover.
- Attach the AC cord and interface cable into the proper connectors.
- Install ticket hopper (if applicable) to catch the tickets. Lemur printer without a cutter won't have a ticket hopper.
- Turn power on. The LCD will display PAPER OUT and the red Check Paper led will be illuminated. You will hear the cutter motor cycle if the printer contains a cutter.
- Begin loading tickets through the entrance slot with a smooth motion until the printer automatically positions the ticket. See section [5.0 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_specs.html for black mark layout specs.

- After the ticket is automatically positioned (the green READY led will be illuminated), press the 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.



Above sample was printed on a 4"x6" ticket using a 300dpi Lemur without cutter.



Above sample was printed on a 2" x 5.5" ticket using a 200dpi Lemur with cutter.

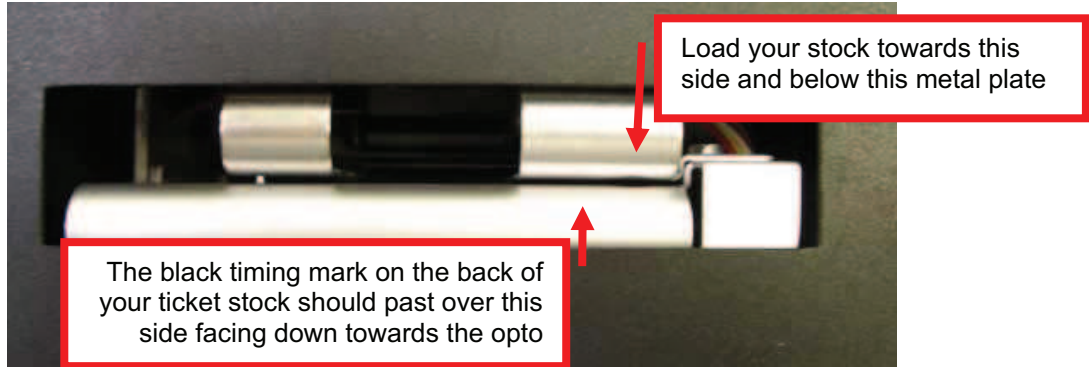
Your printout may vary depending on printer configuration and ticket stock used.

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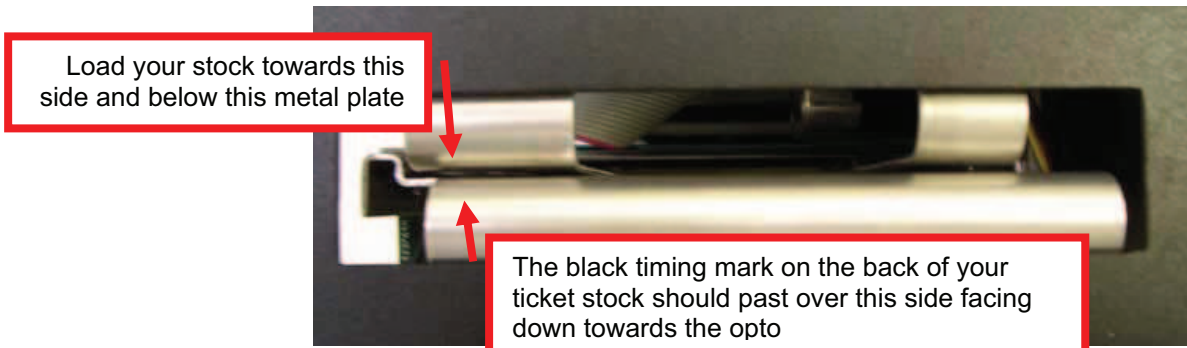
5.0 Ticket Load Procedure

Turn the printer on and wait five seconds. The red CHECK PAPER led will be illuminated (if your printer has an optional LCD then it will display PAPER OUT). 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.

NOTE: see [Appendix C](#) for loading of Lemur-2 and Lemur-2K printers.

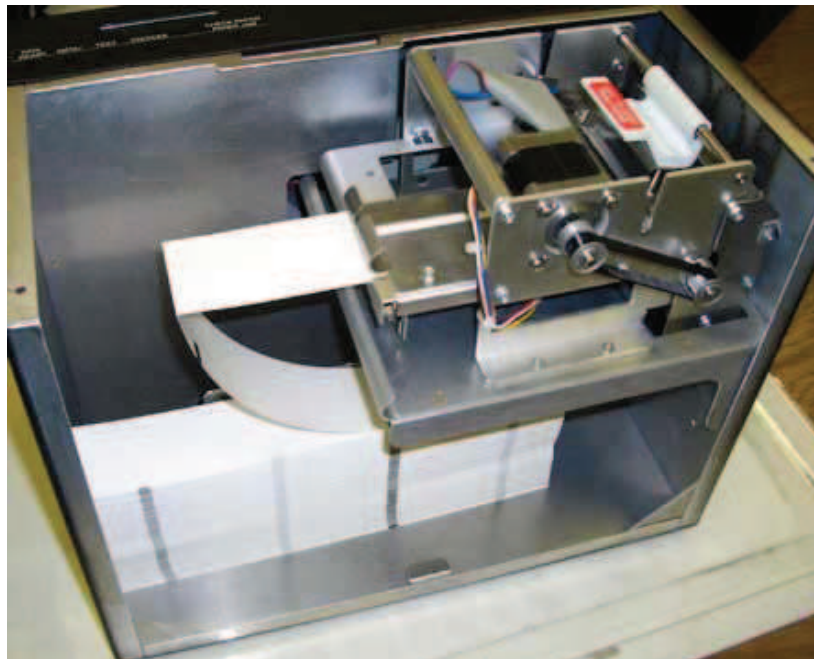


Reverse Adjustable (RADJW & RADJ4)



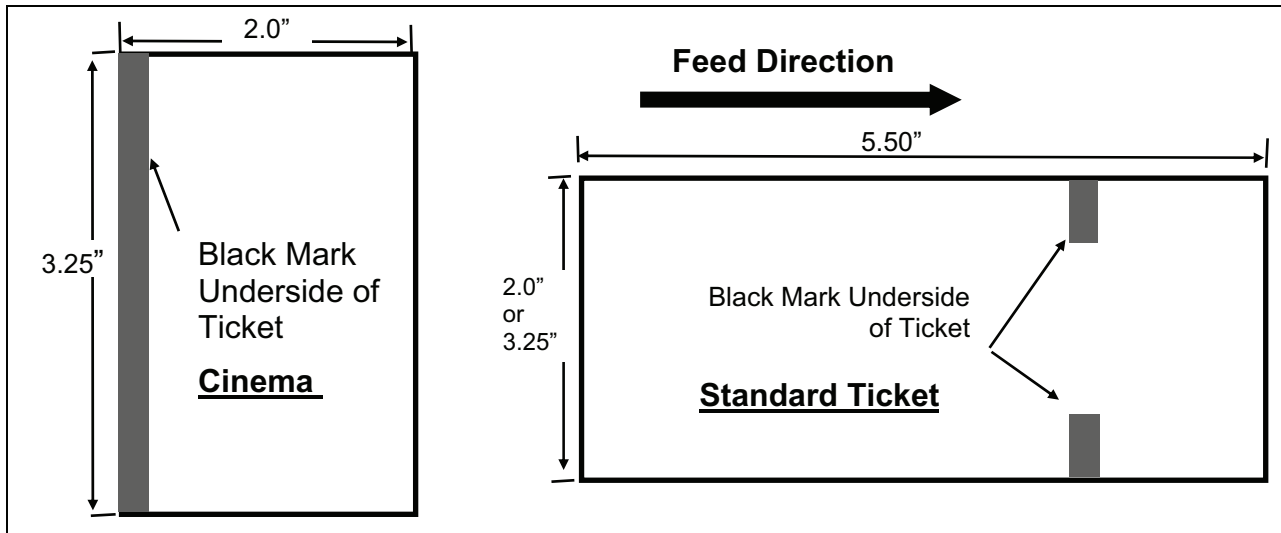
Adjustable (ADJ, ADJW & ADJ2)

Above two photos are of a Lemur and Lemur-K printer. The ticket feed area of a Lemur-2 and Lemur-2K would look the same.



Above photo is of a Lemur-S with optional cutter. Your printer may vary.

Two typical ticket formats and feed directions are shown below.



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

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6.0 Configuration

The [Lemur series printer](#) is factory configured for a variety of customer requirements.

For a comparison of the different electronics packages, refer to the BOCA Systems [website](#) under the [BASIC](#) section.

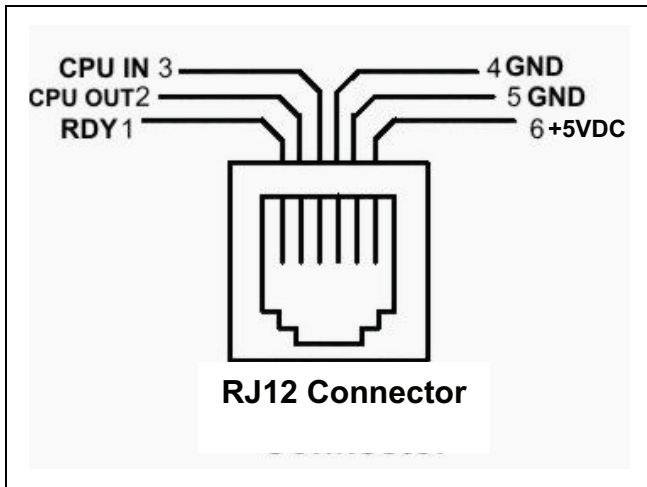
For a listing of configuration choices, refer to the BOCA Systems [website](#) under the [SPECIFICATIONS](#) section.

Printers are configured with a reverse adjustable paper guide (RADJW) set to the customer specified width or optional adjustable paper guide (ADJ4, ADJW, ADJ2 & RADJ4). To change the ticket width setting, refer to [section 9.1.4](#).

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7.0 Standard Interface Pinouts

RJ12 Serial Connection



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

PARALLEL

PIN	FUNCTION
1	Strobe (negative)
2-9	Data (DB0 - DB7)
10	ACK (negative)
11	BUSY
12	PAPER OUT
13	SELECT (negative)
15	ERROR (negative)
18	Ground

USB is considered a full speed device (version 1.1) not a high speed device (version 2.0).

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

NOTE: The above pinouts may vary on certain printers due to special customer request.

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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, HS11, KEY10

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, including part alignments, adjustment and replacement.

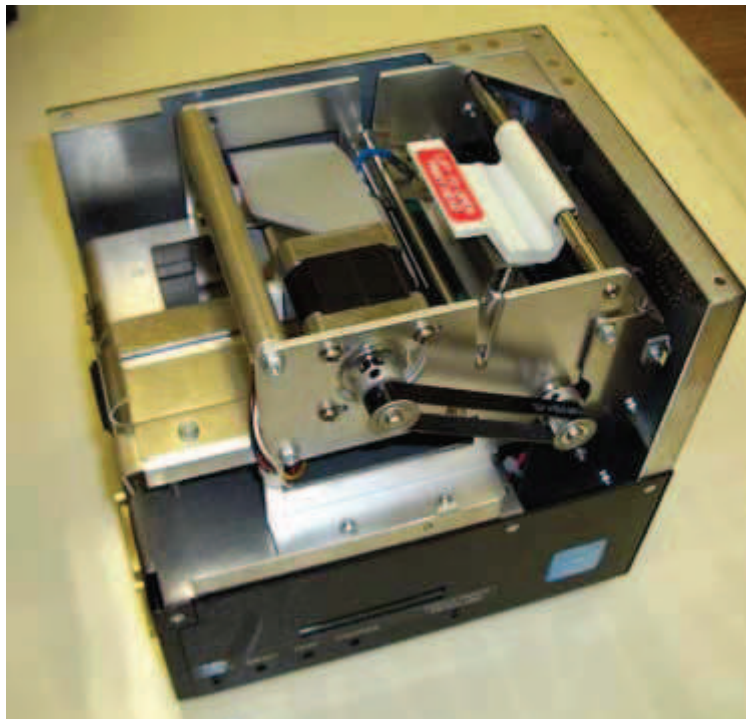
For discussion purposes, the printer consists of three major modules or assemblies:

- 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.

9.1 Paper Guide and Print Head Assembly

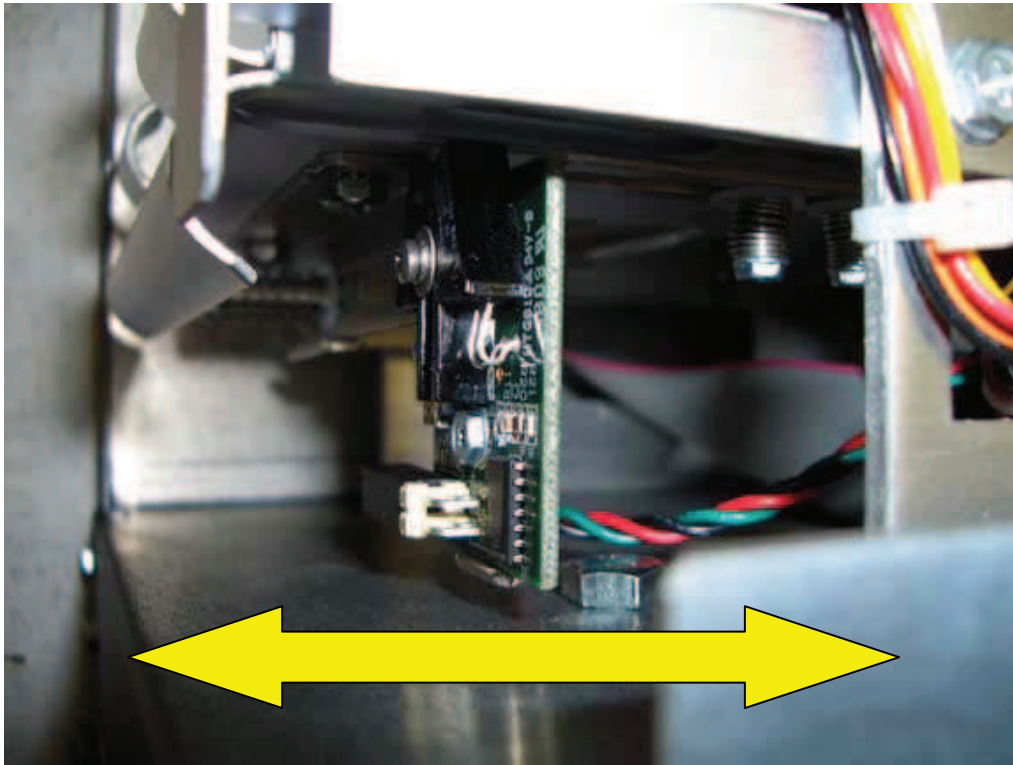
The principal function of this assembly is to guide the ticket stock to the thermal print head where thermal printing takes place. Additionally, this assembly houses the drive platen and ticket positioning sensors. If necessary, the total assembly may be removed from the unit. All replacements and adjustments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



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9.1.1 Cut or Tear Opto

There is one optical sensor (opto) mounted on an adjustable aluminum bracket. The opto controls the cut or tear position. **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 not be necessary.



Note: Before making any opto adjustments make sure your ticket stock was manufactured to proper [ticket specifications](#).

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 with auto cut the cut position should be a 1/16"-1/8" away from the ticket perforation. On a Lemur without auto cut the ticket perforation should line up with the edge of the cabinet or top plate.

Cut or tear position may also be adjusted via the control panel (if applicable) by changing the INC/DEC CUT1/2 settings. (See [Appendix A](#))

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

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

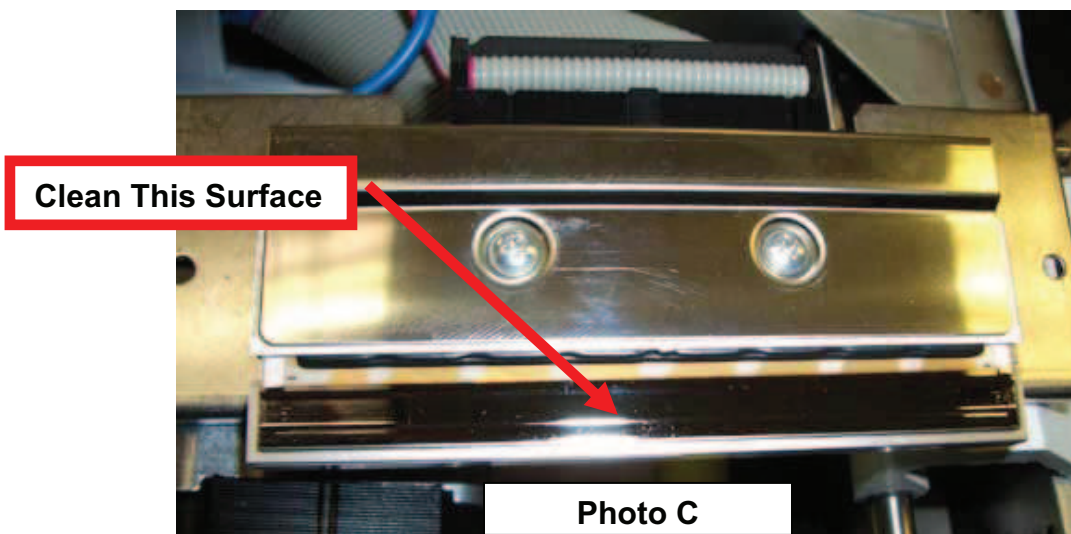
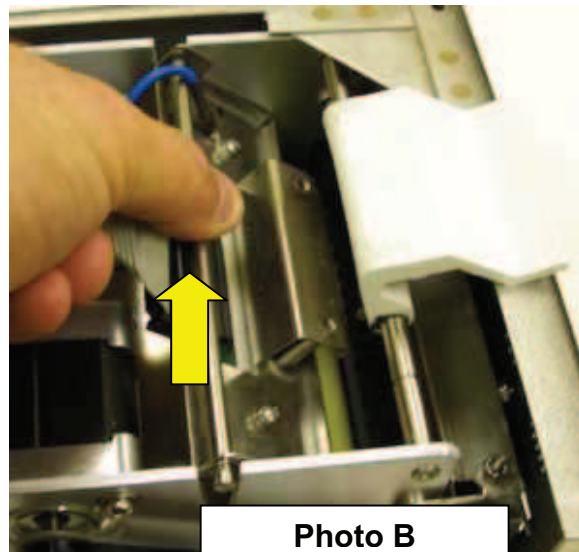
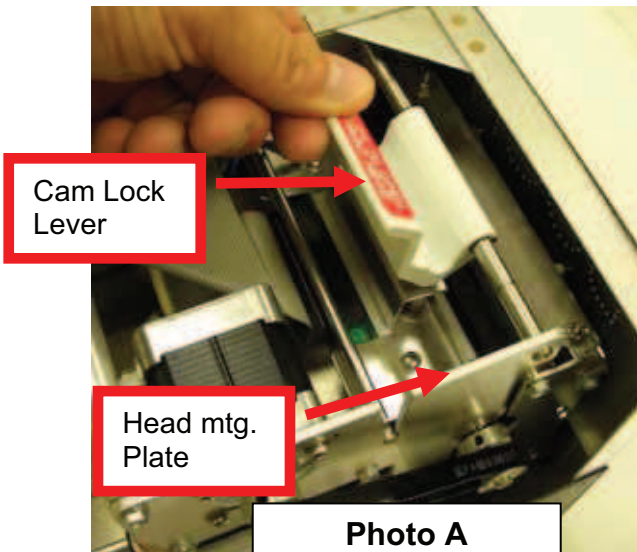
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9.1.2 THERMAL PRINT HEAD

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 build 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:

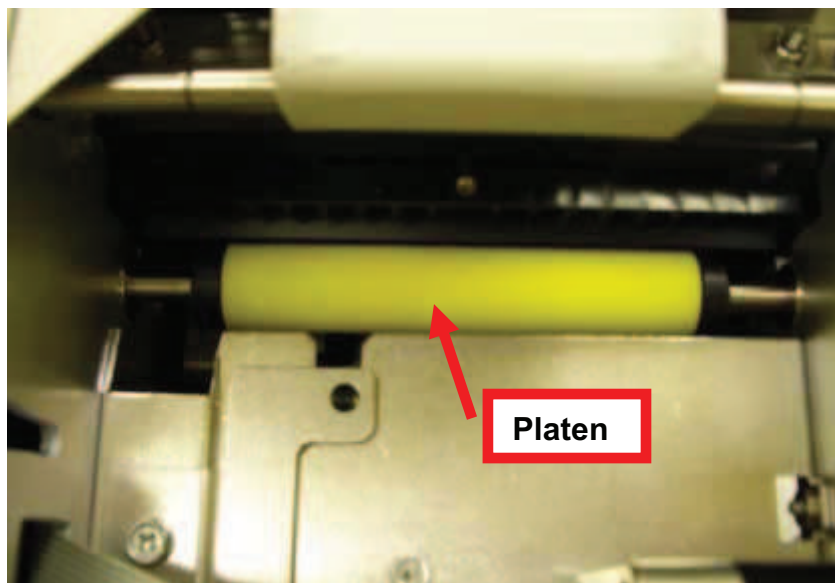
1. Make sure power is off and the AC cord is disconnected from the printer.
- 2. DO NOT UNPLUG CABLE FROM PRINT HEAD.**
3. Lift up on the cam lock assembly (located above the head mounting block or plate) to remove pressure from the thermal head. **Photo A**
4. Lift up on the head mounting plate/thermal 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 is 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.



9.1.3 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 when using inferior ticket stock.)

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 [9.1.2 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 is now ready for normal operation.

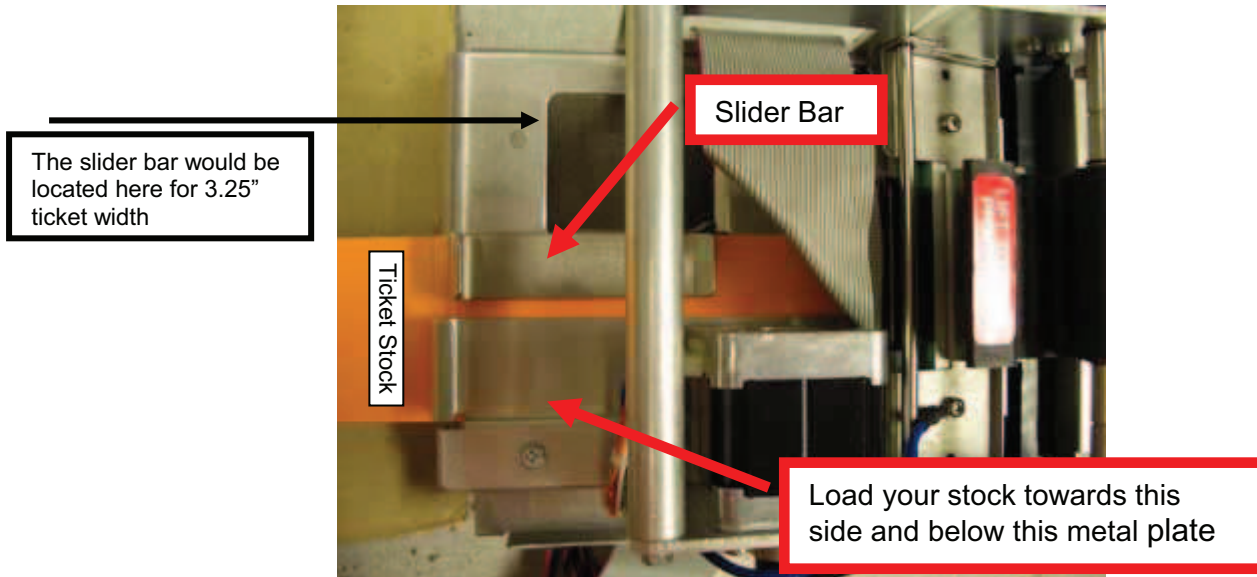


Platen size may vary from what is shown in the photo.

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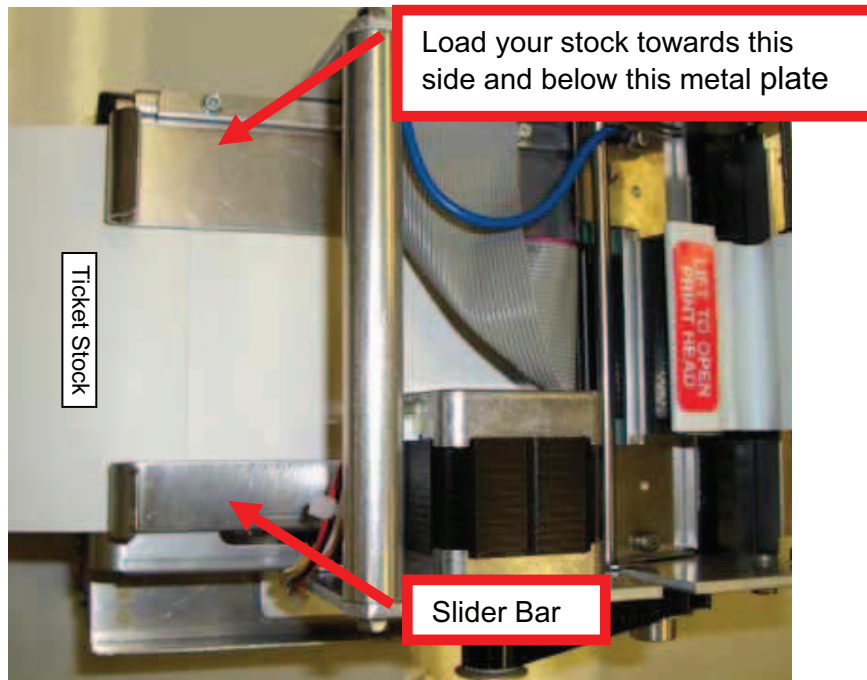
9.1.4 Ticket Width Adjustment

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.



Above photo is of a RDJW paper path set for 2" wide stock

On reverse adjustable printers (RADJW or RADJ4), the "special head" setting via the control panel must be changed to match the new ticket width (see [Appendix A](#)). If the printer doesn't have the optional control panel then the width adjustment can be made via a software command (see [Appendix F](#)).



Above photo is of ADJ paper path set for 4" wide stock

No control panel adjustment is necessary on standard adjustable printers (ADJ, ADJW or ADJ2).

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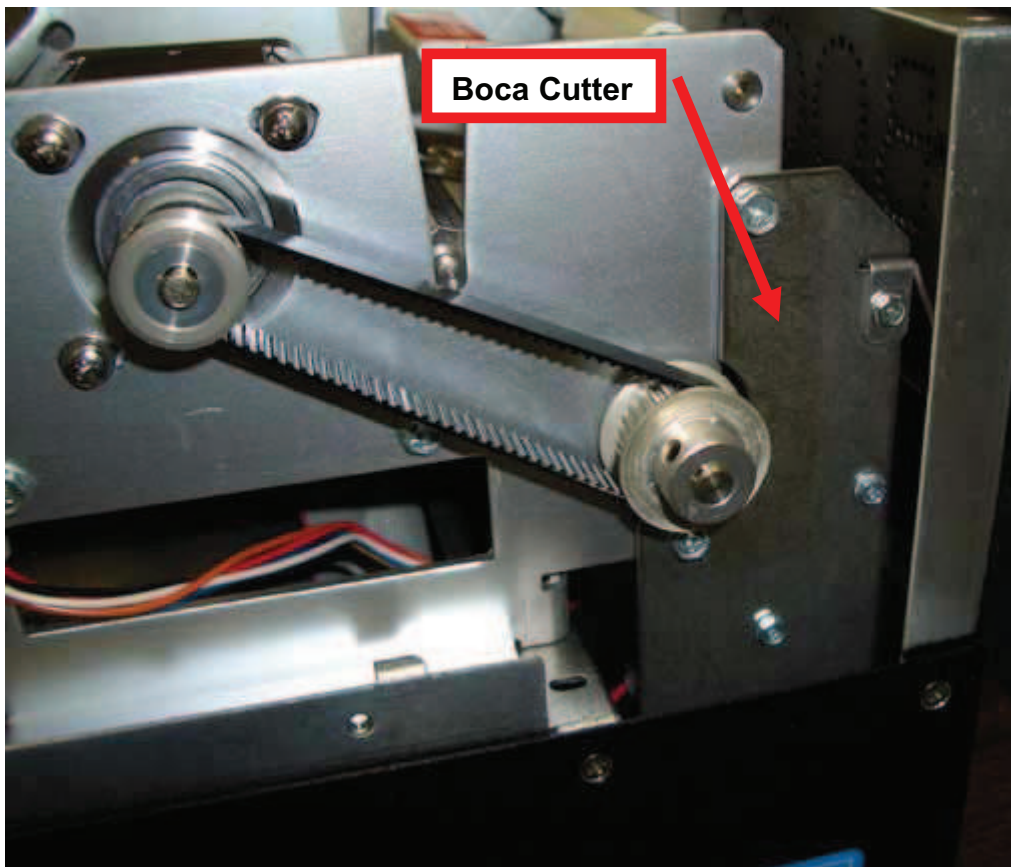
9.2 Cutter Assembly

The 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.



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9.3 Logic Board

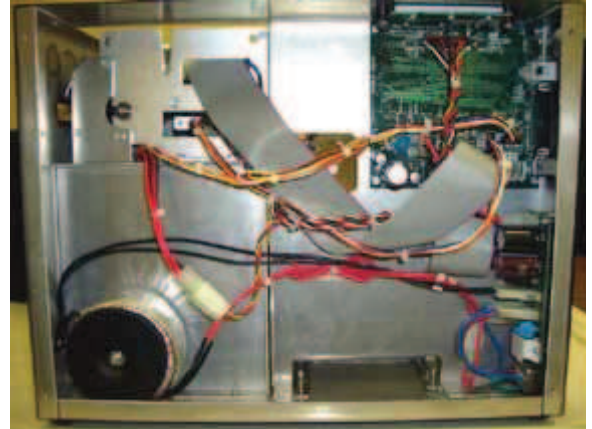
The printed circuit boards used in this product have been manufactured using surface mount technology. These printed circuit boards cannot be effectively repaired in the field and should be returned to the manufacturer if repair is required.

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

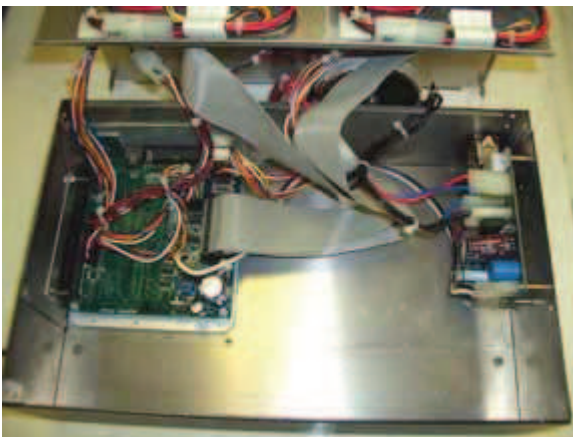
See below pictures for main logic board access: (Click on image for larger picture)



Lemur & Lemur-K
(Electronics cover removed)



Lemur-S
(Rear access panel removed)



Lemur-2 & Lemur-2K
(Electronics cover removed)

9.3.1 Logic Board (Removal)

1. Gain access to the logic board. This is normally done by removing the electronics cover or rear access panel (for Lemur-S).
2. Denote where all the cable plug into the logic board.
3. Unplug connectors connected to the main logic board.
4. Remove the four 3/16" head screws that secure the logic board onto the cabinet.
5. Lift board and remove.

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9.3.2 Logic Board (Installation)

1. Installed the logic board into the printer.
2. Install the four 3/16" head screws that hold the logic board onto the cabinet and tighten.
3. Attach connectors going to the main logic board.
4. Install the electronics cover or rear access panel.

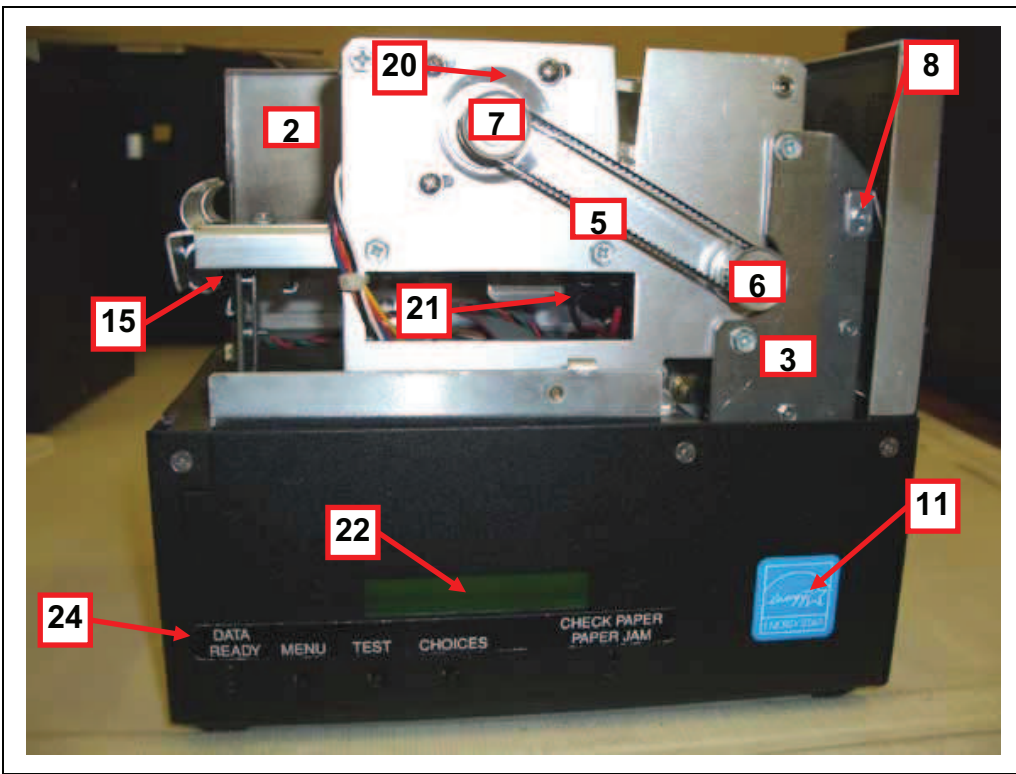
9.4 General Cleaning

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.

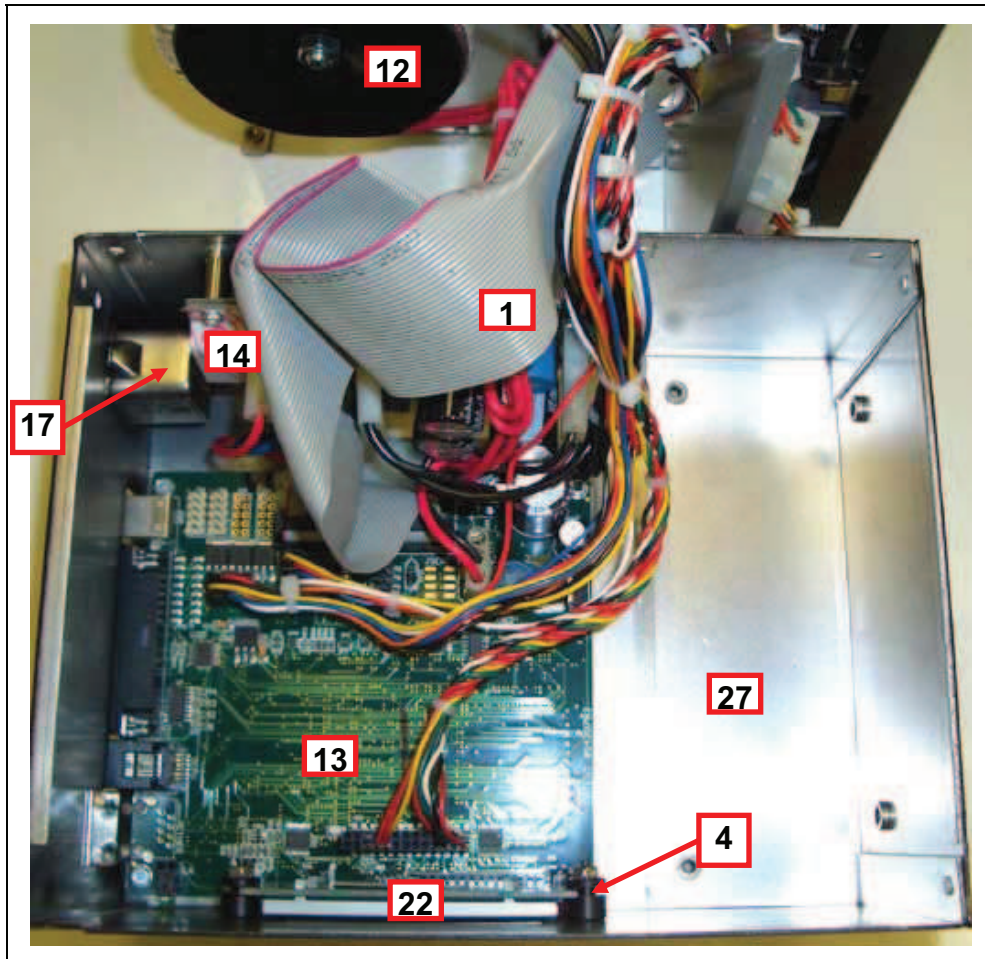
10.0 Spare Parts List

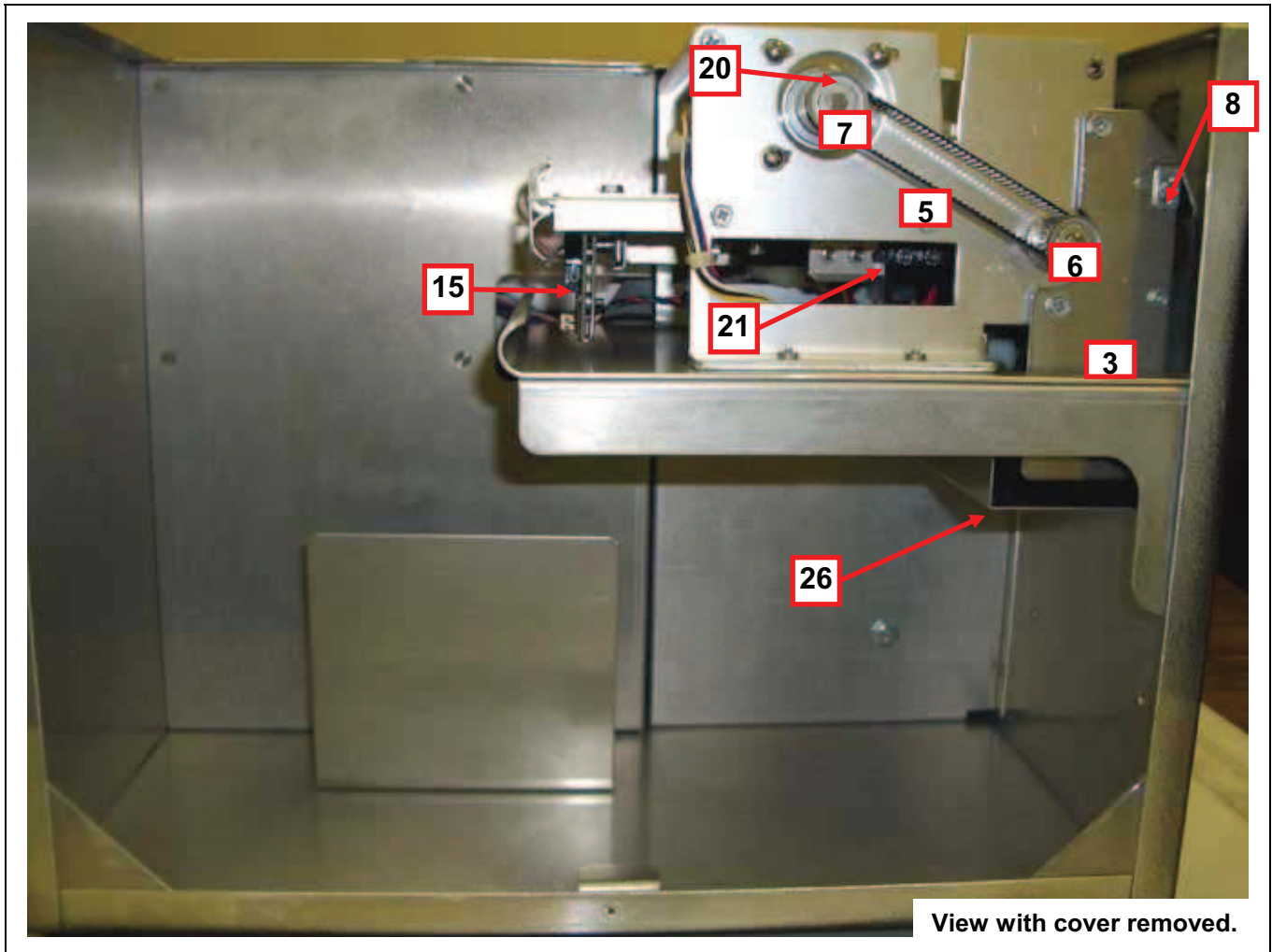
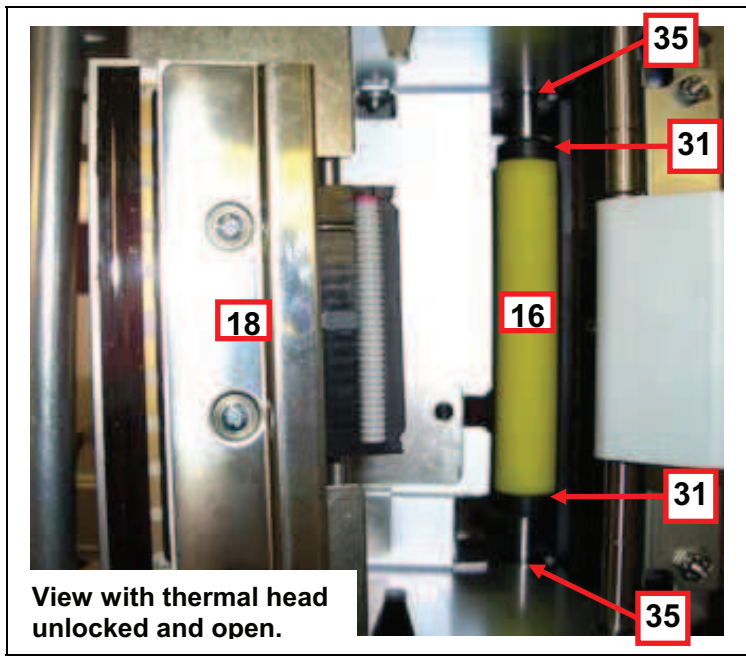
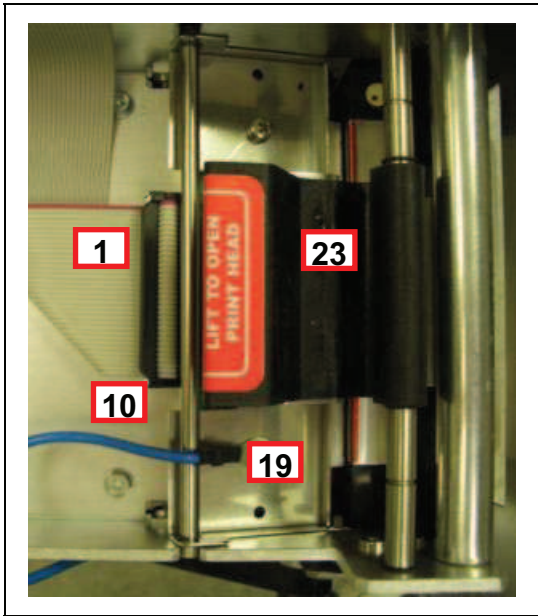
#	Part Number	Qty	Description
1	422557-25	1	Cable Ribbon, Thermal Head
2	420881Z-1	1	Cover Front, Lemur
3	423552-L	1	Cutter Assembly
4	423759	2	Display Holder
5*	P50-1003	1	Drive Belt, 102T (for 300dpi)
5	P50-1017	1	Drive Belt, 98T (for 200dpi)
6*	P51-1011	1	Drive Pulley, 30T (for 300dpi)
6	P51-1007	1	Drive Pulley, 20T (for 200dpi)
7	P51-1014	1	Drive Pulley, 20T (for 200dpi & 300dpi)
8	423480Z	1	Upper Exit Deflector
8*	423480Z-VL	1	Upper Exit Deflector (vertical mount Lemur only)
9*	423485-VL	1	Lower Exit Deflector (vertical mount Lemur only)
10	423192	1	Ground Strap
11	423793	1	Energy Star Decal
12	422888-115	1	Transformer (110VAC)
12*	42288-230	1	Transformer (230VAC)
13	FGLZ46	1	Main Logic Board (Standard)
13*	FGLZ46-E	1	Main Logic Board (Ethernet option)
14	P46-110	1	Power board, 110VAC
14*	P46-220	1	Power board, 220VAC
15	423764	1	Opto Detector Assembly (opto)
16	423760-L3B-1	1	Platen (RADJW, ADJ2 & ADJW)
16*	423760-L4B-1	1	Platen (ADJ4 & RADJ4)
17	423789	1	AC Filter
18	2003	1	Print Head (200dpi RADJW, ADJ2 or ADJW)
18*	3003	1	Print Head (300dpi RADJW, ADJ2 or ADJW)
18*	2004	1	Print Head (200dpi ADJ4 & RADJ4)
18*	3004	1	Print Head (300dpi ADJ4 & RADJ4)
19	423496	1	Head Mounting Plate
20	422590	1	Stepper Motor
21	P28-1020	1	Switch, Ticket Load
22	AC161A5	1	LCD Display
23	423236-2	1	Take Out Head Cam Lock
24	5316H	1	Control Panel Decal
25	421932-DSP	1	Fill-in Plate, Display
26	423559Z	1	RFI Cutter Shield
27	422521	1	Electronics Box, Lemur & Lemur-K
28	423565	1	Dust Cover, Cutter
29	P62-1006	1	Anti Static Brush
30	422521Z	1	Electronics Box, Lemur-2 & Lemur-2K
31	423792	2	Shoulder Bearing, Platen
32	423790	1	DC Out Cable, Power Board
33	423791	1	AC Out Cable, Power Board
34	423767	1	UL Cover, Power Board
35	P45-1009	1	Bearing (Large)
*	420881Z-2	1	Cover, Lemur
*	420881Z-Plus	1	Cover, Lemur-S
*	4208812Dual-2	1	Cover, Lemur-2
*	4208812Dual-2	1	Cover Front, Lemur-2
*	421623	1	Hopper, 2" wide ticket stock (cutter Lemur-S)
*	422113	1	Hopper, 2" wide ticket stock (cutter Lemur & Lemur-2)
*	421623-5M4	1	Hopper, 2.5" to 4" wide ticket (cutter Lemur, Lemur-S & Lemur-2)

*Customer dependent and not shown in photos

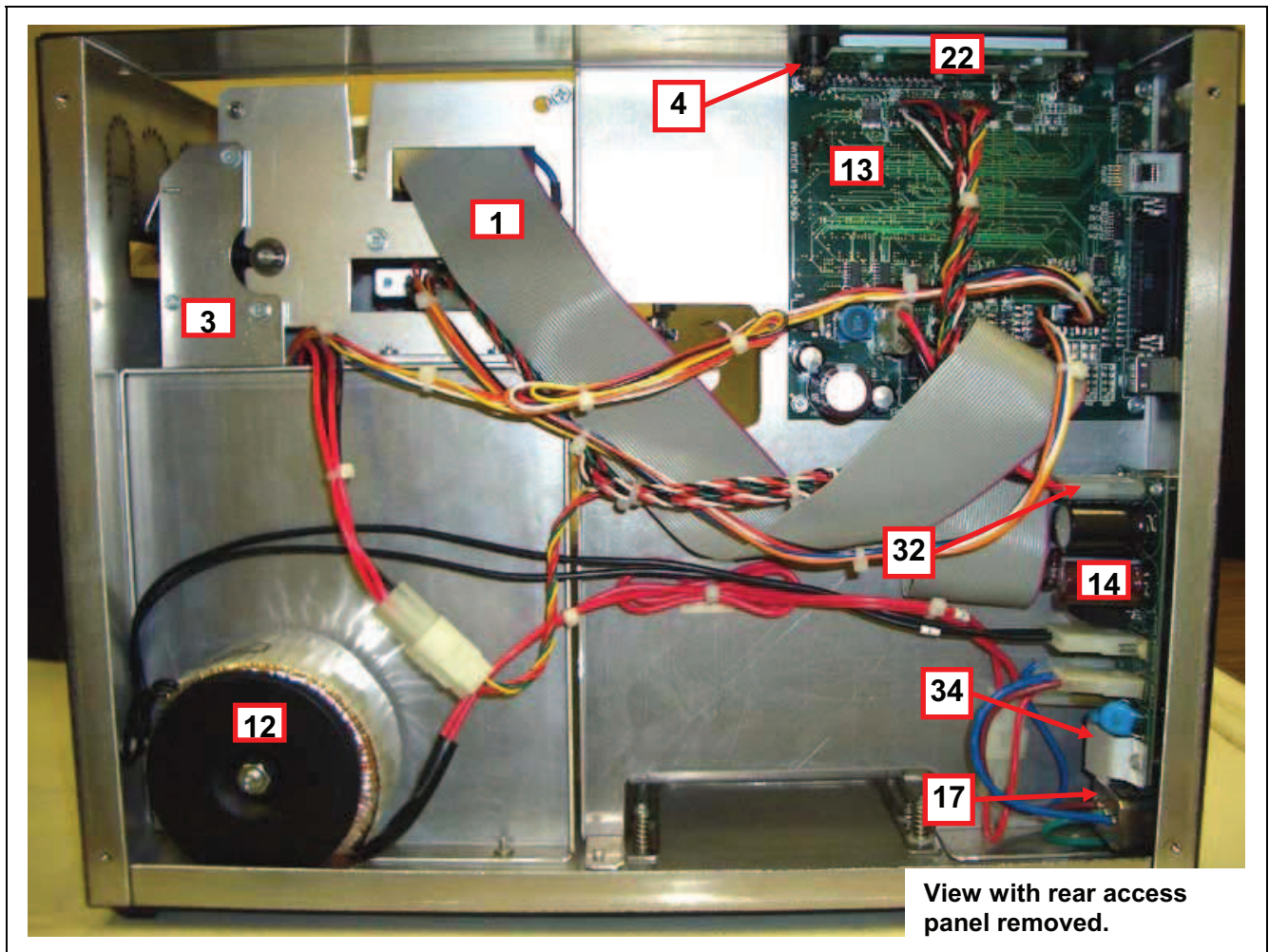


Above and below photos are of a Lemur with optional LCD display and cutter

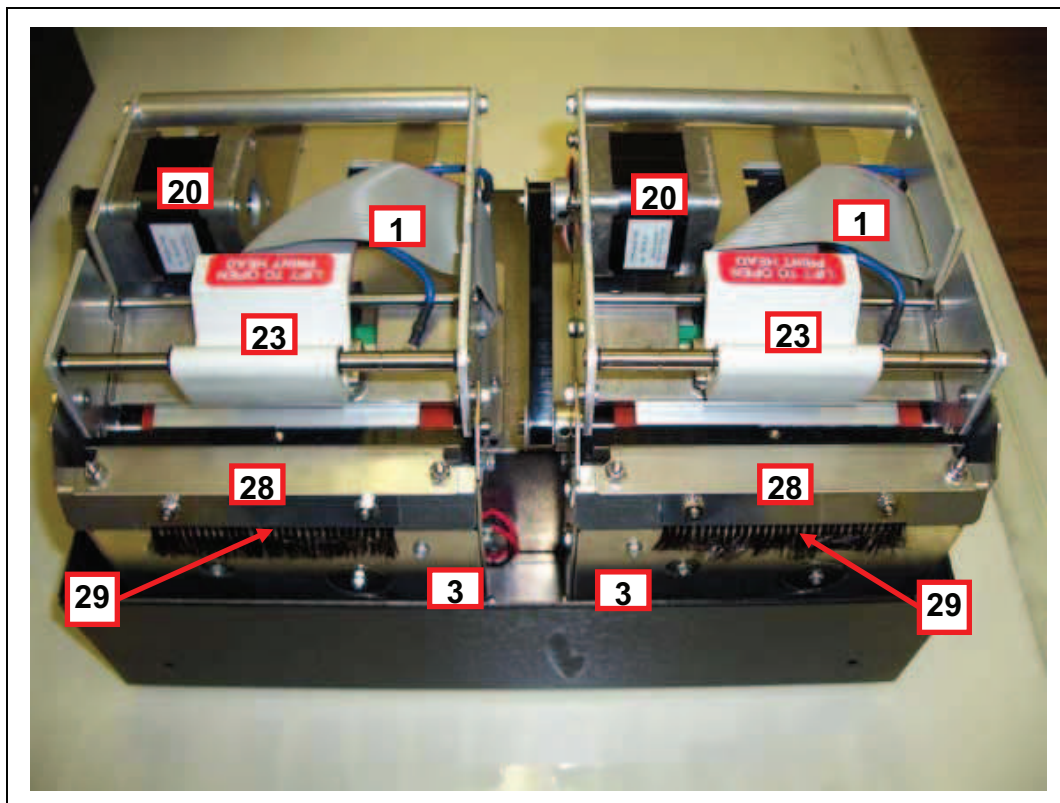




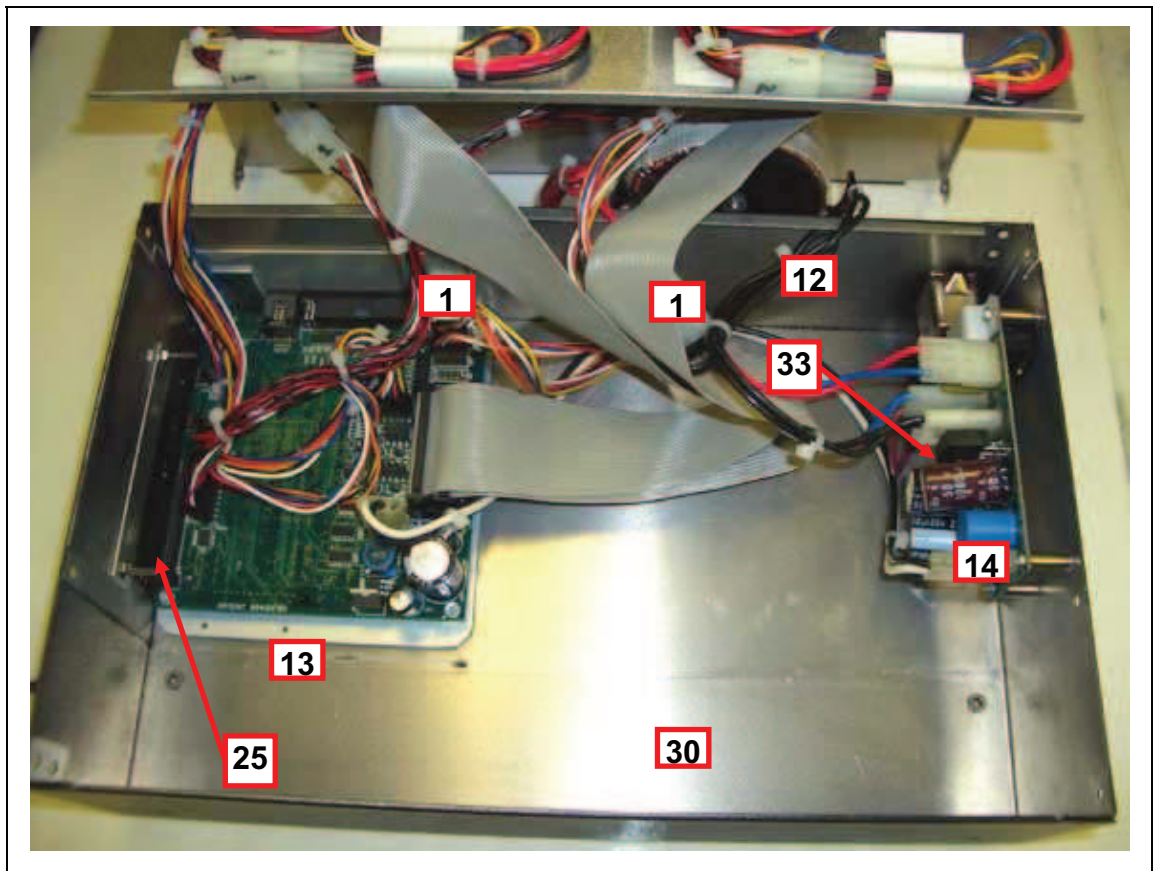
Lemur-S with optional cutter



Lemur-S with optional cutter



Lemur-2K with optional cutters



Lemur-2 without optional LCD display

11.0 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. Check to make sure the load switch (see [item #21](#) of parts list) makes a clicking sound when you load ticket stock over it. If switch needs adjustment then contact [BOCA](#) for documentation.
 - b. If cutter knife (if so equipped) does not go up and down after power up, See # 6.
 - c. With the printer powered off, unplug the thermal head and turn on the printer. If printer works then replace the thermal head.
 - d. Contact your system provider or [BOCA](#) for further assistance.

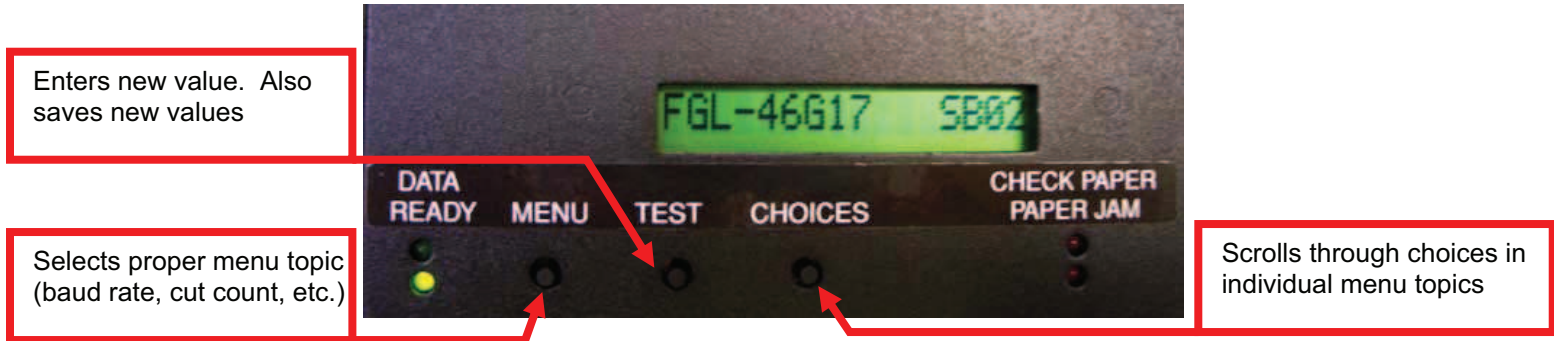
3. POWER IS ON BUT TICKET WILL NOT LOAD
 - a. See # 2
 - b. Make sure the print head/cam lock assembly is fully locked in the closed position. Consult "[Thermal Print Head](#)" section.

- c. Check that the ticket stock is being loaded correctly. Consult "[Installation](#)" section.
 - d. Contact your system provider or [BOCA](#) for further assistance.
4. 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. Clean off opto eyes (see [item #15](#) of parts list) with air.
 - c. Check that the platen is clean. Consult "[Platen \(Rubber Drive Roller\)](#)" section.
 - d. Replace ticket cut opto.
 - e. Contact your system provider or [BOCA](#) for further assistance.
5. ERRACTIC PRINT POSITION
- a. See # 4
6. 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 then 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.
7. POOR PRINT OUT (light print out)
- a. Try a different stack of ticket stock.
 - b. Make sure the print head/cam lock assembly is fully locked in the closed position.
 - c. Clean print head. Consult "[Thermal Print Head](#)" section.
 - d. Adjust print intensity setting via the control panel (if equipped). (see [Appendix A](#))
 - e. Replace thermal head.
 - f. Contact your system provider or [BOCA](#) for further assistance.
8. POOR PRINT OUT (white voids in print out)
- a. Clean print head. Consult "[Thermal Print Head](#)" section.
 - b. Replace thermal head.
 - c. Contact your system provider or [BOCA](#) for further assistance.
9. 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.
10. PRINTER SKIPS TICKETS WHILE PRINTING
- a. Check position and quality of black mark on the ticket stock.
 - b. Clean off opto eyes with air.
 - c. Check that the platen is clean. Consult "[Platen \(Rubber Drive Roller\)](#)" section.
 - c. Replace ticket cut opto.
 - d. Contact your system provider or [BOCA](#) for further assistance.
11. PRINTER SKIPS TICKETS AND DIES
- a. See # 10.
12. TICKET JAM ENTERING THE CUTTER AREA
- a. Make sure the entrance to the cutter area is not blocked.
 - b. Contact your system provider or [BOCA](#) for further assistance.

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APPENDIX A - CONTROL PANEL

The FGL46 printers allow the user to adjust various printer options through the optional control panel. To access the control panel menu, press both **MENU** and **TEST** switches simultaneously for about 3 seconds. The LCD will display the “**OPERATOR MENU!**” message to indicate that it has entered the control panel menu mode. Once in this mode, please use the following steps in the manner indicated to choose the proper menu topic and to select the proper setting.



Enters new value. Also saves new values

Selects proper menu topic (baud rate, cut count, etc.)

Scrolls through choices in individual menu topics

To access and use the OPERATOR MENU, follow these steps:

1. Ticket stock should be loaded into the printer. The LCD window displays **FGL46G# - SB#** (# - number value depends on revision level; G represents the software series level; B# is the font)
2. Press both **MENU** and **TEST** switches simultaneously for about 3 seconds. The LCD window displays **OPERATOR MENU**. (To access the factory menu, press **MENU** and **CHOICES** instead of **MENU** and **TEST**.) **WARNING: Improper use of the factory menu may disable your printer.**
3. To scroll through the menu topic, use **MENU** stopping on the topic you wish to change.
4. Press **CHOICES** to scroll through choices in the selected topic. **NOTE:** The printer displays a blinking cursor for the values presently stored in the printer.
5. Once you have found the new value you want, press **TEST**. The LCD window displays **EXIT AND SAVE?**. If you wish to save the new value then press **TEST** again.
6. If you do not wish to save the new value then press **MENU**. The LCD window displays **JUST EXIT?**. Press **TEST** to exit the **OPERATOR MENU** without saving new values or press **MENU** to enter back into the **OPERATOR MENU**.

The chart below lists the present menu topics. These topics are subject to change.

OPERATOR MENU
BAUD RATE?
MINI/MICRO?
PRINT SPEED?
DIAGNOSTIC MODE?
STATUS ENABLED?
TRANSPARENT MODE?
PAPER MODE?
SPECIAL HEAD
CLEAR DOWNLOAD
INC CUT1 COUNT?
DEC CUT1 COUNT?
INC CUT2 COUNT?
DEC CUT1 COUNT?
PRINT MODE?
PRINT INTENSITY?
TEST TICKET?
ETHERNET?
IP ADDRESS?
SUBNET MASK?
DEFAULT GATEWAY?
SPEED/DUPLEX?
EXIT AND SAVE?
JUST EXIT

The following is a brief overview of some representative Menu options:

BAUD RATE? Controls the serial interface baud rate, parity bit, data bits and stop bits.

Here are the following choices:

1200,N,8,1	4800,N,8,1	19200,N,8,1	38400,E,7,1
1200,E,7,1	4800,E,7,1	19200,E,7,1	57600,N,8,1
1200,O,7,1	4800,O,7,1	19200,O,7,1	57600,E,7,1
2400,N,8,1	9600,N,8,1	28800,N,8,1	115200,N,8,1
2400,E,7,1	9600,E,7,1	28800,E,7,1	115200,E,7,1
2400,O,7,1	9600,O,7,1	38400,N,8,1	

MINI/MICRO? Defines the type of printer.

MINI Is for a printer with a Silent Cutter Assembly (SC2) (Mini, Mini Plus, Mini MB, Dual Mini)

MICRO Is for a printer without a SC2 (Micro, Micro Plus, Micro MB, Dual Micro)

PRINT SPEED? Controls the speed the ticket travels at. Also effects the print quality.

The numbers range from **0 - FASTEST** to **7 - SLOWEST**. **3 is factory default**.

DIAGNOSTIC MODE? Your choices are **YES** or **NO**. **NO is factory default**. (Please consult your Programming Guide)

TICKET TYPE? Factory setting. Do not modify.

STATUS ENABLED? Sets status response protocols.

NONE	Disables the XON/XOFF and status response protocols
SERIAL	Enables the XON/XOFF and status response protocol for the serial port.
PARALLEL	Enables bi-directional parallel status responses if printer is configured as bi-directional.
SER/PAR	Enables both bi-directional parallel and serial status responses.
USB	Enables USB status responses
USB/SER	Enables USB and serial status responses
USB/PAR	Enables USB and bi-directional parallel
USB/SER/PAR	Enables USB, bi-directional parallel and serial status responses

TRANSPARENT MODE? **YES** (Enabled) or **NO** (Disabled). (Please consult your Programming Guide)

PAPER MODE? Is generally used only for test purposes. It may also be used on roll stock with no black marks on the ticket. Your choices are **YES** (Enabled) or **NO** (Disabled). **NO is factory default**.

SPECIAL HEAD? Is used when a special paper path size is installed (2.125", 2.5", 2.7"....)

Here are the following choices: **This feature is set at the factory.**

NO	DUAL & SINGLE PATH PRINTER WITH RADW paper guide set to 3.25" & RADJ4 paper guide set to 4"
ON P1	DUAL & SINGLE PATH PRINTER ONLY (Not used for a Lemur model printer)
ON P2	DUAL PATH PRINTER ONLY on path #2 (Not used for a Lemur model printer)
ON BOTH	DUAL PATH PRINTER ONLY on both paths (Not used for a Lemur model printer)
REV ADJ2 P1	DUAL & SINGLE PATH PRINTER WITH RADW or RDJW4 paper guide set to 2"
REV ADJ2 P2	DUAL PATH PRINTER WITH RADW or RDJW4 paper guide set to 2" on path #2
REV ADJ2 BOTH	DUAL PATH PRINTER WITH RADW or RDJW4 paper guide set to 2" on both paths
REV ADJ2.5 P1	DUAL & SINGLE PATH PRINTER WITH RADW or RDJW4 paper guide set to 2.50"
REV ADJ2.5 P2	DUAL PATH PRINTER WITH RADW or RDJW4 paper guide set to 2.50" on path #2
REV ADJ2.5 BOTH	DUAL PATH PRINTER WITH REV RADW or RDJW4 paper guide set to 2.50" on both paths
REV ADJ2.7 P1	DUAL & SINGLE PATH PRINTER WITH RADW or RDJW4 paper guide set to 2.70"
REV ADJ2.7 P2	DUAL PATH PRINTER WITH RADW or RDJW4 paper guide set to 2.70" on path #2
REV ADJ2.7 BOTH	DUAL PATH PRINTER WITH RADW or RDJW4 paper guide set to 2.70" on both paths
REV ADJ3 P1	DUAL & SINGLE PATH PRINTER WITH RADW or RDJW4 paper guide set to 3"
REV ADJ3 P2	DUAL PATH PRINTER WITH RADW or RDJW4 paper guide set to 3" on path #2
REV ADJ3 BOTH	DUAL PATH PRINTER WITH RADW or RDJW4 paper guide set to 3" on both paths
REV ADJ2.125 P1	DUAL & SINGLE PATH PRINTER WITH RADW or RDJW4 paper guide set to 2.125"
REV ADJ2.125 P2	DUAL PATH PRINTER WITH RADW or RDJW4 paper guide set to 2.125" on path #2
REV ADJ2.125 BOTH	DUAL PATH PRINTER WITH RADW or RDJW4 paper guide set to 2.125" on both paths
REV ADJ3.25 P1	DUAL & SINGLE PATH PRINTER WITH RADJ4 ONLY paper guide set to 3.25"
REV ADJ3.25 P2	DUAL & SINGLE PATH PRINTER WITH RADJ4 ONLY paper guide set to 3.25" on path #2
REV ADJ3.25 BOTH	DUAL & SINGLE PATH PRINTER WITH RADJ4 ONLY paper guide set to 3.25" on both paths

CLEAR DOWNLOAD? Clears those items downloaded by the operator to Flash memory.

Your choices are **YES** or **NO**.

INC CUT1/2 COUNT? moves the cut/tear position to the left (towards the ticket entrance area). Cut counts are increments of .003" for 300dpi and .005" for 200dpi. Depressing CHOICES changes the count value. **16 is factory default.** (1 is for path one; 2 is for path 2 [dual only])

DEC CUT1/2 COUNT? moves the cut/tear position to the right (towards the ticket exit area). Cut counts are decrements of .003" for 300dpi and .005" for 200dpi. Depressing CHOICES changes the count value. **16 is factory default.**

PRINT MODE? Defines the automatic ticket length calculation feature.

THERMAL The printer will feed out and then retract a ticket during this measurement.

RIBBON The printer will feed out one blank ticket. This mode is used for label stock to prevent peeling.

PRINT INTENSITY? Controls the darkness of ticket print out.

Here are the following choices:

LIGHT	
MED LIGHT	
NORMAL	(factory default)
MED DARK	
SHORT HEAD LIFE	

TEST TICKET? Defines the type of self-test ticket printed.

STANDARD	Normal self test ticket pattern (factory default)
CONFIGURATION 1	To print configuration settings if printing on a 1" wide ticket
CONFIGURATION 2	To print configuration settings if printing on a 2" wide ticket
CONFIGURATION 3	To print configuration settings if printing on a 3" wide ticket
CONFIGURATION 4	To print configuration settings if printing on a 4" wide ticket

ETHERNET? Only used for printer with Ethernet interface connector.

NO	Ethernet not enabled.
YES	Uses the IP address that has been set in the printer by the customer.
Diagonstics	This feature should not be used.
Valid Packets	This feature should not be used.
DHCP Enabled	Automatically attempts to get an IP address from Local Server
DHCP/SUB/GATE	Automatically attempts to get an IP address/Subnet Mask/Gateway from Local Server
DHCP/NR	Automatically attempts to get an IP address from Local Server and then register the name with the local NetBIOS name server – usually the WINS Server
DHCP/SUB/GATE/NR	Automatically attempts to get an IP address/Subnet Mask/Gateway from Local Server and then register the name with the local NetBIOS name server – usually the WINS Server

IP ADDRESS? Enables the operator to change the printer's Ethernet IP Address. (See [Appendix D](#))

SUBNET MASK? Enables the operator to change the printer's Ethernet Subnet Mask value. (See [Appendix D](#))

DEFAULT GATEWAY? Enables the operator to change the printer's Ethernet default Gateway value. (See [Appendix D](#)) Programming Guide.

SPEED/DUPLEX? Enables the operator to change the printer's Ethernet speed and duplex setting. Please consult [FGL Programming Guide](#). Your choices are **AUTO-NEGOTIATE**, **100Mbps/FULL**, **100Mbps/HALF**, **10Mbps/FULL** and **10Mbps/HALF**.

EXIT AND SAVE ! Will save any changes made to the above menu options.

If you wish to save the new value then press **TEST**, if not press **MENU**.

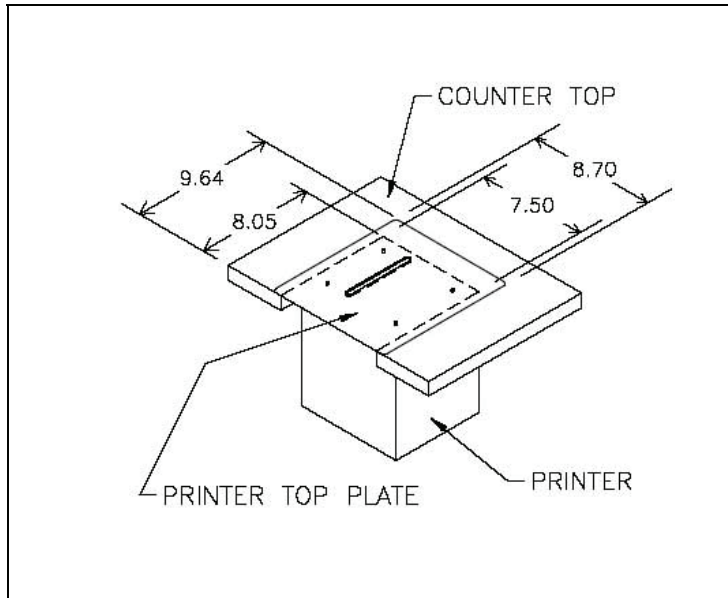
JUST EXIT? Will exit the menu options without saving any changes.

If you wish to exit without saving the new value then press **TEST**, if not press **MENU**.

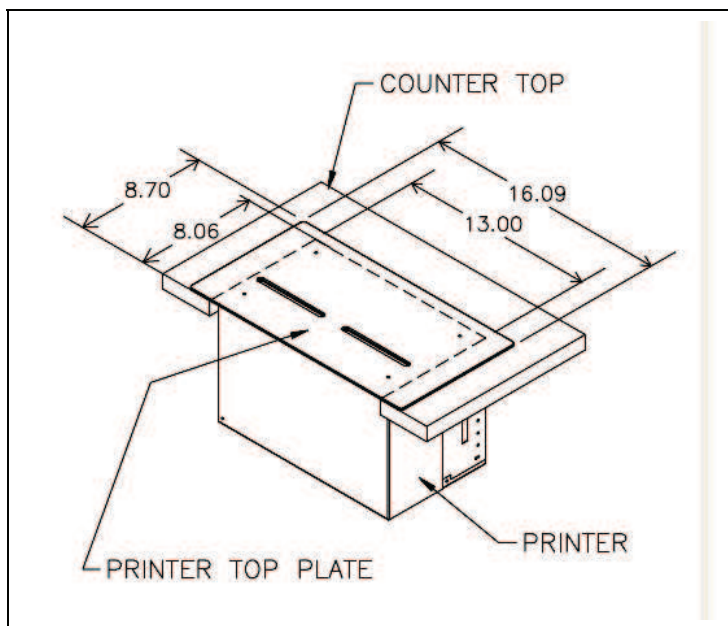
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APPENDIX B - VERTICAL PRINTER INSTALLATION

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.**



Vertical Mount Lemur

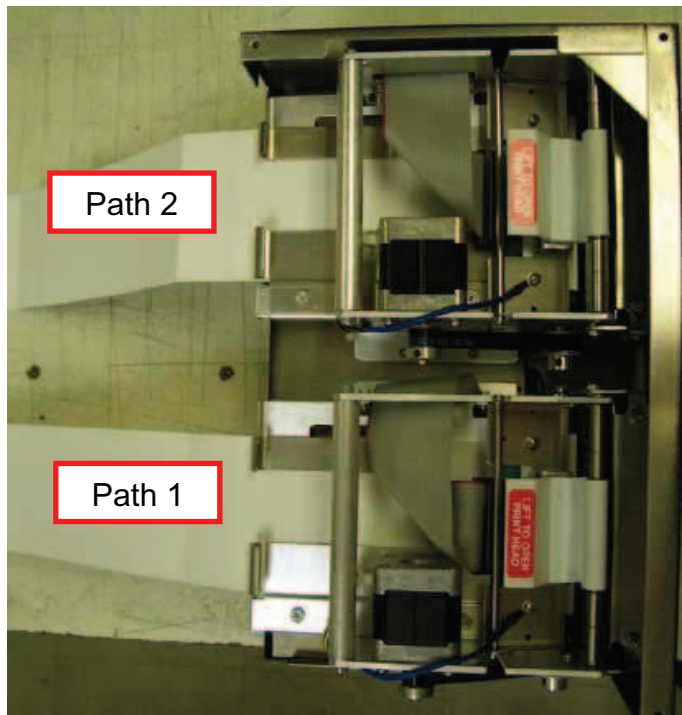


Vertical Mount Lemur-2

- 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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Ticket Load Procedure for a Lemur-2 Printer



Your printer may vary from the above photo

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). Begin loading the tickets through the entrance slot of path #1 with a smooth motion until it stops. At this point the printer should automatically grad and positions the ticket. Once path #1 had been loaded, you then can load path #2 the same way. Both paths need to be loaded in order for the printer to work properly.

Section [5.0 Ticket Load Procedure](#) will provide information on how the stock should be loaded into the entrance slots.

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 first ticket will print out on path #2 and when you press the TEST button a second time the ticket will print out on path #1.

Which side the printer prints on is controlled by the data being sent from you host computer.

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APPENDIX D – CHANGING ETHERNET PARAMETERS

CHANGING 'IP ADDRESS'

1. Please follow these steps to change the fixed IP address on your Ethernet printer. Note: if using a fixed IP address make sure the 'ETHERNET' setting is set to 'YES' (see above).
2. Depress both the **MENU** and **CHOICES** buttons while turning on the printer. Keep both buttons depressed until **FACTORY MENU** appears in the LCD window or the display starts scrolling through different topics.
3. Using the **MENU** button scroll down to the **IP ADDRESS?** topic and press the **CHOICE** button.
4. The blinking cursor indicates the current IP numeric value selected. Every time you press the **CHOICE** button the numeric value will change.
5. Using the **TEST** button will move you over to the next numeric value.
6. Continue steps 4 & 5 to program the desired IP address value.
7. At the end the display will show **EXIT AND SAVE**. Press the **TEST** button to save the IP address you just entered.

CHANGING 'DEFAULT GATEWAY' ADDRESS

Follow same procedure as 'Changing IP address' above but in step 3 scrolls down to the **DEFAULT GATEWAY** topic.

CHANGING 'SUBNET MASK' SETTING

1. Depress both the **MENU** and **CHOICES** buttons while turning on the printer. Keep both buttons depressed until **FACTORY MENU** appears in the LCD window or the display starts scrolling through different topics.
2. Using the **MENU** button scroll down to the **Subnet Mask?** topic and press the **CHOICE** button.
3. Each time you press the **CHOICE** button a different mask value will be displayed.
4. Once you have the mask value you want, press the **TEST** button. The display will show **EXIT AND SAVE**. Press the **TEST** button a second time to save the address value.

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APPENDIX E – INTERFACE TESTING A LEMUR

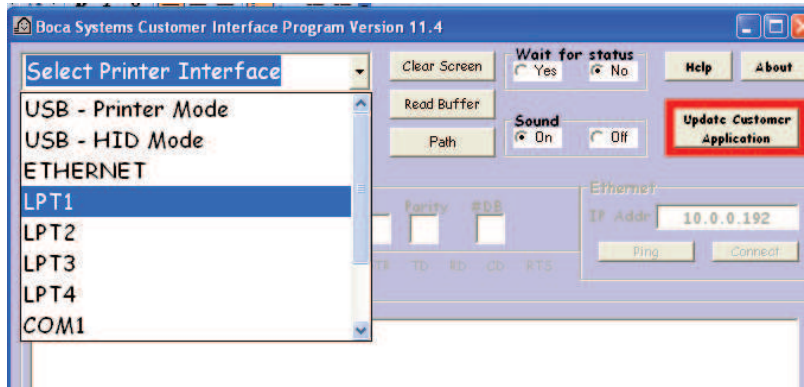
Boca Systems, Inc. has developed a program that allows customers to communicate from a host computer to the printer over any interface (parallel, serial, USB, Ethernet) and print drivers too. The below programs are found on our [website](#) under the “[Ghostwriter News](#)” section.

[For PC use without printer drivers](#) customer program is used with Parallel, Serial & Ethernet interfaces.

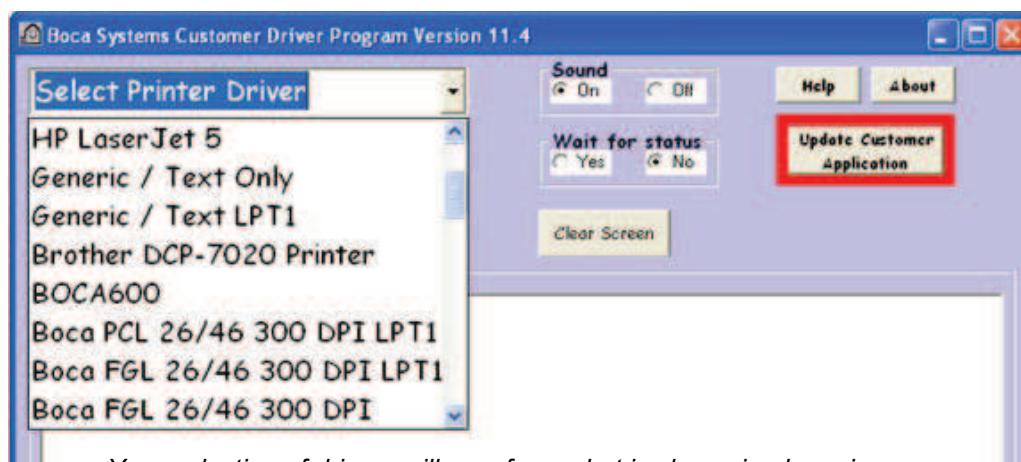
[For PC use with printer drivers](#) customer program is used with print drivers.

You may download the program that fits your needs. To use these programs you will need to download the executable file to your Windows based host computer and run the setup program. The following steps will guide you through using these programs on they have been installed on your host computer.

1. Hook the BOCA printer to the host computer that you have the Customer program loaded onto. Make sure that the printer has stock loaded and it ready to go. A printer is ready to print when it is able to print out a self test ticket by depressing the TEST button. If you are not able to get a self test ticket, refer to the users manual to make sure you have the printer properly setup.
2. On your Window’s desktop click on the START icon and then click on PROGRAMS to see all your computer’s programs.
3. Find “Boca Systems” and click on one of the below to start the program.
“Customer Interfaces” – If you are connecting through a Parallel, Serial or Ethernet port
“Customer Drivers” – If you are connecting via print driver. Proceed to [step #5](#)
4. Once the Customer Interfaces program is running, click on the “Select Printer Interface” drop-down arrow. You will want to choose the interface connection that you have the BOCA printer hooked up to then go to step #6.

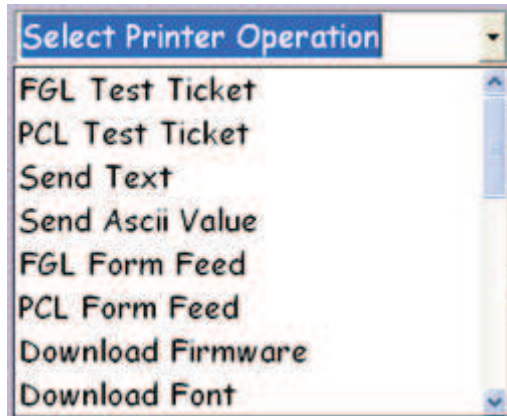


5. Once the Customer Drivers program is running, click on the “Printer Drivers” drop-down arrow that is found under Select A Printer. You will want to choose the driver you had downloaded for the BOCA printer.

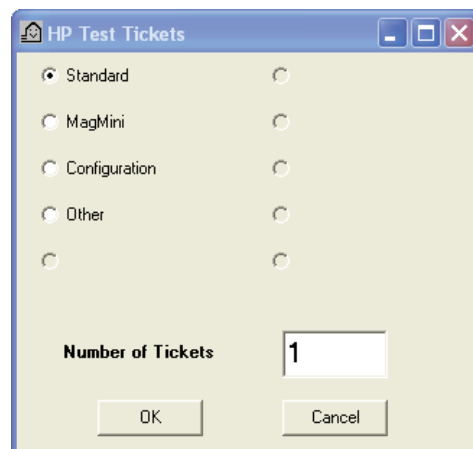
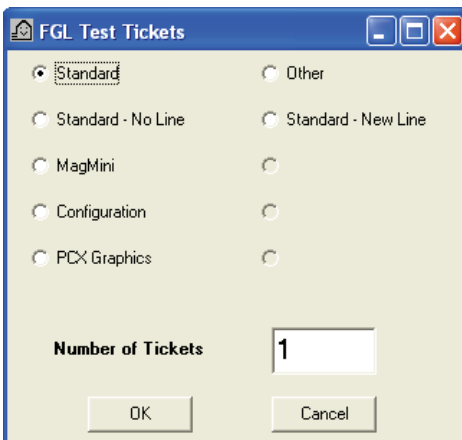


Your selection of drivers will vary from what is shown in above image

- Now click on the "Select Printer Operation" drop-down arrow and choose the appropriate test program. If your printer has FGL firmware then choose "FGL Test Ticket" or if your printer had HP firmware then choose "PCL Test Ticket". If you are going to be sending a text commands then see [Appendix F](#). If you are going to configure your Wi-Fi connection then see [Appendix G](#).



- Once the Test Ticket selection box comes up, click on the OK button to print out a ticket. The printer will print out an interface test ticket.



- You may also print more than one ticket by repeating steps # 5 & 6 but this time change number of tickets you want printed.



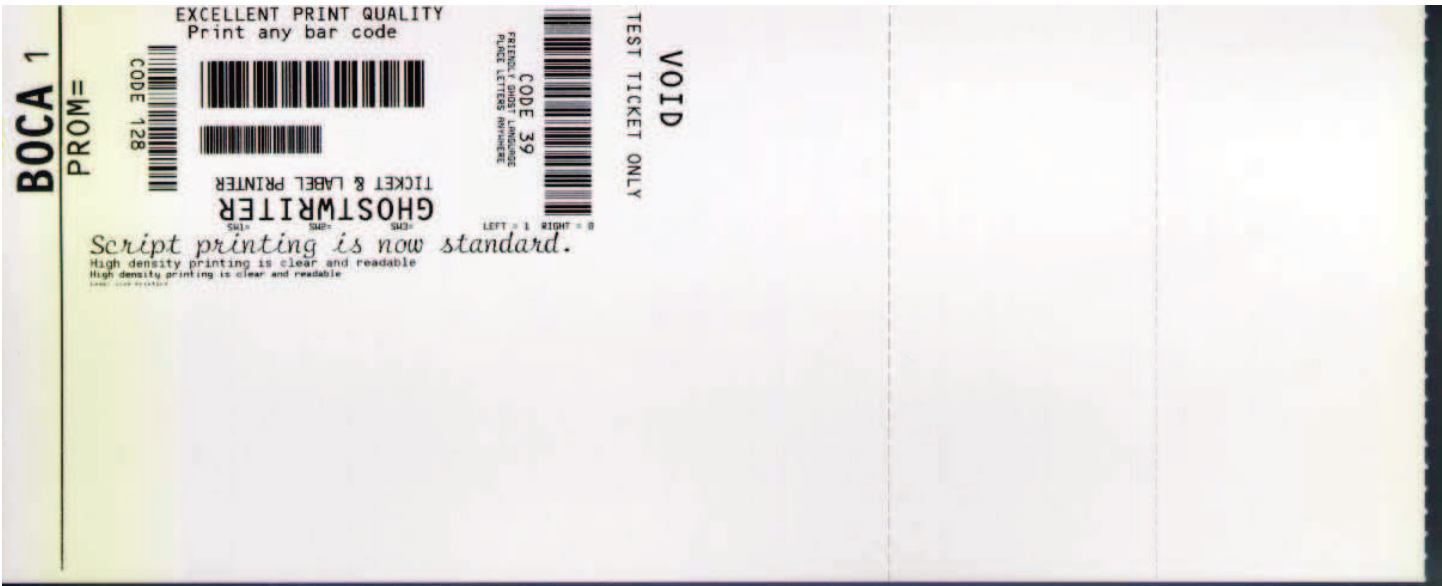
Above sample FGL ticket was printed on a 2" x 5.5" (concert) ticket using a RADJW-2" 200dpi FGL printer.



Above sample FGL ticket was printed on a 2" x 5.50" (concert) ticket using a RADJW-2" 300dpi FGL printer.



Above sample FGL ticket was printed on a 3.25" x 8" (receipt) ticket using a RADJW-3.25" 200dpi FGL printer.



Above sample FGL ticket was printed on a 3.25" x 8" (receipt) ticket using a RADJW-3.25" 300dpi FGL printer.

SS Norway



**Tamara
Mansfield**

First Purser
Crew No. 785
Lifeboat 2

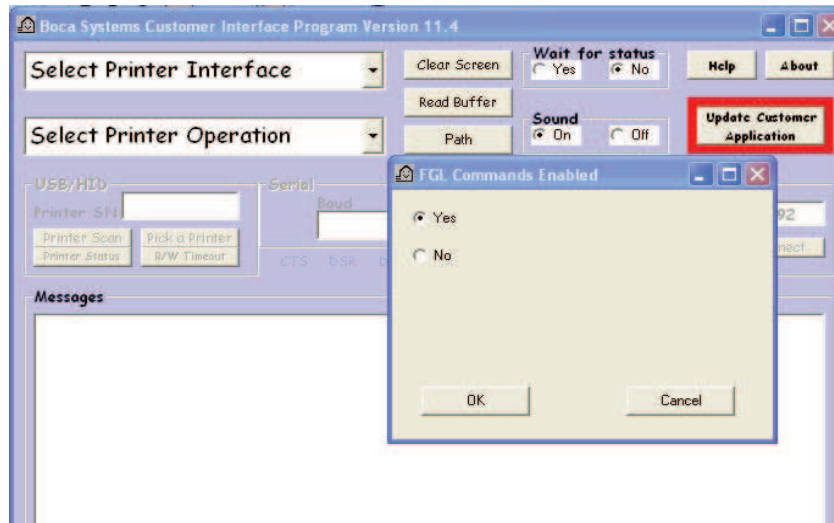
Above sample PCL ticket was printed on a 3.25" x 5" ticket using a RADJW-3.25" 300dpi PCL printer.

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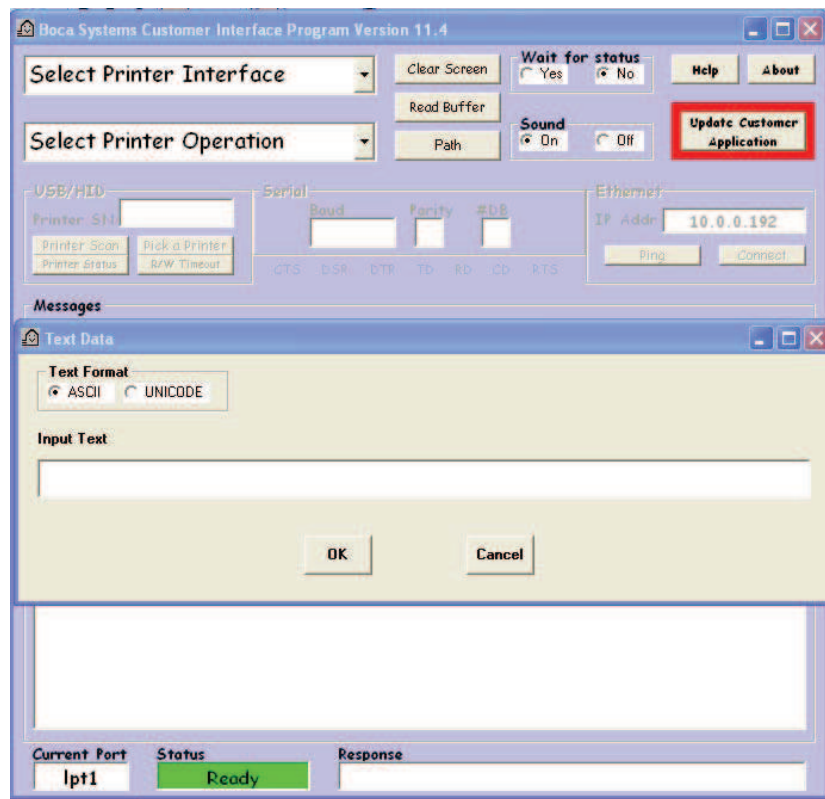
APPENDIX F – DOWNLOADING SOFTWARE COMMANDS

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 customer based program (see [Appendix E](#)). If needed, the printer may be defaulted back to it's 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 click on the “Select Printer Operation” drop-down arrow and choose “Enable FGL Commands (HP)”. When the FGL Command Enable box comes up, click the OK button.



Now click on the same drop-down arrow you did in step #5 and chose “Send Text”. 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.



The following list shows all of the commands necessary to access the operator control panel functions.

BAUD RATE COMMAND - <brx,y,z> (printer will reset after receipt of command)

Note: This function should only be used by an experienced user.

This command sets the baud rate (x), parity (y) and data bit size (z) for the printer. Valid values for each are shown below. For example, to set a 9600 baud rate, even parity, 7 data bits send the <br9600,E,7> command.

x =	1200	28800	y = N (no parity)	z = 8 data bits*
	2400	38400	E (even parity)	7 data bits
	4800	57600	O (odd parity)	
	9600	115200		
	19200			

MINI/MICRO COMMAND - <min>/<mic> (printer will reset after receipt of command)

This command sets the printer up as a Mini (cutter) <min> or Micro (no cutter) <mic>.

PRINT SPEED COMMAND - <ps#> (printer will reset after receipt of command)

This command sets the printing speed of the ticket. The values can range from 0-7. The slowest speed is 7. The slower the speed the darker the printing.

DIAGNOSTIC MODE COMMAND - <DM>

This command is explained in the [FGL programming guide](#).

STATUS ENABLED COMMAND - <se#>

This command enables or disables status responses from the printer to the Host. The values can range as shown below:

- 0 - None (disabled)
- 1 - Serial
- 2 - Parallel
- 3 - Ser/Par
- 4 - USB
- 5 - USB/Ser
- 6 - USB/Par
- 7 - USB/Ser/Par

Note: Bi-directional parallel mode must be set first for Par options to be valid.

Note: USB mode must be set first for USB options to be valid.

TRANSPARENT MODE ENABLED/DISABLED COMMANDS - <tme>/<tmd>

These commands set the printer in transparent mode <tme> or non-transparent mode <tmd> after initializing.

PAPER MODE ENABLED/DISABLED COMMANDS - <pme>/<pmd>

Note: This function is set at the factory and should not be changed.

These commands set the printer in paper mode <pme> or non-paper mode <pmd> after initializing.

SPECIAL HEAD SETTING COMMAND - <sph#> (printer will reset after receipt of command)

Note: This function is set at the factory and should not be changed.

This command sets the special head setting for the printer. The values can range from as shown below:

- | | |
|----------------------------------|---|
| 0 - no special head | RADJW set for 3.25" wide ticket |
| 1 - special head size path 1 | # Note: this is for non-reversible paper guide. |
| 2 - special head size path 2 | # Note: this is for non-reversible paper guide. |
| 3 - special head size both paths | # Note: this is for non-reversible paper guide. |

- 4 - reverse adjustable 2" path1
- 5 - reverse adjustable 2" path2
- 6 - reverse adjustable 2" both paths
- 7 - reverse adjustable 2.5" path1
- 8 - reverse adjustable 2.5" path2
- 9 - reverse adjustable 2.5" both paths
- 10 - reverse adjustable 2.7" path1
- 11 - reverse adjustable 2.7" path2
- 12 - reverse adjustable 2.7" both paths
- 13 - reverse adjustable 3.0" path1
- 14 - reverse adjustable 3.0" path2
- 15 - reverse adjustable 3.0" both paths
- 16 - reverse adjustable 2.125" path1
- 17 - reverse adjustable 2.125" path2
- 18 - reverse adjustable 2.125" both paths
- 19 - reverse adjustable 3.25" path 1 #Note: this is for RADJ4 ONLY paper guide
- 20 - reverse adjustable 3.25" path 2 # Note: this is for RADJ4 ONLY paper guide
- 21 - reverse adjustable 3.25" both paths # Note: this is for RADJ4 ONLY paper guides

CLEAR DOWNLOAD SPACE COMMAND – ESC c

This command is explained in the [FGL programming guide](#).

INC/DEC CUT1 COUNT COMMAND - <cca#> (printer will reset after receipt of command)

This command sets the cut count for path 1 (A). The value can usually vary from 0-30.

INC/DEC CUT2 COUNT COMMAND - <ccb#> (printer will reset after receipt of command)

This command sets the cut count for path 2 (B). The value can usually vary from 0-30.

PRINT MODE COMMANDS - <tml>/<rib>

Note: This function is set at the factory and generally should not be changed.

These commands set the printer up for Thermal <tml> or Ribbon (thermal transfer) <rib> printing.

PRINT INTENSITY COMMAND - <pi#>

Note: This function should only be used by an experienced user.

This command sets the print intensity setting for the printer. The values can range as shown below:

- 1 – light intensity
- 2 – medium light intensity
- 3 – normal intensity
- 4 – medium dark intensity
- 5 – short head life

TEST TICKET TYPE COMMANDS - <tst#>/<TST#>

These commands set the test ticket type that is printed off the test button. The values can range as shown below:

- 0 – standard test ticket
- 1 – configuration 1 (for 1 inch ticket)
- 2 – configuration 2 (for 2 inch ticket)
- 3 – configuration 3 (for 3 inch ticket)
- 4 – configuration 4 (for 4 inch ticket)
- 6 – continuous test tickets

NOTE: The lowercase <tst#> commands sets the test ticket type in flash. The uppercase <TST#> command sets the test ticket type until power is turned off. It will also print a test ticket without having to press the test button.

ETHERNET MODE COMMAND - <eth#> (printer will reset after receipt of command)

This command sets the Ethernet mode for the printer and is permanently stored in flash. This can also be set using the 'Factory Menu'. The values can range as shown below:

- 0 - NO - Ethernet Interface disabled
- 1 - YES - Ethernet Interface enabled (uses static IP address).
- 2 - Ethernet DIAGNOSTIC Mode - (prints all packets transmitted or received by the printer).
- 3 - Ethernet Diagnostic VALID PACKET Mode - (prints only valid packets transmitted or received by the printer).
- 4 - DHCP ENABLED (automatically attempts to get an IP address from Local Server).
- 5 - DHCP/SUB/GATE (automatically attempts to get an IP address/Subnet Mask/Gateway from Local Server).
- 6 - DHCP/NR* (automatically attempts to get an IP address from Local Server and then register the name with the local NetBIOS name server – usually the WINS Server).
- 7 - DHCP/SUB/GATE/NR* (automatically attempts to get an IP address/Subnet Mask/Gateway from Local Server and then register the name with the local NetBIOS name server – usually the WINS Server).

Notes: Ethernet Diagnostic Modes should only be used after consulting with Boca Systems.

The DHCP enabled function will cause the printer to automatically attempt to retrieve a 'permanent' IP address from a Local Server after powering on. If the server does not assign a 'permanent' one, then it will allocate an address for a limited period of time (lease time). If this is the case, the printer will automatically try and renew its lease before it expires. If DHCP is enabled, but no response is received from a Local Server in time, the printer will revert back to its default IP. For convenience, the printer's IP address is now printed on the Test Ticket.

PERMANENT PROTOCOL ADDRESS COMMAND - <ip10.0.1.25> (printer will reset after receipt of command)

This command permanently changes the IP address of the printer and stores it in flash. The example above would change the address to 10.0.1.25. The IP address can also be changed using the 'Factory or Web Menu'. The default address is 10.0.0.192. Note: IP address 0.0.0.0 is reserved.

PERMANENT SUBNET MASK COMMAND - <sub#> (printer will reset after receipt of command)

Note: This function should only be used by an experienced user.

This command permanently changes the Subnet Mask for the network and stores it in flash. The Subnet Mask can also be changed using the 'Factory or Web Menu'. The default mask is 0 (0.0.0.0). This is a reserved value and is used by the printer to indicate there is no subnet. Thus the printer will treat all packets as if they are on a 'direct route'. If you want packets sent to the Gateway Address you must assign one of the following non-zero values (1-32):

0	0.0.0.0 (reserved)	17	255.255.128.0 (class C)
1	128.0.0.0 (class A)	18	255.255.192.0 “
2	192.0.0.0 “	19	255.255.224.0 “
3	224.0.0.0 “	20	255.255.240.0 “
4	240.0.0.0 “	21	255.255.248.0 “
5	248.0.0.0 “	22	255.255.252.0 “
6	252.0.0.0 “	23	255.255.254.0 “
7	254.0.0.0 “	24	255.255.255.0 “
8	255.0.0.0 “	25	255.255.255.128
9	255.128.0.0 (class B)	26	255.255.255.192
10	255.192.0.0 “	27	255.255.255.224
11	255.224.0.0 “	28	255.255.255.240
12	255.240.0.0 “	29	255.255.255.248
13	255.248.0.0 “	30	255.255.255.252
14	255.252.0.0 “	31	255.255.255.254 (unusable)
15	255.254.0.0 “	32	255.255.255.255 (host-single address)
16	255.255.0.0 “		

PERMANENT DEFAULT GATEWAY IP ADDRESS COMMAND - <dgw10.0.1.254> (printer will reset after receipt of command). Note: This function should only be used by an experienced user. This command permanently changes the IP address of the default gateway and stores it in flash. The example above would change the address to 10.0.1.254. The Gateway Address can also be changed using the 'Factory or Web Menu'. The default address is 10.0.0.192. Note: the subnet value must be non-zero in order for the Gateway Address to be valid.

ETHERNET PORT CONFIGURATION - <epc#> (printer will reset after receipt of command)
Normally, the printer will auto-negotiate its port configuration with the network. Some customers have asked for the ability to manually set the speed and duplex settings of the Ethernet port. This command permanently stores the selected port settings in flash. The values (#) can range as shown below:

- 0 - Auto-negotiate
- 1 - 100 Mbps/Full duplex
- 2 - 100 Mbps/Half duplex
- 3 - 10 Mbps/Full duplex
- 4 - 10 Mbps/Half duplex

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APPENDIX G – 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 wireless server/router you are connecting to. To initially configure the wireless settings it will be necessary to connect to the printer via the Parallel, RJ12, USB or Ethernet (if so equipped) interface.

We recommend using the Boca Systems Customer program to perform this task (see [Appendix E](#)). After installing the Boca Systems Customer program, click on the “Update” button to acquire any recent modifications to the tool. Once you have the program running click on the Help button in the upper right hand corner. In the Select Printer Operations choose Configure Wi-Fi Connection for step by step instructions.

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

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