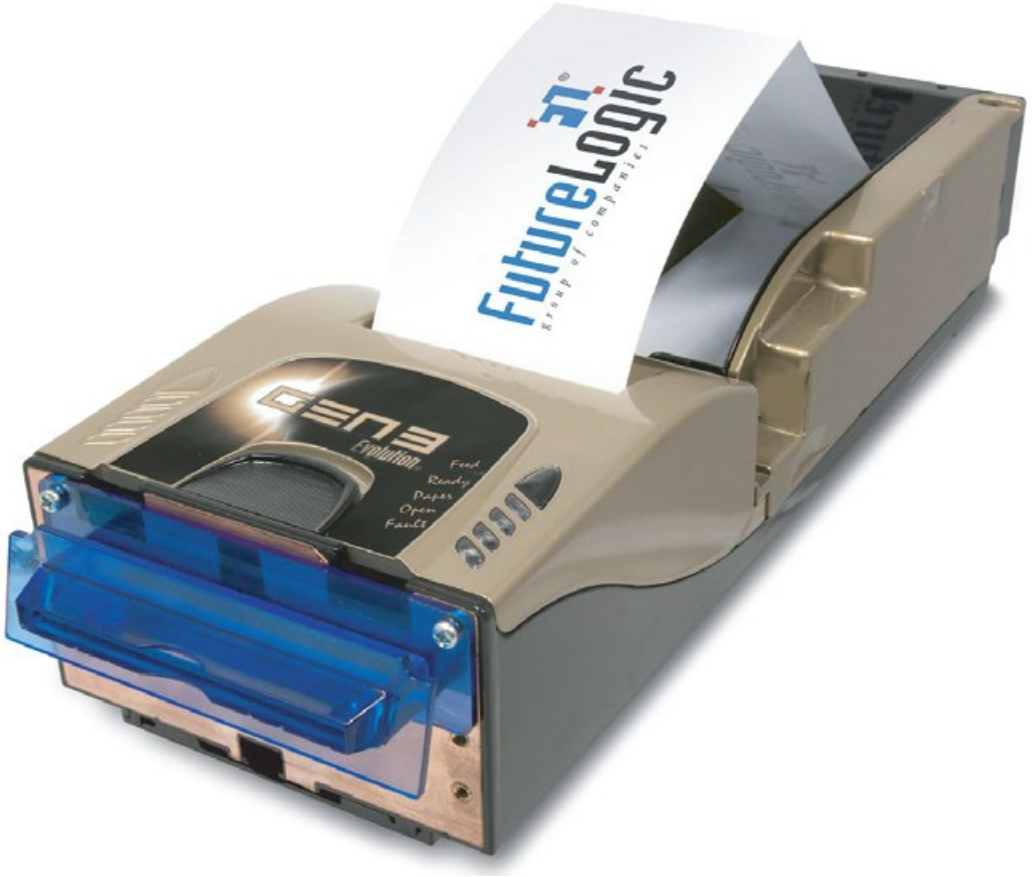
# Operators and Technicians Manual

GEN3 Evolution® Printer




**PSA-66-ST3 (RS232/USB)**

While PSA-66-ST3 refers to all models of the printer, this manual is primarily for the RS232/USB interface of the GEN3 Evolution printer.

English (US)

Operators and Technicians Manual

GEN3 Evolution® Printer (PSA-66-ST3 (RS232/USB))



04/10/2014

MNL-000067

REV.X03

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# 1 Manual Overview

## Introduction

This manual is a comprehensive guide to the specifications and usage of the GEN3 Evolution® printer (PSA-66-ST3).

## Applicability

This manual covers the GEN3 Evolution printer using an RS232/USB interface.

## Intended Audience

Operators and Technicians

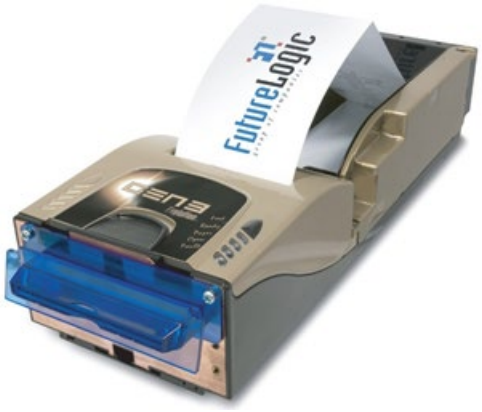
## Conventions

| Example | Description |
|---|---|
|  | This is a Note. A note includes information that emphasizes or supplements important points of the topic. |
|  | This is a Tip. A tip provides techniques and procedures to aid with a task. |
|  | This is a Caution. A Caution emphasizes information that may cause damage to equipment and/or injury to a person. |
| **Bold text** | This document uses this style to identify a field, a button to press, a command selection, and an option selection. |

# 2 Product Overview

## Introduction

Thank you for choosing the FutureLogic GEN3 Evolution printer.



Features of the GEN3 Evolution printer include:

- Universal connectivity. The GEN3 Evolution printer supports RS232, Netplex and USB 2.0 (Future GSA Compliant, GDS, SPC/IGT Compliant) connectivity with a simple change of firmware.
- High-speed printing. Up to 8 inches per second printing.
- ITH® Intelligent Ticket Handling. The GEN3 Evolution printer advanced technology presents the ticket only after it is fully printed and separated.
- Firmware upgrade via FLDFU utility or directly via USB plug-in thumb drive.
- Enhanced low paper sensor to eliminate paper waste.
- Upgradable via expansion slot.
- Paper jam reduction via blocked bezel detection.
- 450 Standard Ticket capacity.
- Hot Swappable.

## Technical Support

Email: techsupport@FutureLogic-Inc.com

Web site: http://www.futurelogic-inc.com/support/

Service & Support Center Hotline (US Customers ONLY): 1-855-FL-HELP-U (1-855-354-3578)

## Warranty Information

The GEN3 Evolution printer comes with a two-year warranty.

# 3 Standard Operation

## Introduction

This chapter covers the standard usage of the GEN3 Evolution printer.

## Product View

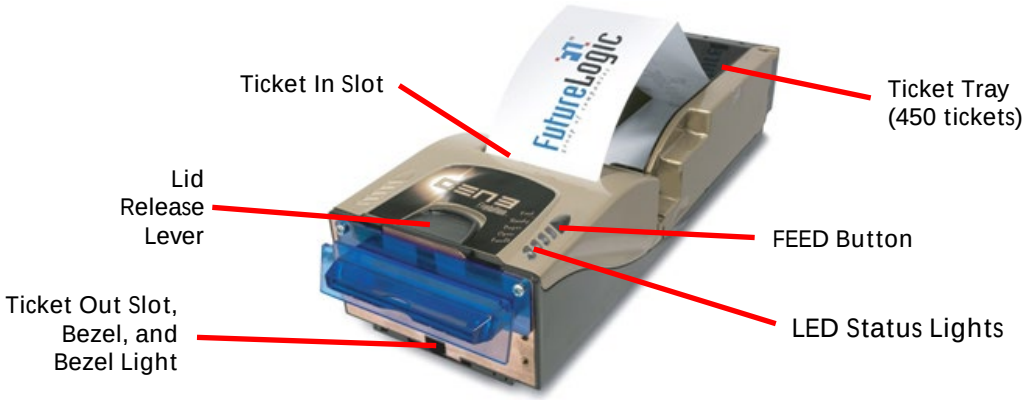



**Figure 3-1 GEN3 Evolution Printer Components**

| Component | Description |
|---|---|
| Ticket In Slot | Use to load ticket stock with automatic alignment. |
| Lid Release Lever | Push to access the Print Head, Paper Path, Feed Rollers, and Ticket Release Lever. |
| Ticket Out Slot | Use to access printed tickets. |
| *(Optional)* Bezel and Bezel Light | Use to attach the Bezel to the printer or mount to align the Bezel with the printer Ticket Out Slot when the game or kiosk door is closed. See also Bezel Light on page 3. |
| FEED Button | Use to feed paper or print Configuration Tickets (see page 6). |
| LED Status Lights | Use to determine the printer status. See also page 4. |
| Ticket Tray | Use to hold up to 450 tickets. |

## Bezel Light

The front Bezel Light determines the printer state without opening the game or kiosk. For the current ratings of the Bezel Ports, see page 11.

| Bezel Display | Status | Description |
|---|---|---|
| ● | ON | Printer idle and ready |
| ✳ | Slow flash | Tickets low or printer error |
| ✳ | Fast flash | Ticket printing / take ticket |
| ○ | OFF | Printer or game is switched off |

### LEDs/Status Lights

The LEDs report the printer status whenever power is present. For troubleshooting, see page 34.

| Condition | Ready (Green) | Paper (Yellow) | Open (Orange) | Fault (Red) |
|---|---|---|---|---|
| No Power | | | | |
| Ready | ON *Flashing* | | | |
| No Ticket Detected | | ON | | |
| Paper Jam Detected | ON | | | ON *Flashing* |
| Printer Lid Open | | | ON | |
| Firmware Problem (Flushed) | ON | ON | ON | ON |
| Hardware Fault Detected | | | | ON |

## Ticket and Print Head Release Levers

The GEN3 Evolution printer includes two Release Levers, accessible by opening the Printer Lid:

- **Ticket Release Lever.** Use to release or remove tickets.
- **Print Head Release Lever.** Use during cleaning and maintenance.

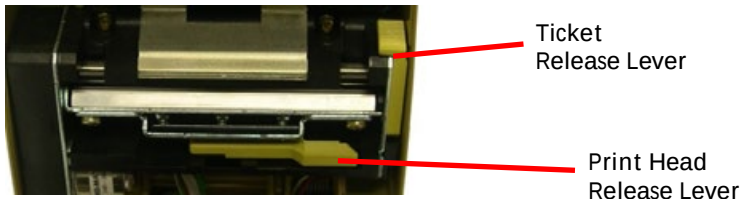



**Figure 3-2 Ticket and Print Head Release Levers**

## Load Tickets

**Note:**
If the printer detects it has no tickets or a ticket-low condition, the Bezel Light will flash.

1. Open the game door.
2. Pull the printer forward on its Sliding Base. The Yellow Status Light (Paper) will be lit on the printer.

**Figure 3-3 Pull Printer Forward**

3. Open a new ticket stack and fan it out.

**Note:**
It is normal for tickets to stick together slightly due to pre-printing and packing. Bend or fan the stack as shown to loosen them.

**Figure 3-4 Fan Paper**

4. Load the new ticket stack.
   Note the Index Mark position.

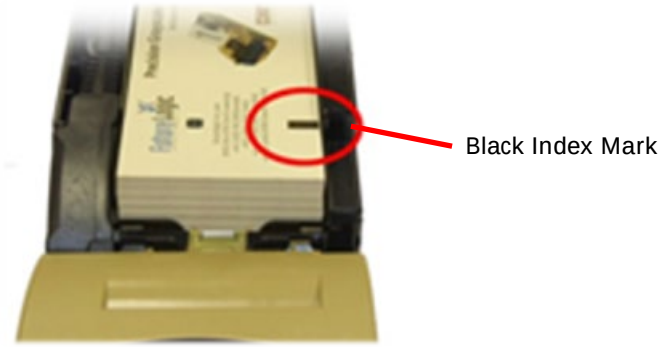



**Figure 3-5 Load Ticket Stack**

5. Feed the first ticket into the Ticket In Slot with the Index Mark side up.
   The ticket automatically aligns; the Status Light changes from Yellow (Paper) to Green (Ready).

**Note:** With no ticket present, over time the Print Head may stick slightly to the Rubber Roller. An indicator of this is if the motor turns but the ticket does not feed. To remedy, lift the Printer Lid; use the Ticket Release Lever to release the Print Head from the Roller; close the Lid; and re-load the ticket stock.

6. Push in the printer.
   Close the game door to resume normal operations.

## Clear a Ticket Jam

When clearing a ticket jam:

- Keep the ticket path from the entry point of the Ticket In Slot, through the printer, cutter, and the ticket module chute are clear of tickets or obstructions.
- Do not allow a screwdriver or other probing object to make contact with the printer. This can cause permanent damage to the printer.

1. Remove the ticket from the Ticket In Slot.
2. Press the Lid Release Lever.
   The spring-loaded Lid opens, exposing the paper path.

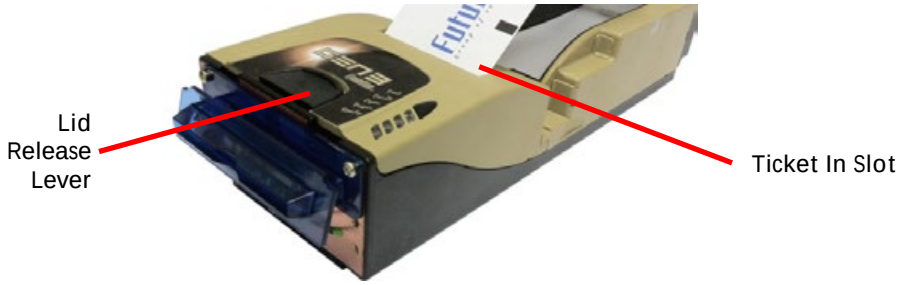



**Figure 3-6 Lid Release Lever and Ticket In Slot**

3. Remove the jammed ticket.
   If necessary, pull the Print Head Release Lever to access the ticket path through the print mechanism.

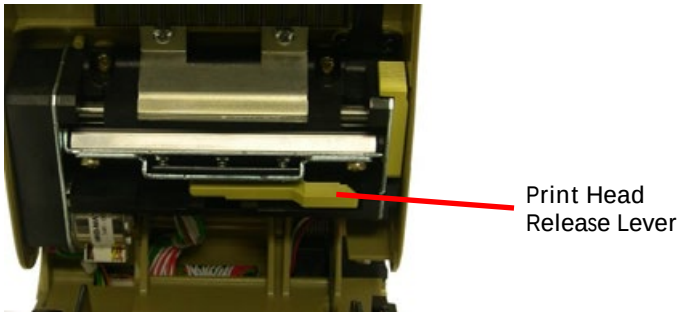



**Figure 3-7 Print Head Release Lever**

4. Once you clear the jam, reverse these steps to return the printer to a ready state.
5. Load the ticket stock.

# 4 Maintenance & Service

## Introduction

This chapter provides instructions on printer maintenance and service outside of the game.

## Printer Sensors

The printer has five sensors that work with the game firmware to provide reliable trouble-free operation.

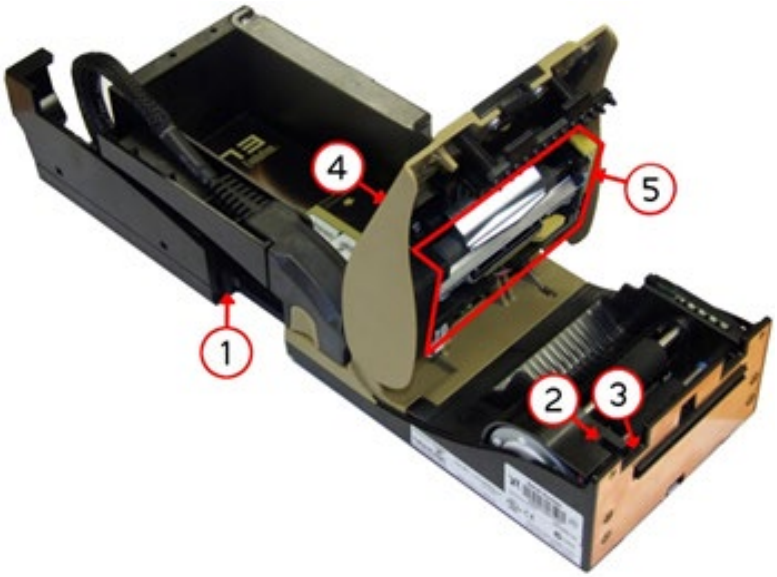



**Figure 4-1 Printer Sensors**

| Num | Sensor | Description |
|---|---|---|
| 1 | Printer Tray (Drawer Open) | This plastic tab and sensor detects if the printer is pulled forward. |
| 2 | Lid Open (Printer Open) | This plastic tab and sensor detects if the Printer Lid is open. |
| 3 | Ticket Taken (Paper Taken) | This sensor detects tickets being presented and if the ticket is taken. It is located in front of the feed rollers, just behind the Ticket Out Slot. |
| 4 | Ticket Low (Paper Low) | This sensor, located under the Ticket Tray, activates when the last ticket is taken from the Ticket Tray. This sensor determines when the paper stack has approximately 1 or 2 tickets remaining. A Paper Low condition automatically resets once a stack with a greater height is loaded. Paper low sensing occurs when the system is idle and takes a few seconds to detect the new paper level. |
| 5 | Paper Out / Index Mark | This sensor is located within the Print Head. It detects when a ticket is present. It also detects the index top-of-form (TOF) mark. |

# Remove the Printer for Servicing Outside of Game

The GEN3 Evolution printer mounts inside the machine on its own fixed-position Sliding Base. The main body of the printer slides forward to a stop-point on the base for easy access (for example, to load tickets).

**Note:** Although the printer is hot swappable, it is still a good practice to turn off the power.

**CAUTION! ESD Sensitive Equipment!**

Electronic boards and their components are sensitive to static electricity. Care must be taken during all handling operations and inspections of this product in order to ensure product integrity at all times.

Do not handle this product out of its protective enclosure while it is not in use for operations purposes unless it is otherwise protected. Discharge your clothing before touching the assembly. Discharge tools before use.

Where a safe workstation is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools.

1. From the game, open the game door and disconnect the power.
2. Pull the printer forward until it stops in the Sliding Base.

**Figure 4-2 Pull Printer Forward**

3. *(Optional)* Remove the paper from the printer.
4. Disconnect the Interface Cable Connector.

**Figure 4-3 Disconnect Interface Cable Connector**

5. Push and hold the Release Slide (on bottom of printer) and pull out the printer from its Sliding Base.

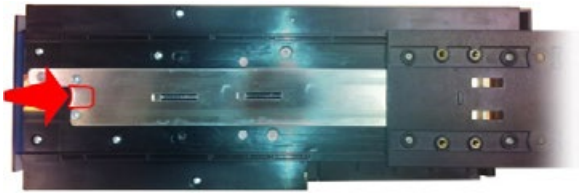


**Figure 4-4 Pull and Hold Release Slide**

## Replace the Printer in a Game

1. Align the printer with the Sliding Base; slide back.
2. Reconnect the Interface Cable Connector.
3. Push the printer back into the machine.

## Printer Cleaning

### Cleaning Kits

FutureLogic recommends our Cleaning Kits (P/N 350-00292-101) to clean the printer. Each kit includes a cleaning swab, cleaning wipe and a feed-though cleaning card.

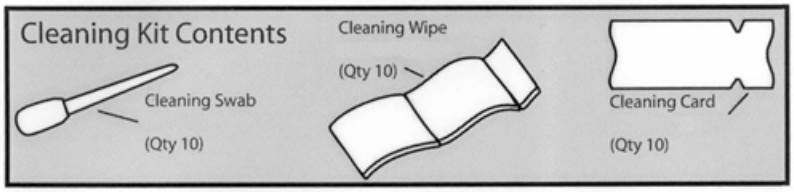



**Figure 4-5 Printer Cleaning Kit**

Pure water or Isopropyl Alcohol IPA Alcohol (99% or more) along with a dampened, lint-free cloth also is sufficient to clean dirty sensors and rollers. Do not use tissue paper, which can disintegrate.

### Procedure

Use the following order to minimize the transfer of dirt onto Sensors and the Print Head.

**Note:**
For detailed instructions, see the Printer Cleaning Guide (MNL-000054).

1. Pull the printer forward on its Sliding Base.
2. Remove any loaded ticket.
3. Raise the Printer Lid.
4. Pull the Print Head Release Lever to release the Print Head.

**Figure 4-6 Pull Print Head Release Lever**

5. Blow or brush away any excess dirt.

**Tip:**
An air nozzle is ideal to blow away dust.

6. Clean inside the Print Head.
   a. Push down and hold the Print Head Release Lever.
   b. Use the cleaning swab to wipe gently along and inside the Print Head.
   c. Release the Print Head Release Lever.

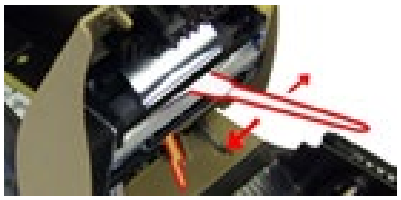


**Figure 4-7 Clean Print Head**

7. Clean the sensors.
   a. Dampen the cleaning swab or cloth.
   b. Clean the sensors – in particular the Printer Open (2) and Ticket Taken Sensors (3).

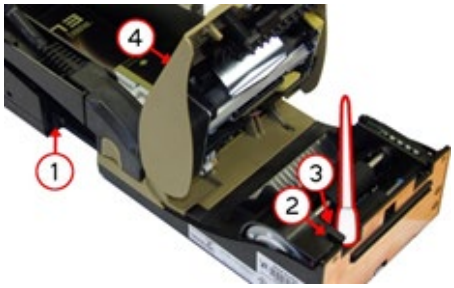



**Figure 4-8 Clean Sensors**

8. Clean the Feed and Print Head Rollers.
   a. Use a damp cleaning cloth to wipe the Rollers.
   b. Turn the Rollers by hand.

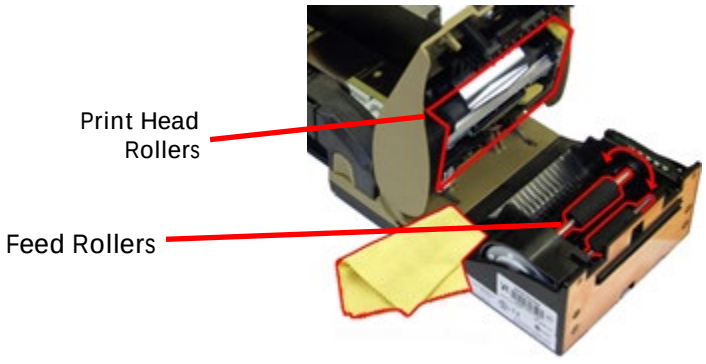



**Figure 4-9 Clean Rollers**

9. After cleaning is complete:
   a. Push in the Print Head Release Lever to close the Print Head.
   b. Close the Printer Lid.
   c. Push the printer back into its position on the Sliding Base.
   d. Reload tickets.

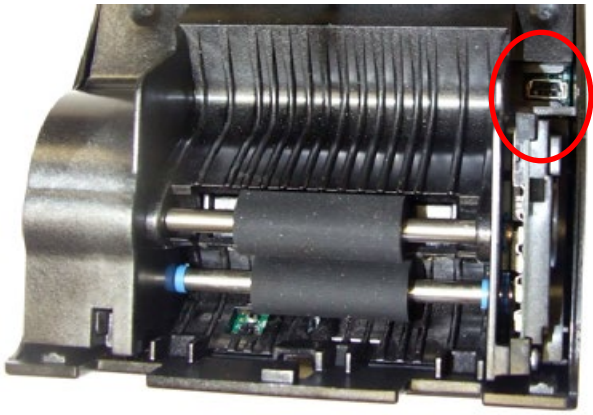
# 5 Ports and Cables

## Introduction

This chapter describes the port pin-outs and cables for the printer.

## Firmware Upload Port

The Firmware Upload Port is a mini USB port inside the Printer Lid. This port upgrades the printer firmware using the USB Plug-In feature while the printer is in and receiving power by the game.



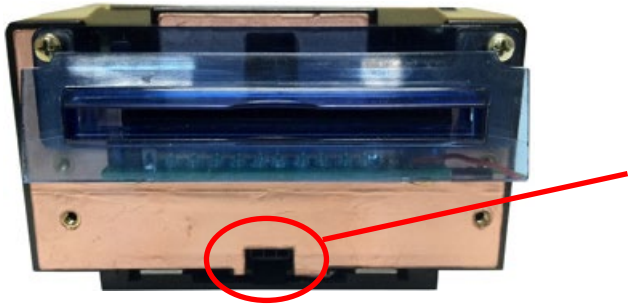

| Pin | Function |
|---|---|
| 1 | V Bus |
| 2 | D- |
| 3 | D+ |
| 4 | GND |
| 5 | GND |

**Figure 5-1 Firmware Upload Port**

To upload firmware to the printer, see page 20.

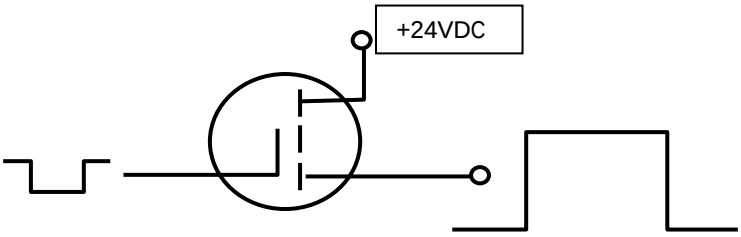
## Front Bezel Port

The Front Bezel Port provides power for illumination of a Bezel attached to the front of the printer. Alternatively, door-mounted Bezels connect to the Interface Cable to draw power for illumination.




| Pin | Function |
|---|---|
| 1 | Switched 24VDC, 1.5A Max. |
| 2 | BGND |
| 3 | Frame (Chassis) Ground |

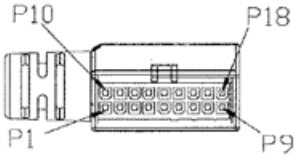
**Figure 5-2 Front Bezel Port**



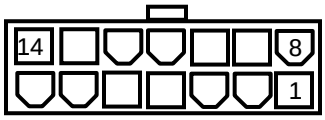
# USB/RS232 Interface Cable

The Interface Cable connects the printer through the Base Port and to the machine through the RS232 Power/ COMM Connector (14-pin).

There are three additional connectors to which connection is optional: USB, Auxiliary Bezel, and Auxiliary Comm Port (RS232).

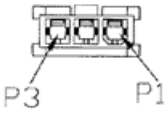




| Pin | Function | Pin | Function |
|---|---|---|---|
| 1 | DGND | 10 | RX2/SCL |
| 2 | DTR 232 | 11 | TX2/SDA |
| 3 | No Connect | 12 | RX1 232 |
| 4 | Switched +24V | 13 | TX1 232 |
| 5 | USB N | 14 | No Connect |
| 6 | USB P | 15 | No Connect |
| 7 | MRESET | 16 | No Connect |
| 8 | +24V | 17 | USB +5V |
| 9 | RTS 232 | 18 | USB GND |

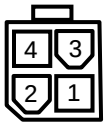



| Pin | Function | Pin | Function |
|---|---|---|---|
| 1 | MRESET | 8 | +24 VDC |
| 2 | No Connect | 9 | Switched +24VDC |
| 3 | No Connect | 10 | DGND |
| 4 | No Connect | 11 | RX1 232 |
| 5 | DGND | 12 | TX1 232 |
| 6 | +24 VDC | 13 | DTR 232 |
| 7 | DGND | 14 | RTS 232 |


| Pin | Function |
|---|---|
| 1 | USB BUS +5V |
| 2 | USB N |
| 3 | USB P |
| 4 | GND |




| Pin | Function |
|---|---|
| 1 | Switched +24V |
| 2 | No Connect |
| 3 | GND |




| Pin | Function |
|---|---|
| 1 | DGND |
| 2 | RX2/SCL |
| 3 | TX2/SDA |
| 4 | No Connect |

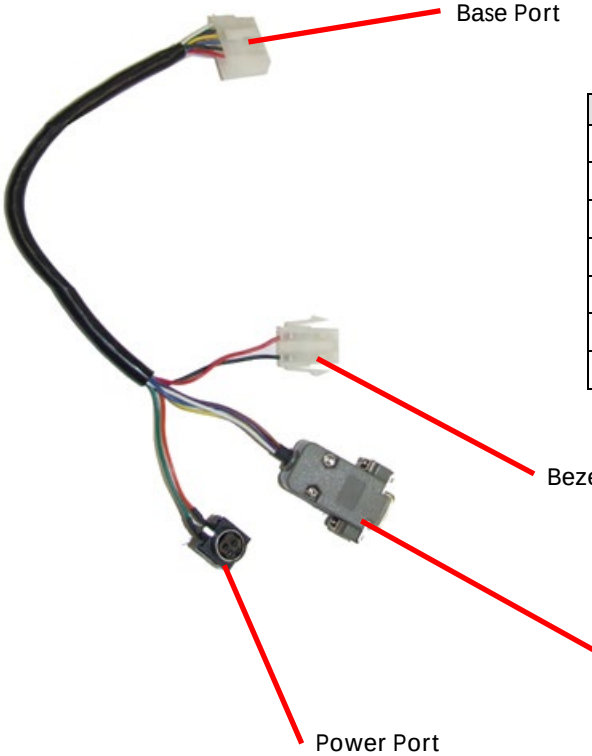
**Figure 5-3 USB/RS232 Interface Cable**

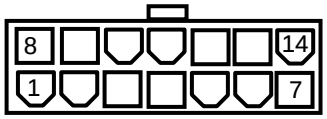
**Note:** For the Bezel LED Port on the cable, no Intermitted or in rush current exceeding 1.5A is allowed.

# RS232 Evaluation Cable

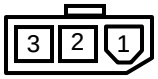
The Evaluation Cable connects the printer outside of the machine. It has a 24Vdc power input port and a standard RS232 COM (DB9) port for PC communications.

P/N 150-00013-100

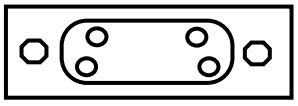



| Pin | Function | Pin | Function |
|---|---|---|---|
| 1 | No connect | 8 | No connect |
| 2 | No connect | 9 | Modulated +24VDC |
| 3 | No connect | 10 | GND |
| 4 | No connect | 11 | RS232 RXD |
| 5 | GND | 12 | RS232 TXD |
| 6 | +24 VDC | 13 | DTR |
| 7 | GND | 14 | RTS |




| Pin | Function |
|---|---|
| 1 | Modulated +24VDC |
| 2 | No connect |
| 3 | GND |




| Pin | Function | Pin | Function |
|---|---|---|---|
| 1 | No connect | 6 | DTR |
| 2 | TX | 7 | No connect |
| 3 | RX | 8 | RTS |
| 4 | No connect | 9 | No connect |
| 5 | GND | | |


| Pin | Function |
|---|---|
| 1 | +24VDC |
| 2 | GND |
| 3 | No connect |

**Figure 5-4 RS232 Evaluation Cable**

## GDS Adapter Cable

The GDS Power Adapter Cable is an optional cable that powers the printer from a standard 1 x 4 Molex mini-fit GDS power port.

P/N 150-00164-100


**Figure 5-5 GDS Adapter Cable**

# 6 Configuration Tickets

## Introduction

This chapter provides detail description of the Configuration Tickets.

## Overview

The Configuration Tickets allow you to identify the current firmware and parameters of each printer. There are two configuration tickets available for printing: Standard and Extended.

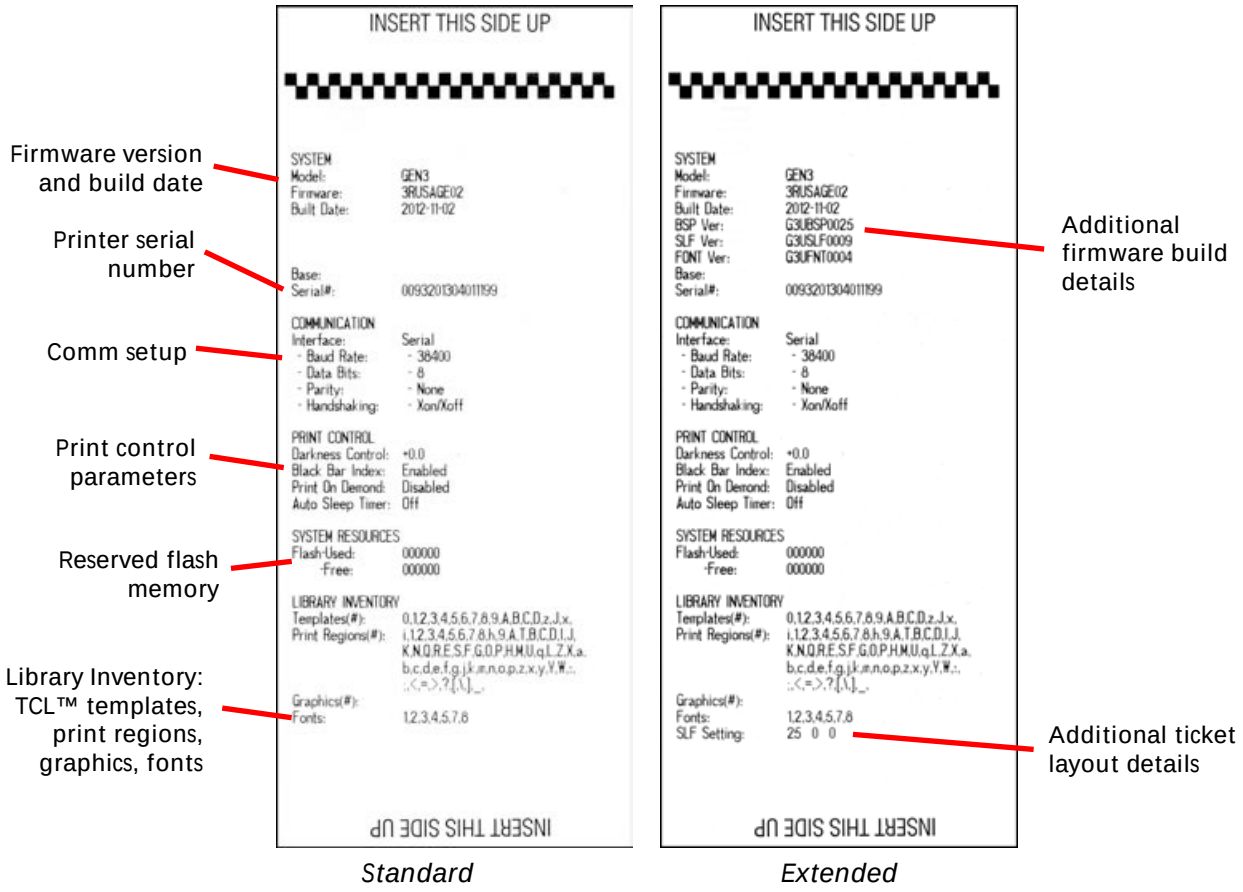



**Figure 6-1 Configuration Tickets**

## Print Standard Configuration Ticket

- Press the FEED button 2 times within 2 seconds.

## Print Extended Configuration Ticket

- Immediately after printing the Standard Configuration Ticket, press twice the FEED button.

# Detailed Description

## Firmware Version

Both Configuration Tickets include the printer firmware version, identifiable by a 9- or 10- digit code beginning with 3, where:

| Code | Communication Setting |
|---|---|
| 3R | RS232 protocol |
| 3U / 3H / 3C / 3P | USB protocol |
| 3N | Netplex |

Printer firmware is specific to the game manufacturer and jurisdiction. In most cases, the firmware version indicates the jurisdiction, manufacturer and release code. For example:

| Firmware | Device | Comm | Country/Jurisdiction | Usage | Release # |
|---|---|---|---|---|---|
| 3RUSAGE02 | GEN3 | RS232 | USA | GE (General) | 02 |
| 3UMACCM01 | GEN3 | USB | Macau | CM (Casino Machines) | 01 |

The Extended Configuration Ticket also includes additional information on BSP, SLF, and Font versions.

**Note:**
Check with the OEM for the approved firmware version for your game and jurisdiction.

## Printer Serial Number

Both Configuration Tickets include the printer serial number (also located on the Serial Number sticker on the side of the printer). The Serial Number incorporates the printer manufacture date where:

| Code | Description |
|---|---|
| xxxx | Product Code |
| YYYY | 4-Digit Year |
| MM | 2-Digit Month |
| DD | 2-Digit Day |
| nnnn | Number |

## Comm Setup

Both Configuration Tickets include the communication mode according to the manufacturer.

## Print Control Parameters

Both Configuration Tickets include optional print control parameters, normally left with default settings.

Only a machine manufacturer can change the print control parameters.

## Reserved Flash Memory

Both Configuration Tickets include reservable Flash memory for library usage such as graphics or additional library objects.

## Library Inventory

Both Configuration Tickets include the Library Inventory of TITO (ticket-in, ticket-out) ticket layouts, stored as regions and templates. The Library Inventory is pre-set in the printer firmware by the machine manufacturer. Only the machine manufacturer can change the Library Inventory.

The Extended Configuration Ticket also includes additional information on the SLF Setting.

# 7 Memory/LED Module

## Introduction

This chapter provides complete details on the Memory/LED Module of the GEN3 Evolution printer, including procedures on setting the printer communication and removing the module.

## Overview

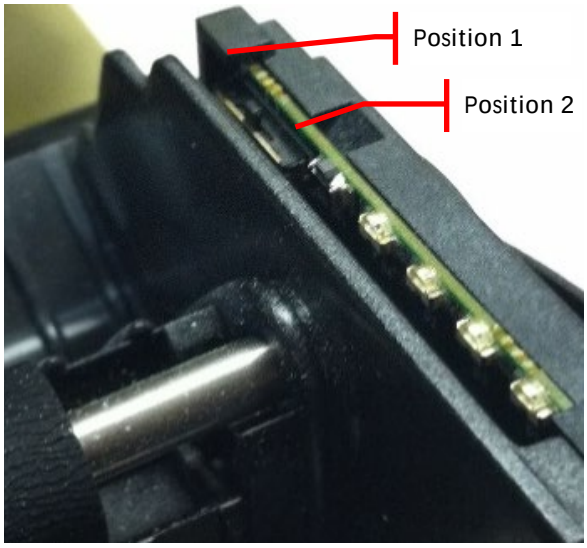



**Figure 7-1 Memory/LED Module**

The Memory/LED Module includes a Communication Setting Switch (COMM Switch) next to the LED indicators as shown. The COMM switch is a momentary three-position slide switch where the middle is the normal position.

- To activate Position 1: slide the switch towards the Ticket Tray.
- To activate Position 2: slide the switch towards the front of the printer.

When using the COMM switch, note the following:

- The de-bounce time for either activating or deactivating each switch position is 50 ms.
- The selection of either Position 1 settings (0 to 7) or Position 2 settings (0 to 15) operates in a ring cycle. It will re-start from zero after the maximum is reached.
- Position 1 and Position 2 have an auto-increment function that advances the appropriate index by holding the switch in the active position for more than three quarters of a second.

# Set the Printer Communication

**Note:**
Perform this procedure with the unit powered on.

1. Press the Lid Release Lever to open the Lid.
2. Slide and release the COMM Switch to Position 1. The Red LED flashes. The selection is now Port 1.
3. *(Optional)* To step to Port 2, slide the COMM Switch again to Position 1.
4. Slide or hold the COMM Switch to step through the port selection options.

| Position 1 Setting | LEDs | | | | Parameter | Notes |
|---|---|---|---|---|---|---|
| | Green | Yellow | Orange | Red[1] | | |
| 0 | OFF | OFF | OFF | ***Flashing*** | Port 1 | Main |
| 1 | **ON** | OFF | OFF | ***Flashing*** | Port 2 | Secondary |
| 2 | OFF | **ON** | OFF | ***Flashing*** | Port 0 | Debug |
| 3 | **ON** | **ON** | OFF | ***Flashing*** | Not Used | Not Used |
| 4 | OFF | OFF | **ON** | ***Flashing*** | Not Used | Not Used |
| 5 | **ON** | OFF | **ON** | ***Flashing*** | Not Used | Not Used |
| 6 | OFF | **ON** | **ON** | ***Flashing*** | Not Used | Not Used |
| 7 | **ON** | **ON** | **ON** | ***Flashing*** | Not Used | Not Used |

Table Note: [1] The red LED indicating the settings selection mode blinks at a rate of 200 ms.

5. Slide the Comm Switch to Position 2.

   The Red LED stops flashing; all LEDs are off. The selection is now 9600 Baud, Xon Handshaking.
6. To select other baud rate and handshaking parameters, slide or hold the COMM Switch in Position 2 to step and cycle through the table below.

| Position 2 Setting | LEDs | | | | Baud Rate | Handshake |
|---|---|---|---|---|---|---|
| | Green | Yellow | Orange | Red | | |
| 1 | OFF | OFF | OFF | OFF | 9600 | XON (SW) |
| 2 | **ON** | OFF | OFF | OFF | 9600 | RTS (HW) |
| 3 | OFF | **ON** | OFF | OFF | 38400 | XON (SW) |
| 4 | **ON** | **ON** | OFF | OFF | 38400 | RTS (HW) |
| 5 | OFF | OFF | **ON** | OFF | 115200 | XON (SW) |
| 6 | **ON** | OFF | **ON** | OFF | 115200 | RTS (HW) |
| 7 | OFF | **ON** | **ON** | OFF | 19200 | XON (SW) |
| 8 | **ON** | **ON** | **ON** | OFF | 19200 | RTS (HW) |
| 9 | OFF | OFF | OFF | **ON** | 57600 | XON (SW) |
| 10 | **ON** | OFF | OFF | **ON** | 57600 | RTS (HW) |
| 11 | OFF | **ON** | OFF | **ON** | 230400 | XON (SW) |
| 12 | **ON** | **ON** | OFF | **ON** | 230400 | RTS (HW) |
| 13 | OFF | OFF | **ON** | **ON** | 460800 | XON (SW) |
| 14 | **ON** | OFF | **ON** | **ON** | 460800 | RTS (HW) |
| 15 | OFF | **ON** | **ON** | **ON** | 921600 | XON (SW) |
| 16 | **ON** | **ON** | **ON** | **ON** | 921600 | RTS (HW) |

7. Slide the COMM Switch back to Position 1 to accept and save the changes.

   The LEDs blink in a sequence pattern for approximately 200 ms then return to normal. This indicates the setting updates are now in use.

**Note:** If the LED indicators illuminate at once, the module settings were not accepted. Repeat the procedure. Additionally, print a Configuration Ticket to check the module setting.

## COMM Switch Examples

To set the printer Main Port to communicate at 9600 Baud with Xon/Xoff handshaking:

1. Slide the COMM Switch to Position 1. The Red LED flashes.
2. Slide the COMM Switch to Position 2. The Red LED stops flashing, all lights are OFF.
3. Slide the COMM Switch to Position 1.

To set the printer Secondary Port 2 to communicate at 57600 Baud with Xon/Xoff handshaking:

1. Slide the COMM Switch to Position 1. The Red LED flashes.
2. Slide the COMM Switch to Position 1 again. The Green LED turns on; the Red LED continues to flash. The selection is now Port 2.
3. Slide the COMM Switch to Position 2. All LED lights turn OFF.
4. Slide or hold the COMM Switch for 8 more times. The LED lights will step through the settings according to the Position 2 table. For 57600 with Xon, only the Red LED will be ON.
5. Slide the COMM Switch to Position 1 to save this setting.

## Remove the Memory/LED Module

**WARNING!** To prevent damage to the Memory/LED Module or the printer circuit board, turn off power to the printer before you remove or insert the Module.

1. Disconnect power to the printer.
2. Press the Lid Release Lever to open the Lid.
3. Locate the Memory/LED Module to the right of the Print Head.
4. Remove the two screws from the Module.

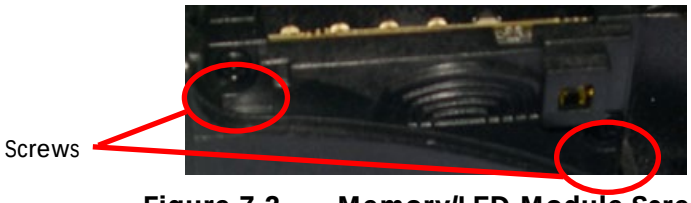



**Figure 7-2 Memory/LED Module Screws**

5. Pull out the Module from the printer.

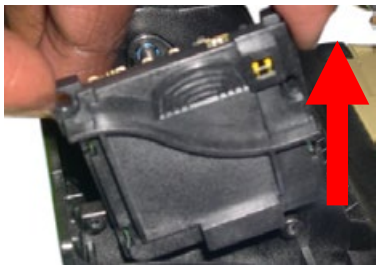


**Figure 7-3 Pull Out Module**

# 8 Firmware Upgrade

## Introduction

There are two methods to upgrade the printer firmware:

- ***(Recommended)* Method 1: USB plug-in firmware upgrade.** Use a USB plug-in (thumb) drive formatted with the FAT-32 filesystem. Most firmware versions are upgradeable this way.
- **Method 2: FLDFU™ upgrade program.** Use the printer's USB cable and the FLDFU program to upgrade the printer firmware from a PC or laptop.

Either method allows the printer to remain in the machine, or use the following on a test bench:

| Item (FL Part Number) | Description |
|---|---|
| RS232 Evaluation Cable (P/N 150-00013-100) | This cable powers the printer from a 24Vdc source and provides a connection to a standard DB9 RS232 COM port. |
| 24Vdc Power Supply (P/N 350-00199-100) | Recommended |

**Note:** Printer firmware and the FLDFU program are available for download:
http://www.futurelogic-inc.com/support/firmwareRequest/
Additionally, you can request manufacturer-specific firmware from the game manufacturer.

## Method 1: Firmware Upgrade using USB Plug-in (Recommended)

### Overview

To use this method, you will need:

| Item | Description |
|---|---|
| USB A-socket to mini adapter cable | Connects to Firmware Upload Port. |
| USB drive | Format this drive to the FAT-32 filesystem. This drive contains the firmware and control file that the printer uses to detect if an upgrade is necessary. The USB drive plugged into the Firmware Upload Port automatically upgrades the firmware. |
| FutureLogic firmware file | The firmware file has a file extension of .DFU / .SHA / .BIN (for example, 3RXXX123.DFU) |
| Firmware Control File (FWUpgradeCtrl) | The printer uses the control file to identify and control the firmware upgrade. This required file is necessary for the upgrade procedure. |

**Note:** FWUpgradeCtrl does not have a file extension such as .TXT. To save in Windows, set **Save as type** to **All Files**. It may also be necessary to switch off the Hide extensions for known file types in Windows Folder Options.

An example of the content of this file is as follows:

```
#
# FWUpgradeCtrl
#

# Number of firmware files
FileCount=1

EraseVolume=11

# Firmware bundle file
Filepath_1=3RXXX123.DFU
Filedesc_1=None
Reboot_1=1
```

**Note:**
The line, **Filepath_1**, identifies the firmware version in use. To edit this line to change the firmware version, open this file in any text editor program.

## Procedure

1. Copy these files to the USB drive:
   - FWUpgradeCtrl
   - Firmware DFU

   If the firmware is in .BIN or .SHA format, re-save or rename the file with .DFU extension.
2. *(If in a game)* Pull out the printer.
3. Power-off the printer and open the Lid.
4. Use the adapter cable to plug the USB drive into the Firmware Upload Port.

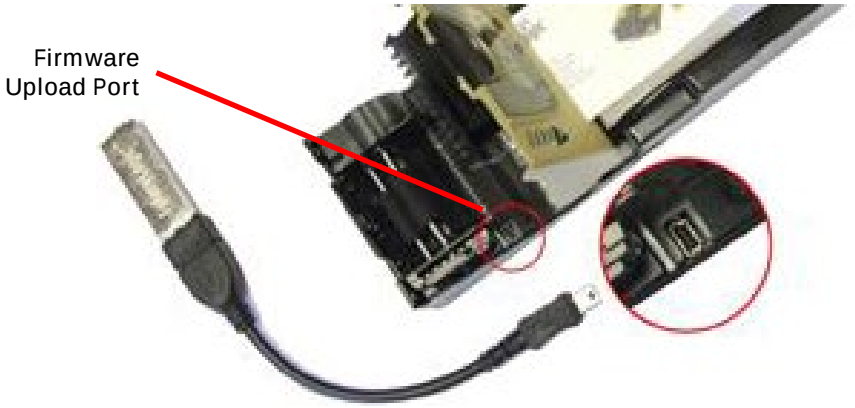



**Figure 8-1 Plug Adapter Cable into Firmware Upload Port**

5. Power-on the printer.

   The upgrade starts automatically and takes up to 1 minute. When complete, all four Status Lights will flash once.

**Note:**
If all four Status Lights stay lit or continue to flash, an error occurred. Check the FWUpgradeCtrl file is correct and restart the process. If the problem persists, refer to the upgrade procedure using the DFU Program (see page 22).

6. Press twice the FEED button to print a Configuration Ticket that lists the firmware version.
7. *(Optional; skip this step if no change is required)* Use the COMM Switch to make any change to the communication parameters (baud rate, etc.) as advised by the manufacturer or FutureLogic.
8. Repeat the process from Step 2 for other printers to upgrade with the same firmware.

# Method 2: Firmware Upgrade using FLDFU Program

## Overview

This method uses a PC or laptop with the FLDFU program and the printer Interface Cable USB connection.

**Tip:**
A Video Tutorial is also available on our website: http://www.futurelogic-inc.com/videos/training/

To use this method you will need:

| Item (FL P/N, if any) | Description |
|---|---|
| PC or laptop | Windows XP or Windows 7 32- or 64-bit with an available USB port. |
| FutureLogic FLDFU program and drivers | FLDFU version 2.x and drivers are available for download from the FutureLogic Exchange™ secured site. |
| FutureLogic firmware file, with extension .DFU / .SHA / .BIN | (For example, 3RXXX123.DFU) Download the Firmware from the FutureLogic Exchange secured site or from the game manufacturer. |
| RS232 Evaluation Cable (P/N 150-00013-100) | This cable powers the printer from a 24Vdc source when the printer is out of a game. |
| 24Vdc Power Supply (P/N 350-00199-100) | The Power Supply provides the necessary power when the printer is out of a game. |

## FLDFU and Driver Installation (First Time)

This section describes how to install the FLDFU program and GEN3 Evolution printer drivers for first-time use. Skip this section for any PC or laptop already set up with FLDFU version 2.x.

**Note:**
The following two sections are a summary and assume the user is familiar with Windows program and driver removal and installation. For complete instructions, refer to *FLDFU Utility v2.x User Guide* (MNL-00071).

***Procedure: FLDFU Installation (First-time Use Only)***

1. Use Windows Control Panel to remove any previous version of FLDFU.

   This ensures that the Windows registry will not contain old drivers.
2. Run the installer **FLDFUSetupV2x.exe**.

   The InstallShield Wizard displays.

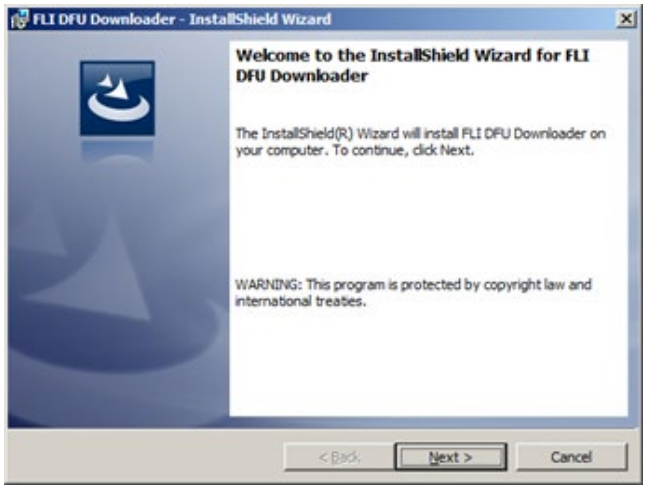



**Figure 8-2 InstallShield Wizard**

3. Click **Next**.
4. Click **Install**.
5. When finished, click **Finish**. If prompted, restart the computer.

***Procedure: Driver Installation (First-time Use Only)***

The printer uses USB for the upgrade process. When the printer is connected to the PC or laptop, the Windows Device Manager will show the printer during first time connection as unrecognized devices:

- FL GEN3 USB PRINTER: Use as a virtual COM port
- FLI-CDC-DFU 1.1.v: Use for Device Firmware Upgrade

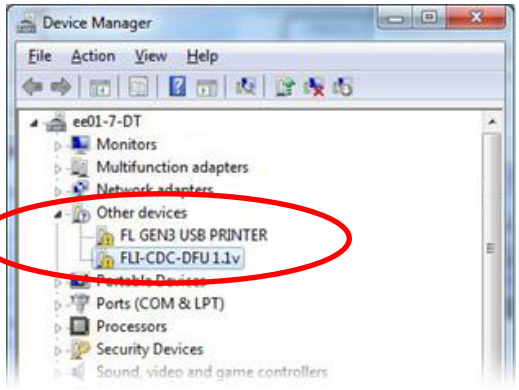



**Figure 8-3 Device Manager**

1. In Windows Device Manager, right-click **FLI-CDC-DFU 1.1v** and update the driver.

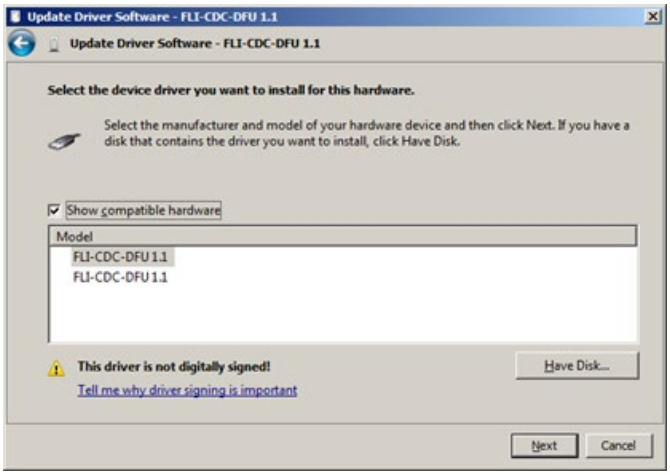



**Figure 8-4 Update Driver Software Window**

2. Click **Have Disk** to manually browse for driver selection in either of the following locations:
   - C:\Program Files\FutureLogic\FLI DFU Downloader\dfuPrinterFL
   - C:\Program Files (x86)\FutureLogic\FLI DFU Downloader\dfuPrinterFL.
3. Using the dfuPrinterFL.inf file, select either FLI-CDC-DFU 1.1 in the **Model** list; click **Next**.

   The DFU drivers install.
4. *(Optional; if required for CommWrangler functional testing)* Install the virtual COM port drivers. (Refer to Chapter 9 on page 28.)
   a. Request and obtain the required CDC driver package from FutureLogic.
   b. Right-click **FL GEN3 USB PRINTER**; use the CDC driver package to install manually the virtual COM port.
5. After driver installation, the Windows Device Manager updates. The printer is ready for firmware upgrade. Continue with the procedure on page 25.

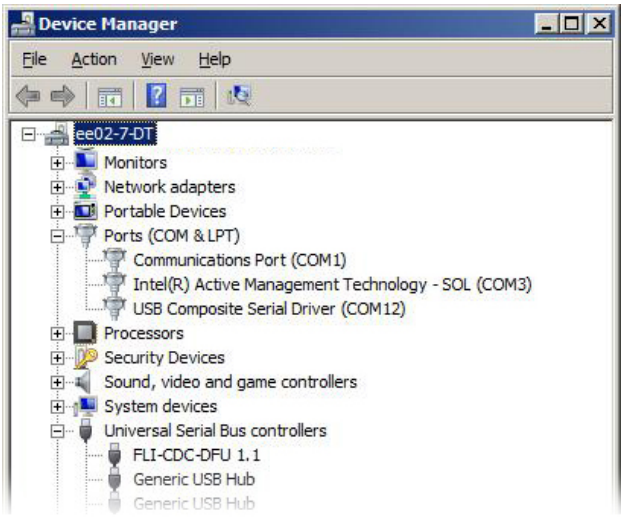



**Figure 8-5 Device Manager**

## Procedure: Firmware Upgrade

This section describes how to upgrade the printer firmware using the FLDFU program. A pre-requisite to this procedure is completion of the program and driver installation as described in FLDFU and Driver Installation (First Time) on page 22.

1. *(If in a game)* Connect the printer to the PC or laptop using the cable USB connector.
   *(If out of a game)* Also use the RS232 Evaluation Cable and Power Supply.

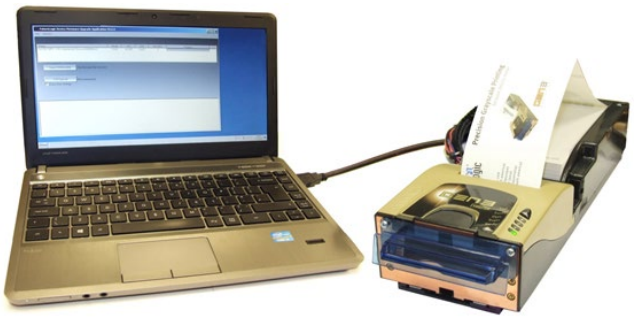


**Figure 8-6 Printer Connection to Laptop**

2. Start the FLDFU program.
3. The GEN3 Evolution printer appears in the Device List area. The device(s) shown in this area depend on the firmware type.
4. If there is an entry in this list, there is communication with the printer. If the list contains no device, check the printer power and refer to Procedure: Driver Installation (First-time Use Only) on page 23.

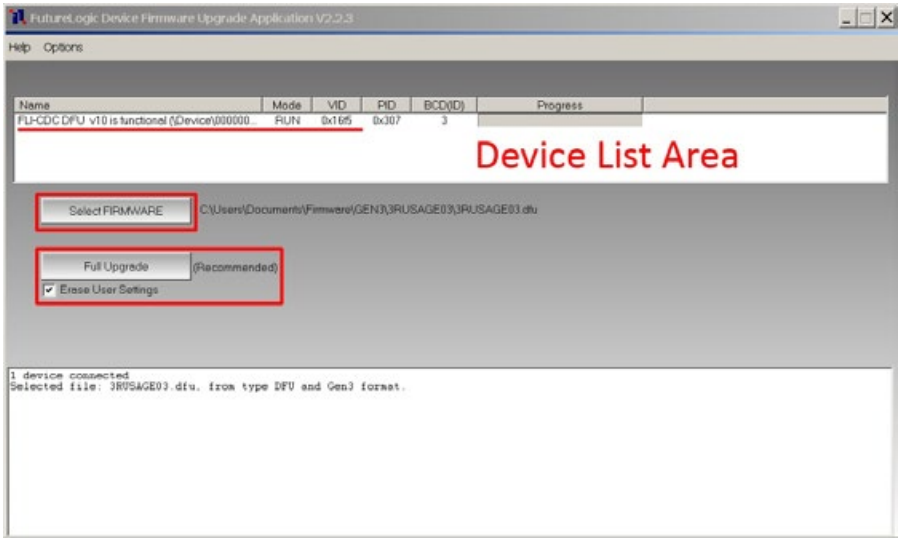



**Figure 8-7 FLDFU Main Window**

5. Click **Select Firmware** and browse to location of the firmware file to load.
   These can be in either .DFU or .SHA format.

**Note:**
Firmware files with a .BIN extension may be renamed or saved as .SHA.

6. *(Recommended for most firmware versions)* Select **Erase User Settings**.

   This will reset the previous communication parameters (baud rate and handshaking) to the new firmware default settings.

7. Click **Full Upgrade**.

   The upgrade cycle may repeat depending on the firmware and if you select **Erase User Settings**.

   The green status icon on the top right of the screen will flash continuously until the process is complete.

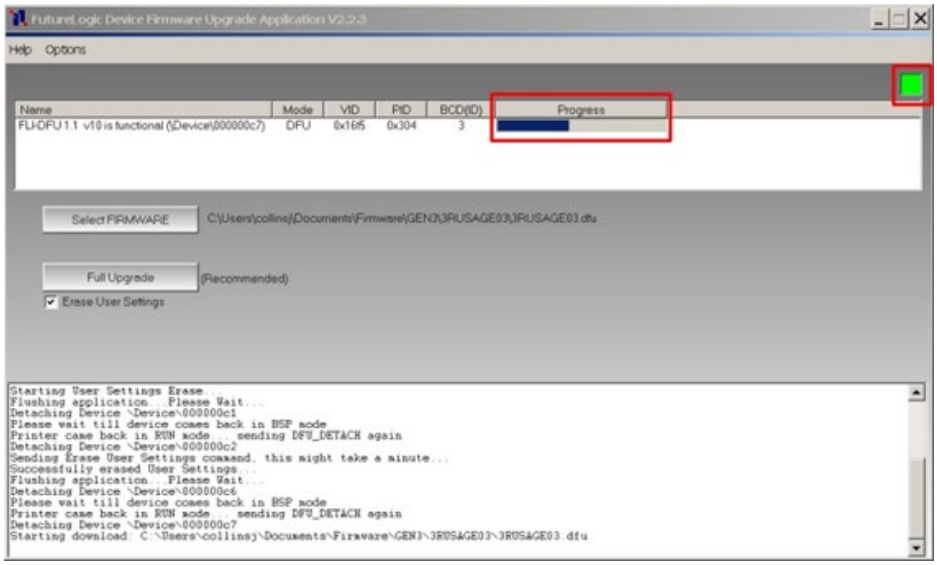



**Figure 8-8 FLDFU Main Window – Progress Area**

8. Wait for the *"Printer Successfully Updated"* message to display in the status area.

**WARNING!**
Do not stop the process or unplug the printer.

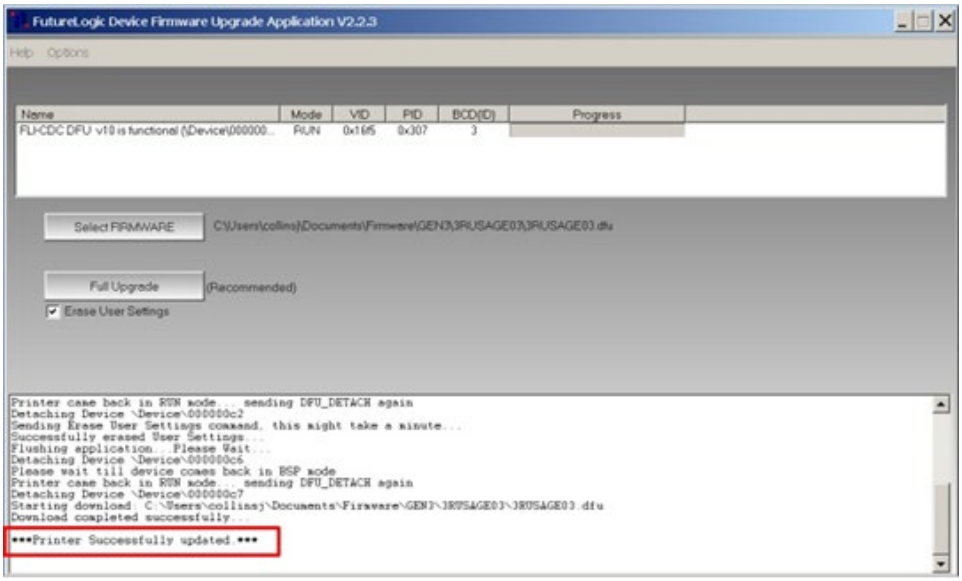



**Figure 8-9 FLDFU Main Window – Status Area**

9. After this message displays and the flashing green status icon disappears, disconnect the printer.
10. Press the FEED button twice to print a Configuration Ticket. This ticket confirms the upgrade.
11. *(Optional)* Set user communication settings. Use the COMM Switch to make baud rate and handshaking changes (see page 18).

If the default firmware communication settings require no change, the upgrade is complete.

## Method 2 Troubleshooting

| Issue | Description and Solution |
|---|---|
| (Windows XP)<br>Drivers need to be reloaded. | Windows 7 pre-installs drivers.<br>As Windows XP does not pre-install, manual driver installation is necessary every time it detects a device or port change. |
| New devices found. | The GEN3 Evolution printer supports different communication protocols: DFU, PDC, CDC, GDS/HID, SPC USB. Windows associates a driver for each protocol.<br>The firmware upgrade uses at least 2 protocols. The firmware upgrade also uses more protocols if there is a change in the firmware type. |
| (Windows 7)<br>FLDFU shuts down unexpectedly. | Old DFU drivers may conflict with the new drivers.<br>Use **Add/Remove Programs** to remove the old versions and associated drivers for FLDFU (for example, FLDFU v.1.1). Restart the computer. |
| Printer appears as two devices in Device Manager. (CDC) | The RS232 applications uses for the printer a composite device with two interfaces: DFU run time and CDC.<br>The CDC interface does not require installation. Cancel any new hardware wizard. |
| Error when converting from SPC protocol to DFU. | A first-time download may time out depending on the time taken to install the drivers. Close the application and restart the printer. |
| Printer fails to restart while loading BSP SPC bundle | When downloading the BSP SPC firmware, the device will not automatically reset. Power cycle the printer. The printer will restart in BSP mode. |

# 9 Functional Testing with CommWrangler™

## Introduction

To perform functional testing on the printer, use the CommWrangler™ tool to view sensor status and print test tickets, independently or while the printer receives power from the game.

**Note:**

CommWrangler, other software tools, and drivers are available for download from the FutureLogic Exchange secured site. To request an account, contact your local FutureLogic Technical Support Office or email: webaccess@futurelogicinc.com.

## Connection and Setup

There are two connection options:

- **Option 1: USB.** Most printer firmware versions include the USB connection of the printer to the PC or laptop. With this connection, the printer can remain in the gaming machine. Only CDC printers support the USB CDC connection. See the section that follows.
- **Option 2: Serial.** RS232 (14-pin Interface Cable) printer versions connect to a PC or laptop in the same way as the RS232 versions of the GEN2 Universal™, GEN2™ and GEN1 printers. See page 30.

### Option 1: USB CDC Connection (Install a Virtual COM Port)

The required USB CDC drivers are available from your local FutureLogic Technical Support office.

1. Connect the printer to the PC or laptop using the cable USB connector.

**Figure 9-1 Printer and Laptop Connection**

2. Power-on the printer.

3. *(For first-time use only)* The Windows Device Manager shows the printer when connected for the first time as unrecognized devices:
   - **FL GEN3 USB PRINTER**: Use as a virtual COM port.
   - **FLI-CDC-DFU 1.1.v**: Use for Device Firmware Upgrade.

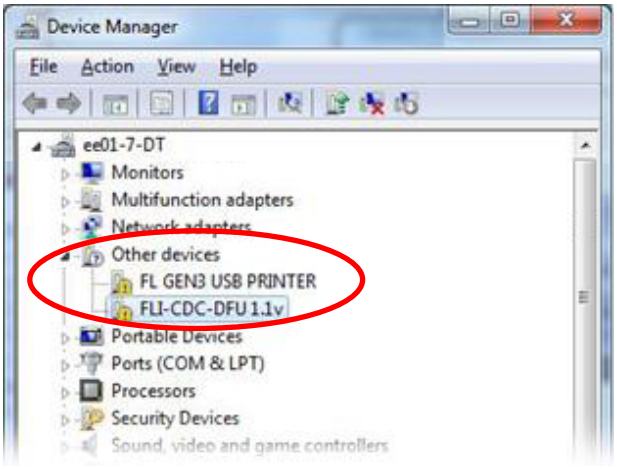



**Figure 9-2 Device Manager – Other Devices**

4. Right-click **FL GEN3 USB PRINTER**; use the CDC driver package to install manually the virtual COM port.

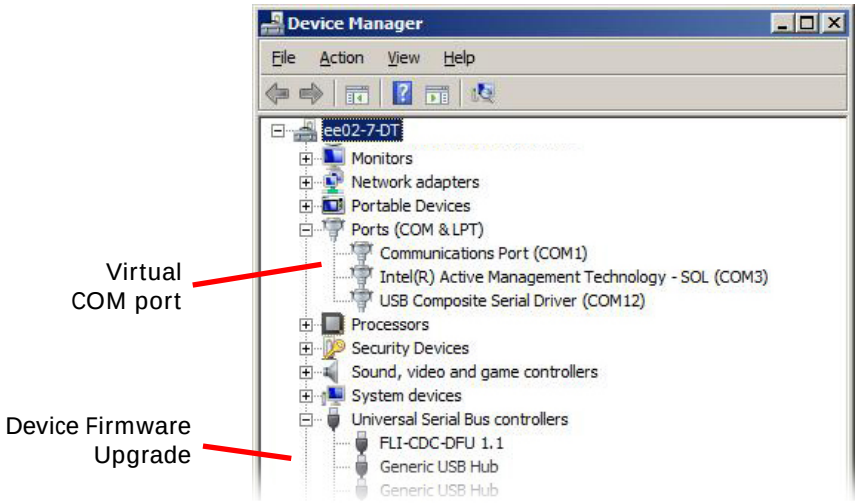



**Figure 9-3 Device Manager**

5. *(Optional)* Install the DFU Device Firmware Upgrade drivers. See page 22 for details.

   The printer is now ready for use via its Virtual Communication Port. Note the COM port number.

## Option 2: Serial Connection

To connect the printer and a PC or laptop using a serial connection, you need the following:

| Item (FL Part Number) | Description |
|---|---|
| RS232 Evaluation Cable (P/N 150-00013-100) | This cable powers the printer from a 24Vdc source and provides a connection to a standard DB9 RS232 COM port. |
| 24Vdc Power Supply (P/N 350-00199-100) | Recommended |

1. Disconnect and remove the printer from the machine.
2. Connect the 14-pin connector to the printer Interface Cable.
3. Connect the DB9 connector to the PC COM port.
4. Connect the power connector to a 24Vdc power source.

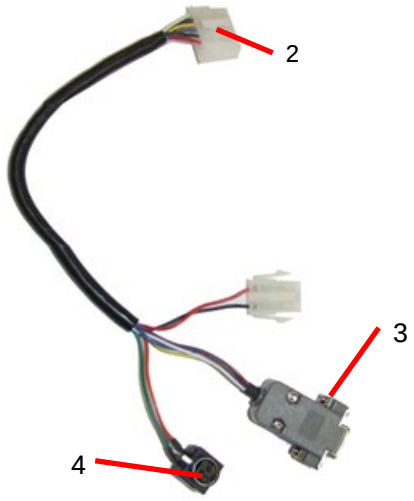



**Figure 9-4 RS232 Evaluation Cable Connections**

# CommWrangler

## Procedure: Initialize Communications

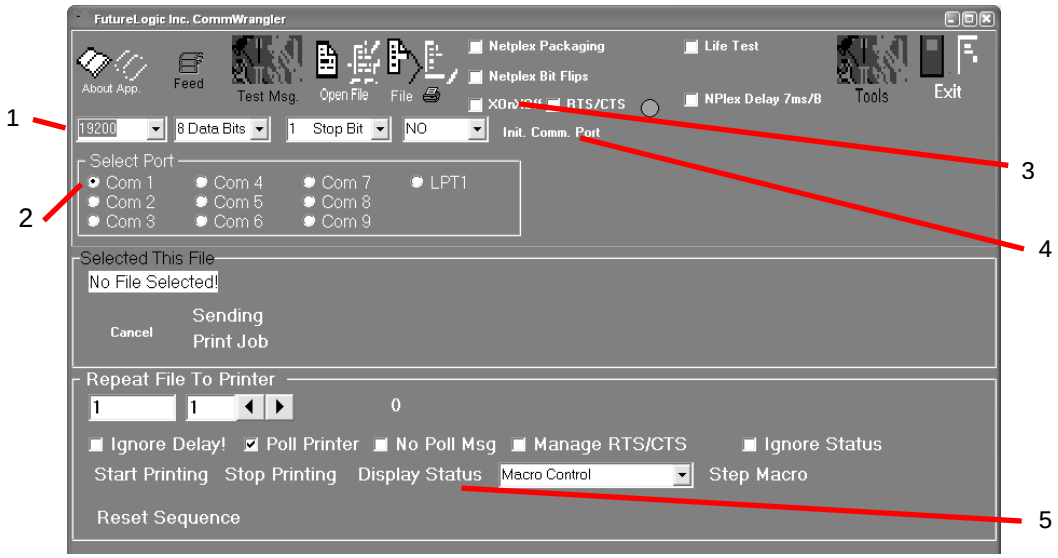



**Figure 9-5 CommWrangler Main Window**

1. Select the printer **baud rate**.
2. Select the **COM Port**.
3. Select **Xon/Xoff**.
4. Click **Init Comm Port**.
5. Click **Display Status.**
   The Printer Status window displays.

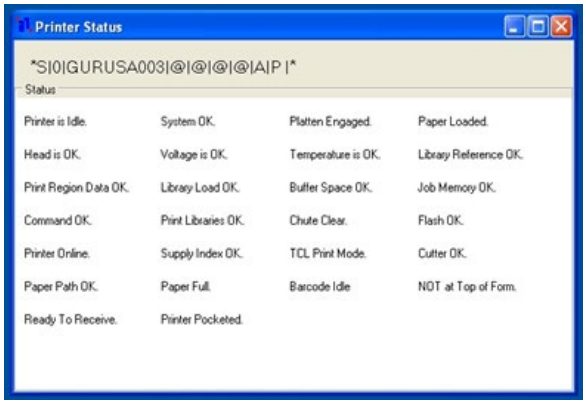



**Figure 9-6 Printer Status Window**

## Procedure: Print Test Tickets

The installation process copies a set of test tickets into the CommWrangler program folder.


**Figure 9-7 CommWrangler – Print Test Tickets**

1. Click **Open File**.
   The Select File Type area displays.
2. Select **Normal**.
   a. From the window that displays, browse to the CommWrangler program folder.
   b. Select one of the .TKT ticket files (for example, ticket0.tkt).
3. Click **File**.
   The printer prints a standard TITO ticket.
4. For test bench soak-testing, enter the following in the **Repeat File To Printer** fields:
   - First text box: enter the number of times to repeat the print on the left.
   - Second text box: enter the time in seconds to pause between prints on the right.
5. Click **Start Printing** to begin the sequence.

# 10 Troubleshooting

## Introduction

This chapter describes solutions to the most common ticket printing problems.

Use the LED Status Lights to determine the printer status.

| Condition | Ready (Green) | Paper (Yellow) | Open (Orange) | Fault (Red) |
|---|---|---|---|---|
| No Power | | | | |
| Ready | ON *Flashing* | | | |
| No Ticket Detected | | ON | | |
| Paper Jam Detected | ON | | | ON *Flashing* |
| Printer Lid Open | | | ON | |
| Firmware Problem (Flushed) | ON | ON | ON | ON |
| Hardware Fault Detected | | | | ON |

## Printer Troubleshooting

| Condition | Remedy |
|---|---|
| No Power / No LEDs lit. | Check the power from the host. The printer requires 24Vdc.<br>Press the FEED button, does the ticket advance? Check the LED module. See page 19 for details how to exchange the LED module. |
| No Ticket Detected | Remove and reload the tickets (see page 4). The printer must detect the white-color tickets and black index mark.<br>Check the Index Mark Sensor (see page 7 for details). |
| Paper Jam Detected | Perform the ticket jam procedures on page 6. |
| Printer Lid Open | Close the Lid. |
| Firmware Problem (Flushed) | |
| Hardware Fault Detected | |

## Printer Errors

While the following table lists the error conditions, most printer errors are a result of the printer running out of paper or the operator opening the Lid.

| Error | Description | Remedy |
|---|---|---|
| Paper Out | Results when the printer does not detect paper. | Load more paper. |
| Print Head | Results when the printer senses an internal error due to connectivity or interface problem with the thermal Print Head. This can be a result of a cable problem between the main controller board and the printer engine. | The printer will remain in this error state until a power cycle or the unit is reset.<br>If the problem persists, the printer will require service. |
| Temperature | Results when the printer is operating outside of its allowable temperature range.<br>If the printer is operating in an environment where the ambient temperature is roughly room temperature, this error would most likely be the result of a hardware problem. | The printer will automatically resume operation after the detected head temperature falls within range. |
| Voltage | Results if the printer detects a power supply voltage (+21VDC to +25VDC) outside of range.<br>This error could be the result of a poor cable connection. | The printer will automatically resume operation after the power supply is detected within range. |
| Missing Black Index Mark | Results if the selected paper type is indexed paper and while feeding paper or printing a black mark is not seen within approximately 10” of the paper.<br>This error alerts to the presence of the wrong kind of paper in the printer or that the paper was inserted in the wrong direction (so the black mark index is rotated 180 degrees). | Raise the head release lever (presumably to change the paper). |
| Paper Jam | Results when the printer detects an error in the paper path for presenting the ticket. | Open the printer head and inspect for a jammed ticket. |

# Appendix A Technical Specifications

## Introduction

This appendix identifies the general specifications of the printer.

## Printer Specifications

| General | |
|---|---|
| Dimensions (WxDxH) | 110mm x 304.8mm x 64.3mm |
| Weight | 2.7 lbs |
| Power Requirements | These units are to be supplied by Listed or IEC Certified Power Supplies, rated 24 VDC, minimum 3.2 A, marked “Class 2” or “LPS”. |
| Sensors | Printer Tray, Lid Open, Ticket Taken, Ticket Low, Paper Out/Index Mark (Includes a Host Controllable Buzzer) |
| Printing Speed | 203mm/Second (8”/Second) |
| Print and Present | 0.95 Second |
| Printing Width | 62mm (true near-edge printing) |
| Storage | 450 Tickets |
| Ticket Tray Extenders | Interchangeable, 900 Ticket Tray |
| Resolution | 8 dots/mm (203 dpi) |
| Firmware | Application in Memory is Reprogrammable (via Flash BIOS) |
| Self Test | Yes |
| Page Mode | Full Page Mode Printing (Simultaneous 4 Orientation Printing: 0°, 90°, 180°, 270°)<br>Line and Box Draw; Bitmap Graphics; Printer Resident (Stored in Flash) Graphics |
| Paper Loading | Manual |
| Paper Feed | Automatic |
| Media | Direct Thermal, Top Coated, Fanfolded and Perforted |
| Paper Specification | 66mm W x 156mm L<br>4.5 mil, 1 Color/2 Colors |
| Bezel Control | Two High Current Ticket Printing Bezel Control Ports |
| User Interface | 4 LED Indicators, Paper Advance Button |
| Update Port | Allows for Printer Upgrades via USB Download Port |
| Hot Swappable | 100% |

| | |
|---|---|
| **Printing Resources** | |
| Template Capacity | 4Mb; Stores hundreds of clip art objects & thousands of graphic templates |
| Color Printing | Red on Black and Blue on Black are available. Other colors can be supported as the print media becomes available. Color selection is controlled through the TCL™ language. |
| **Characteristics** | |
| Printer Languages | TCL Printer Language (Page Description Language)<br>Subset of ESCP2 |
| Fonts | 8 (2.5 cpi, 3.3 cpi, 4.0 cpi, 5.5 cpi, 5.6 cpi, 7.3 cpi, 10.1 cpi, 20.5 cpi) |
| Font Scalability | May Be Independently Scaled from 1x – 7x in Both Height and Width |
| Bar codes | PDF-417, Interleaved 2 or 5, Code 39, UPC-A, UPC-E, UPC-E+2, UPC-E+5, Codabar, EAN-13, EAN-8, Code 128, MSI |
| Memory | 4Mb with 8Mb RAM |
| **Interface** | |
| Communications | USB 2.0 game interface (full speed of 12Mbps) with separate<br>USB Download Port, Future GSA Compliant,<br>Compliant with GSA GDS, IGT USB and traditional communication protocols RS232C and Netplex |
| **Environmental** | |
| Operating temperature | 0°C to 50°C |
| Storage temperature | -20°C to 85°C |
| Operating humidity | 5 to 95% RH (Non-Condensing) |
| **Reliability** | |
| Maintenance | Annual Print Cleaning Require |
| Print Head Life | 100km Min. (656,000 Tickets Based on US Currency Size) |
| Certifications | This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. |

# Ticket/Paper Specifications

Use only approved paper in the printer. Use of improper paper may cause damage to the device and will void the printer's warranty.

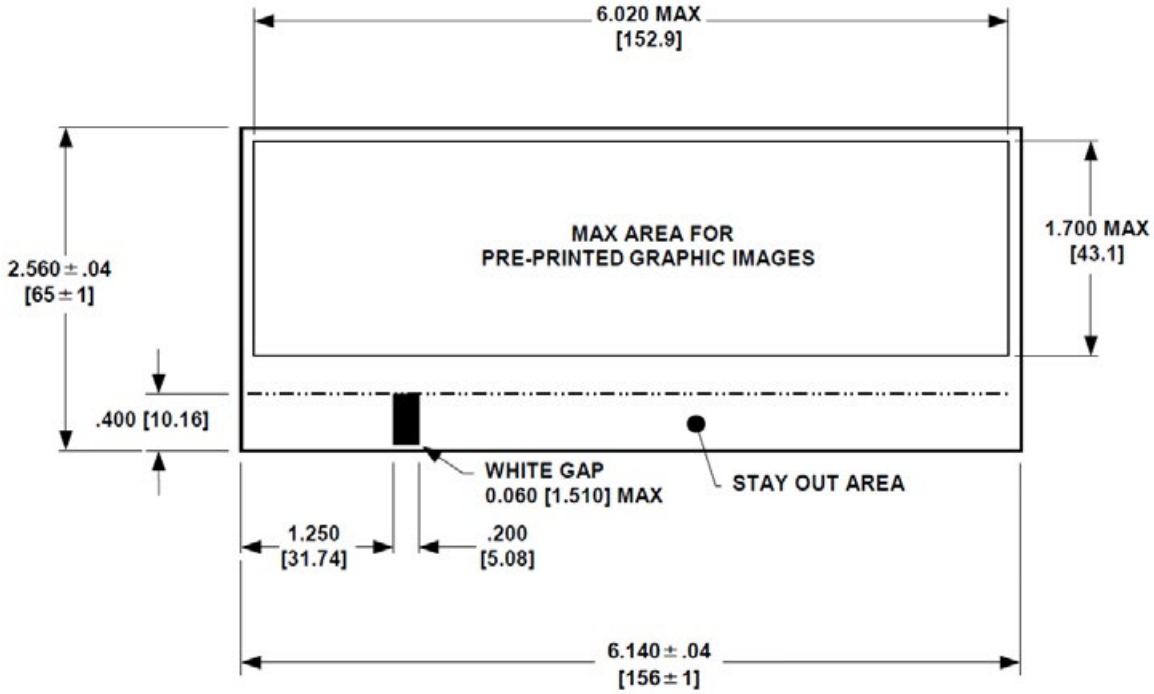
Paper dimensions: 65mm x 156mm (width dimension ±1mm

Nominal paper thickness: 4.5mil

Paper width: +0mm, –1mm.

450 Ticket Stack: 450STK, 65X156, 5M, Fanfold

900 Ticket Stack: 900STK, 65X156, 5M, Fanfold




For authorized ticket converters and complete paper specifications, contact your sales representative or visit our Web site: www.futurelogic-inc.com.

# Appendix B Part Numbers

## Introduction

This appendix provides the part number and description of the GEN3 Evolution printer, accessories, and spare parts.

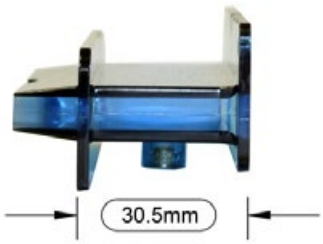
## Printer

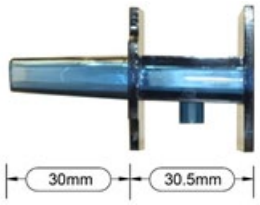
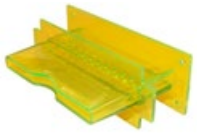
| P/N | Description | |
|---|---|---|
| 220-00093-1XX | GEN3 Evolution Printer (RoHS)<br>USB, RS232, Future GSA Compliant |  |

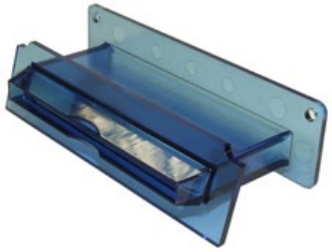
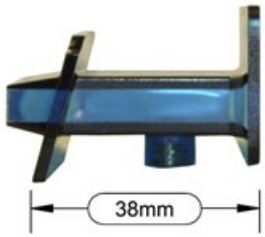
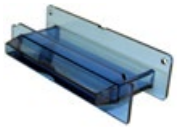
## Evaluation Kit

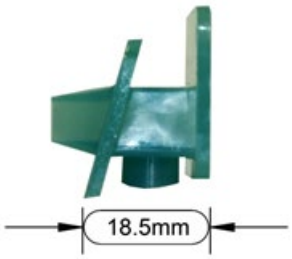
| P/N | Description | |
|---|---|---|
| 220-00114 | Evaluation Kit, GEN3 Evolution (RoHS)<br>- GEN3 Evolution Printer<br>- Standard Bezel<br>- 24Vdc power supply<br>- Eval Cable, RS232<br>- Tickets |  |

# Accessories: Bezels

| ***Straight Flange Bezel*** | | |
|---|---|---|
| |  |  |
| **P/N** | **Description** | |
| 130-00019-100 | Bezel, Straight Flange, YELLOW |  |
| 130-00019-101 | Bezel, Straight Flange, BLUE |  |
| 100-00224-100 | Bezel Kit, YELLOW<br>- Straight Flange<br>- LED PCB |  |
| 100-00224-101 | Bezel Kit, BLUE<br>- Straight Flange<br>- LED PCB |  |

| ***Straight Flange Bezel, Long Nose*** | | |
|---|---|---|
| |  |  |
| **P/N** | **Description** | |
| 130-00023-100 | Bezel, Straight Flange, Long Nose, YELLOW |  |
| 130-00023-101 | Bezel, Straight Flange, Long Nose, BLUE |  |
| 100-00199-100 | Bezel Kit, YELLOW<br>- Straight Flange, Long Nose<br>- LED PCB |  |
| 100-00199-101 | Bezel Kit, BLUE<br>- Straight Flange, Long Nose<br>- LED PCB |  |

| ***Angled Flange (Slant-Top) Bezel*** | | |
|---|---|---|
| |  |  |
| **P/N** | **Description** | |
| 130-00021-100 | Bezel, Angled Flange, YELLOW |  |
| 130-00021-102 | Bezel, Angled Flange, BLUE |  |
| 100-00214-100 | Bezel Kit, YELLOW<br>- Angled Flange<br>- LED PCB |  |
| 100-00214-102 | Bezel Kit, BLUE<br>- Angled Flange<br>- LED PCB |  |

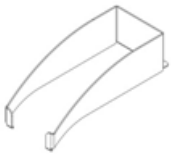
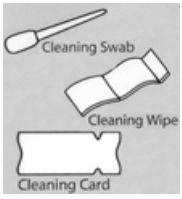
| ***Short, Angled-Flange (Slant-Top) Bezel*** | | |
|---|---|---|
| | |   |
| **P/N** | **Description** | |
| 130-00009-100 | Short, Angled-Flange, YELLOW |  |
| 130-0009-101 | Short, Angled-Flange, AQUA BLUE |  |
| 130-00009-102 | Short, Angled-Flange, DARK BLUE |  |

| ***Other Bezels*** | | |
|---|---|---|
| **P/N** | **Description** | |
| 130-00015-100 | Bezel Assembly, Slant Top |   |
| 130-00017-100 | Bezel Assembly, Top-Box |   |

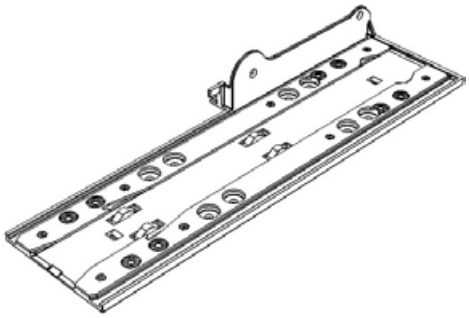
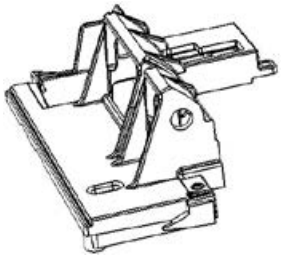
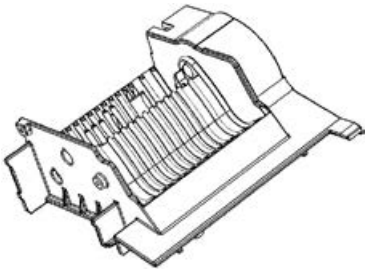
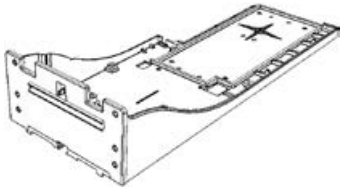
## Accessories: LED PCBs

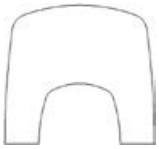
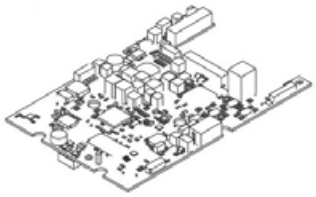
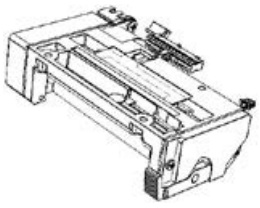
| P/N | Description | |
|---|---|---|
| 140-00096-100 | Bezel PCB, Yellow |  |
| 140-00096-101 | Bezel PCB, Blue |  |

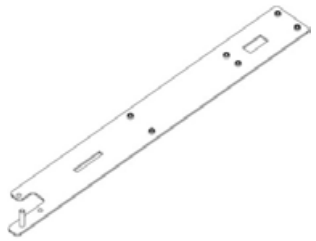
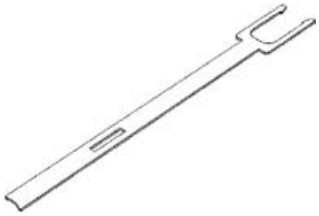
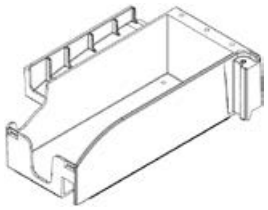
## Accessories: Other

| P/N | Description | |
|---|---|---|
| 320-00394-100 | Ticket Extension Tray, 900 tickets |  |
| 350-00199-100 | Power Supply RoHS, 24Vdc |  |
| 150-00013-100 | RS232 Adapter Cable |  |
| 350-00292-101 | Cleaning Kit, 10 Pack |   |

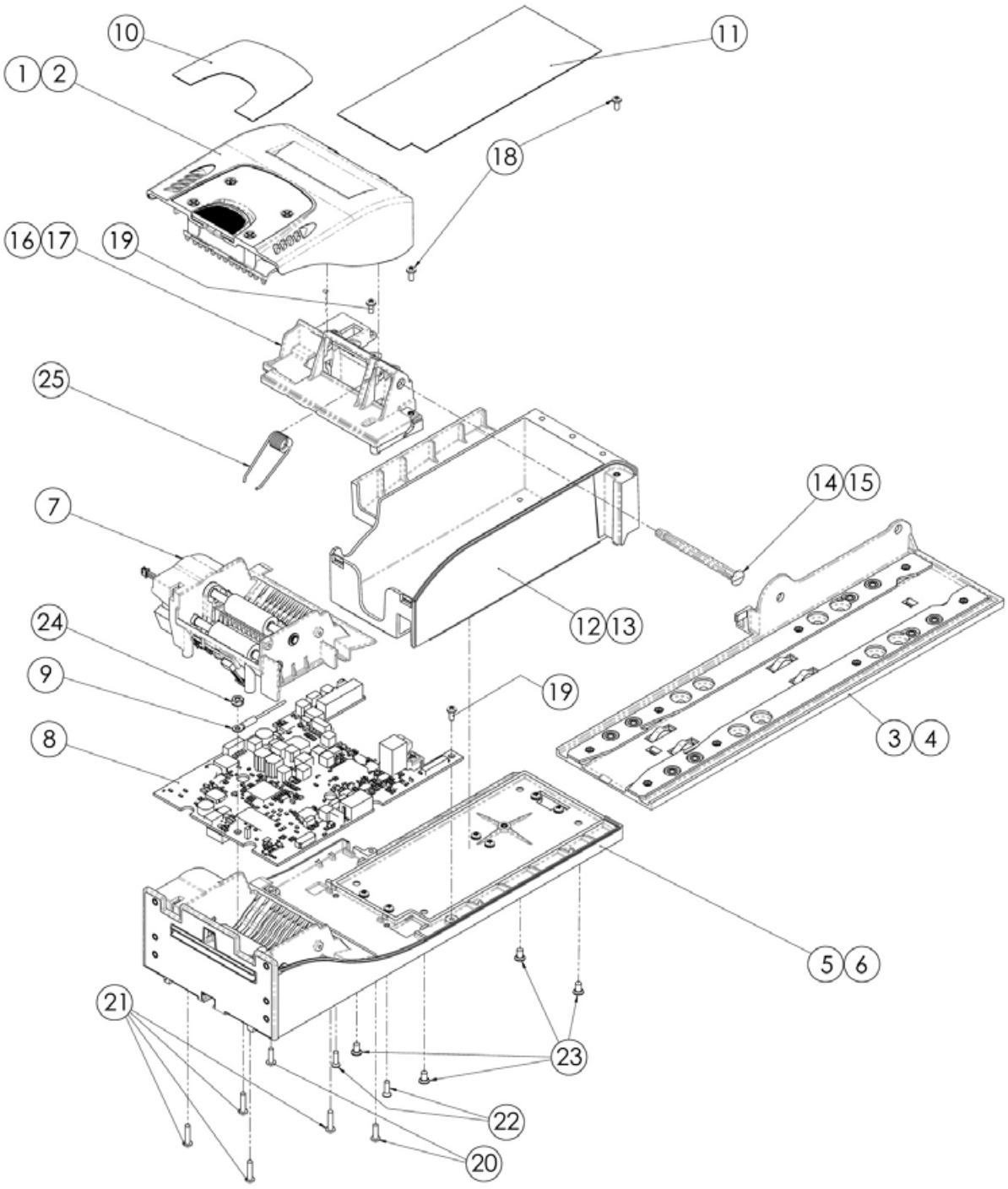
## Parts

| Spares – P/N | Description | |
|---|---|---|
| 100-00333-1XX | Assy, Base, Slide Bracket RoHS |  |
| 370-00373-1XX | Base Hinge Pin, RoHS |  |
| 370-00376-1XX | Base Hinge, RoHS |  |
| 370-00384-1XX | Bottom Chute RoHS |  |
| 350-00268-100 | Cable, Main, RS232 RoHS |  |
| 370-00370-101 | Chassis, Black Base, Main |  |

| Spares – P/N | Description | |
|---|---|---|
| 370-00377-101 | Latch, Lid, Black |  |
| 370-00381-101 | Lid, Gold RoHS |  |
| 362-00186-1XX | Lid, Label RoHS |  |
| 100-00339-100 | Memory/LED Module |  |
| 140-00183-1XX | PCBA, Main |  |
| 140-00219-1XX | PCBA, Paper Taken Sensor |  |
| 400-00020-101 | Print Mech Assy, RoHS |  |

| Spares – P/N | Description | |
|---|---|---|
| 320-00365-100 | Slide, Blade, Internal RoHS |  |
| 320-00363-100 | Slide, Release RoHS |  |
| 370-00371-101 | Tray, Paper RoHS, up to 450 tickets |  |

# Appendix C Exploded View



| Item | P/N | Description | 100-00331-100 Qty | 100-00331-101 Qty |
|---|---|---|---|---|
| 1 | 100-00330-100 | ASSY,LID,GEN3 | 1 | - |
| 2 | 100-00330-101 | ASSY,LID,GEN3 | - | 1 |
| 3 | 100-00333-100 | ASSY,BRKT,BASE,SLIDE | 1 | - |
| 4 | 100-00333-101 | ASSY,BRKT,BASE,SLIDE | - | 1 |
| 5 | 100-00334-100 | SUBASSY,CHASSIS,BASE | 1 | - |
| 6 | 100-00334-101 | SUBASSY,CHASSIS,BASE | - | 1 |
| 7 | 100-00337-100 | ASSY, PRESENTER LOWER, GEN3 | 1 | 1 |
| 8 | 140-00183-XXX | PWB-MAIN-GEN3 | 1 | 1 |
| 9 | 150-00204-100 | CABLE ASSY, GND, 3 POINT | 1 | 1 |
| 10 | 362-00186-1XX | DECAL-LID-GEN3 | 1 | 1 |
| 11 | 362-00187-1XX | LBL-TRAY-GEN3 | 1 | 1 |
| 12 | 370-00371-100 | PAPER TRAY (TICKET TRAY) | 1 | - |
| 13 | 370-00371-101 | PAPER TRAY (TICKET TRAY) | - | 1 |
| 14 | 370-00373-100 | PIN,HINGE | 1 | - |
| 15 | 370-00373-101 | PIN,HINGE | - | 1 |
| 16 | 370-00376-100 | HINGE,BASE | 1 | - |
| 17 | 370-00376-101 | HINGE,BASE | - | 1 |
| 18 | 473-00031-1XX | SCR,MACH,PNHPH,4-40x1/4 | 2 | 2 |
| 19 | 473-00078-1XX | SCR,PNHPH,PLASTITE 48-2,#4x1/4 | 2 | 2 |
| 20 | 473-00234-1XX | SCR,PNHPH,PLASTITE 48-2,#4x3/8 | 2 | 2 |
| 21 | 473-00437-1XX | SCR,PNHPH,PLASTITE 48-2,#4x1/2 | 4 | 4 |
| 22 | 473-00454-1XX | SCR,FLHPH,PLASTITE 48-2,#4X3/8 | 2 | 2 |
| 23 | 473-00550-1XX | SCR,PLASTITE,FLHPH#6X1/4 UNDERCUT | 4 | 4 |
| 24 | 476-00043-1XX | NUT,HEX,6-32,SP,KEPS | 1 | 1 |
| 25 | 485-00163-100 | SPR,HINGE,LID,GEN3 | 1 | 1 |

# Index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