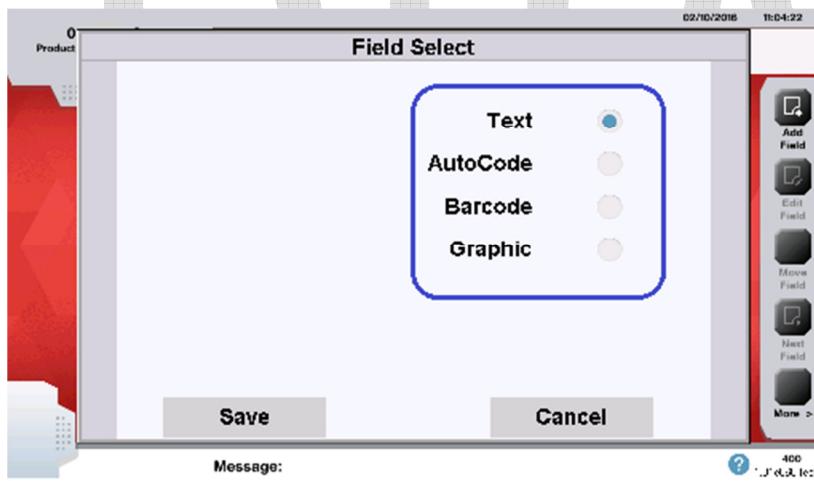


After creating the Message Name, the field selection screen will automatically open (as shown below). Select the type of field you want (Text, Autocode, Barcode, or Graphic) to use and press Save.

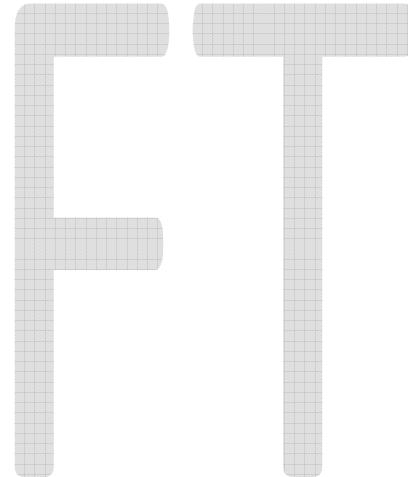
(\*\* add general description of message creation.)



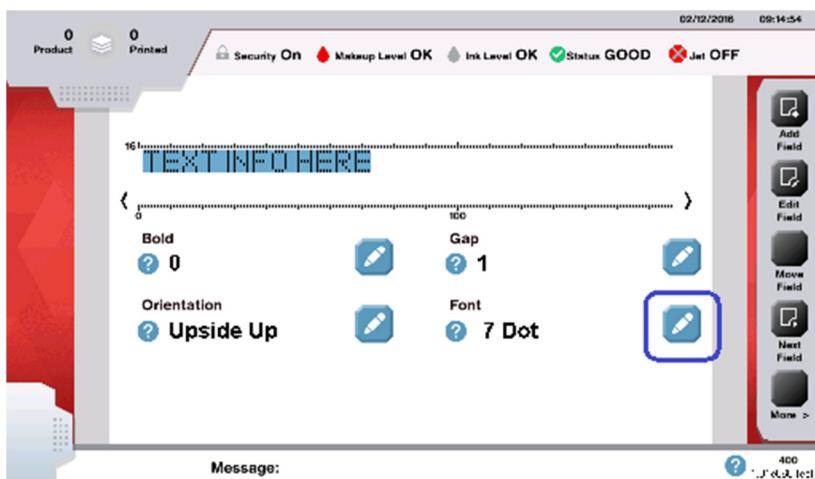
Create the content of that field using the keyboard and then press Save.



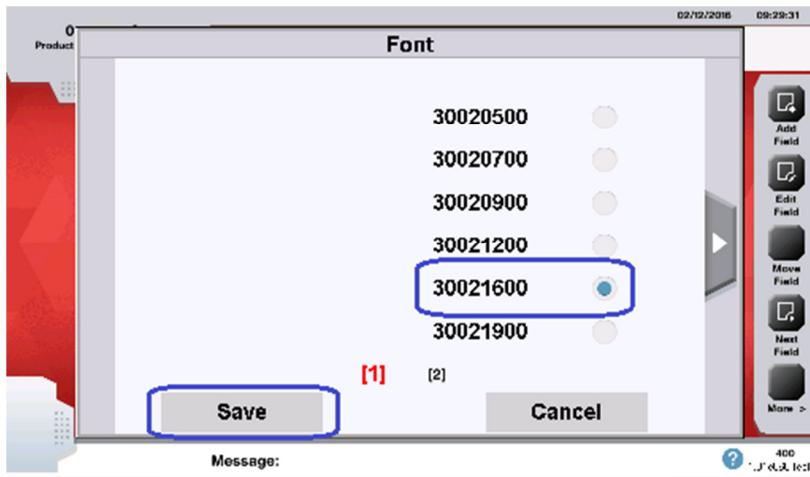
The Field will be place in the Message.



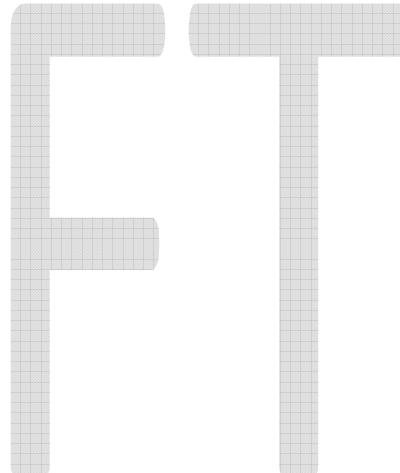
Next select the font size for this field by pressing the Font Edit button.

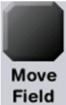


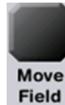
Select the Font size from the list and press [Save] button. Only the available fonts will be displayed to fit the message pixel size. (Please note, there could be more than 1 page)

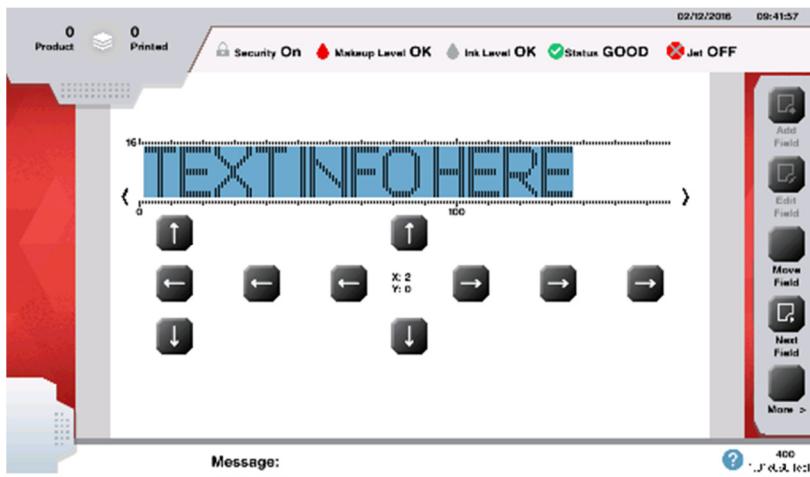


The new Font will be displayed in the WIZYWIG window.



To move the field, press the  button and use the Arrows to move the field. When done, press again to go back.





If additional fields are needed, press the  button to add a new field and follow the previous 3 steps.

When the message is complete, press the  button to save and exit the Message Edit screen.

The new message will now be displayed in the Message List.



To select any message to print, just touch and highlight the message and press .

## Message Fields

### Text Fields

Text fields are non-updating characters. Primarily inputted using the on board keyboard.



## Autocode

Autocodes allow Date, Time, Shift, Counter, User and Printer ID data to be inserted into a message field. These fields automatically update depending upon the selection. Some of these Autocodes can be adjusted forward example: in the case of a date/time to display and print an expiration date.. (See below for more details)

AutoCode	AutoCode Basis
Time	Based on real time setup in System Properties
Date	Based on real date setup in System Properties
Expiration Date	Based on real date and expiration date setup in System Properties and Application Properties
Rollover Date	Based on real date and rollover time setup in System Properties and Application Properties
Expiration Rollover Date	Based on real date, rollover time and expiration date setup in System Properties and Application Properties
Shift	Based on real time and shift time setup in System Properties and Application Properties
Counter	Based on counter setup in Application Properties

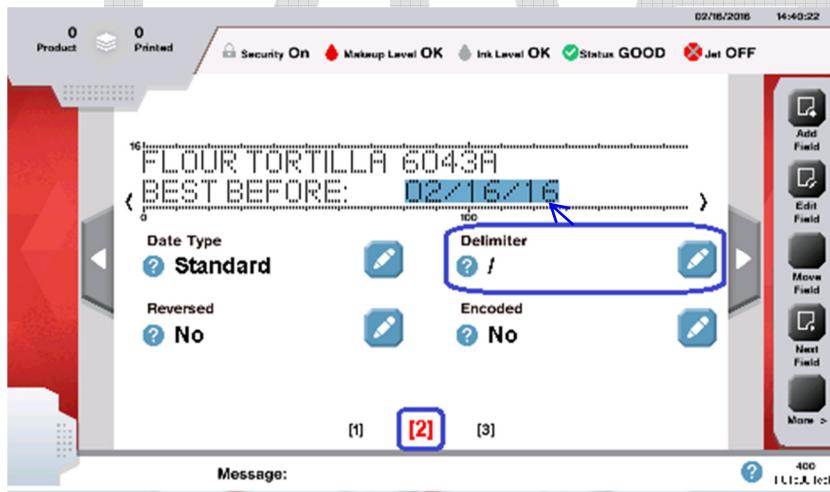


NOTE: Rollover time is an offset of the 12 a.m. calendar day change. If rollover is set to 2 A.M., the calendar day will advance at 2 a.m., not 12 a.m.

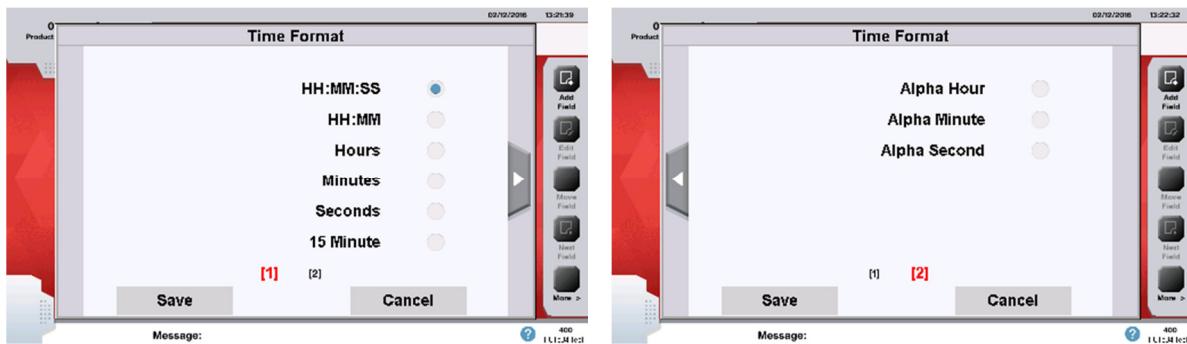
Date: below are the different date options available for selection.



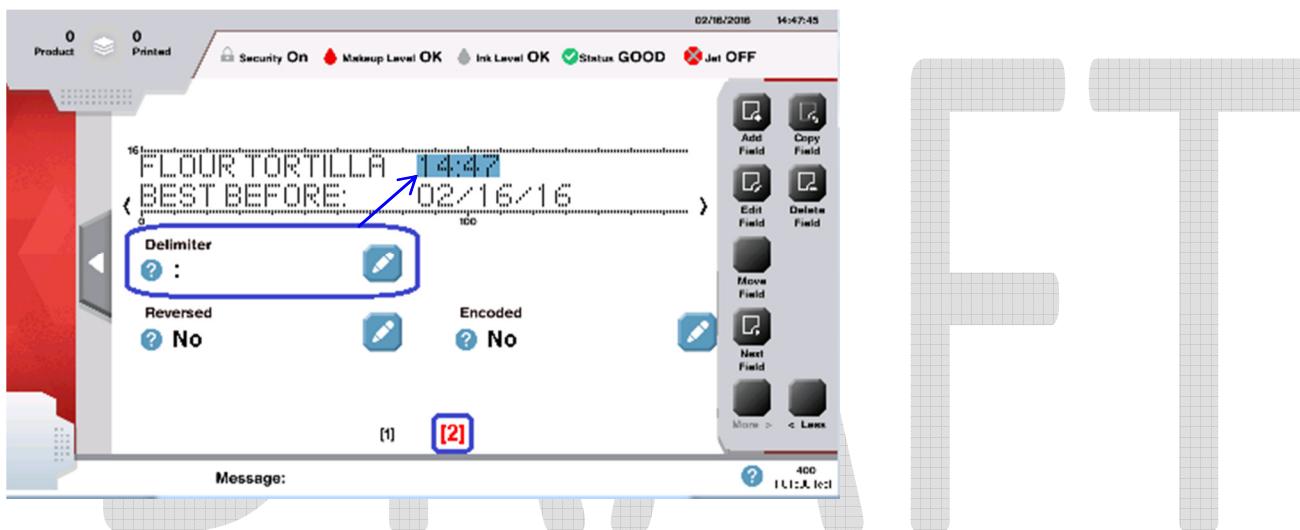
Note: changing the Delimiter is done using the “Field Date Delimiter” property in screen 2. (See below) It is important that the date field is highlighted for the delimiter property to be available.



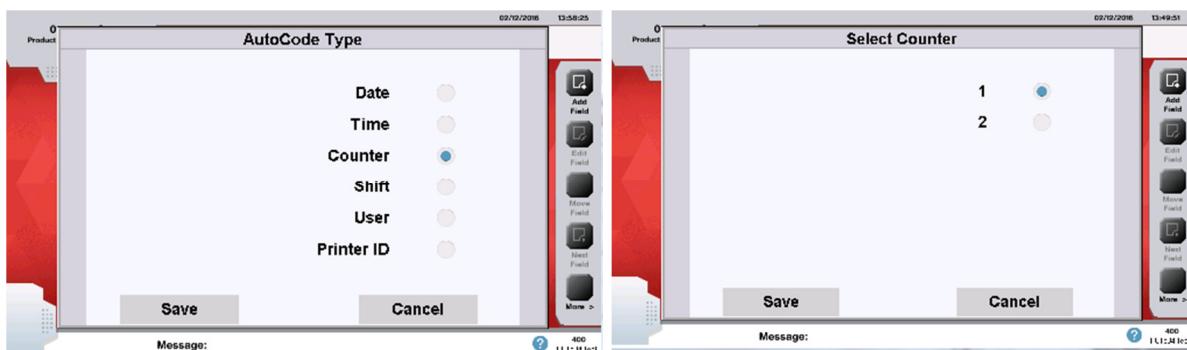
Time: below are the different date options available for selection.



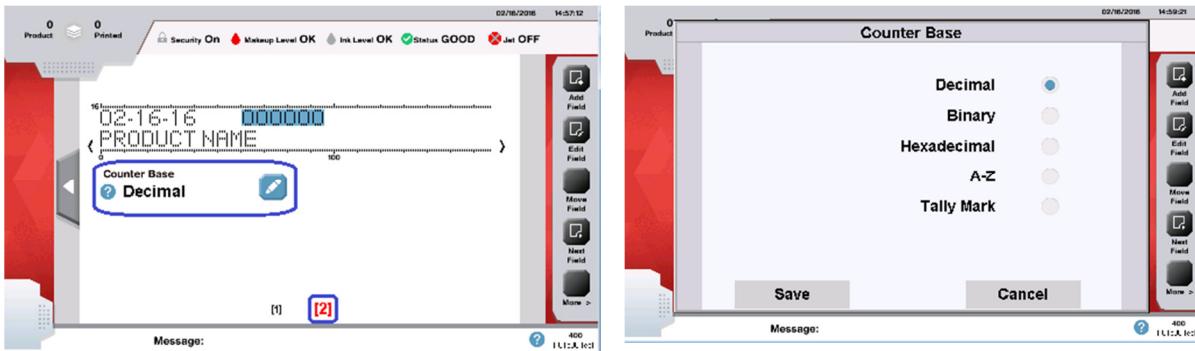
Note: changing the Delimiter is done using the “Field Date Delimiter” property in screen 2. (See below) It is important that the date field is highlighted for the delimiter property to be available.



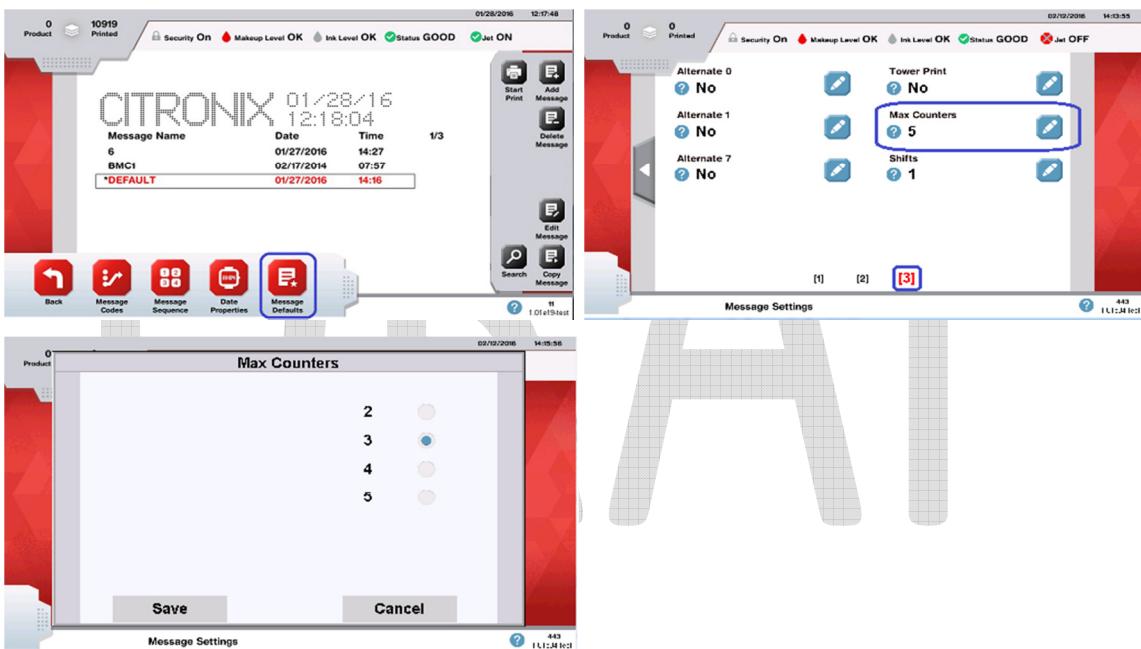
Counter: below shows how to insert a counter field into a message



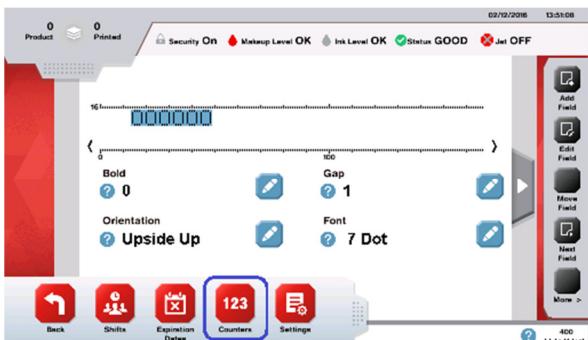
Note: to change the counter properties “Counter Base” use screen 2. (See below) It is important that the date field is highlighted for the delimiter property to be available.



There are up to 5 total counters that can be used in each message. These are setup from the button found in the Icon bar before creating a message.



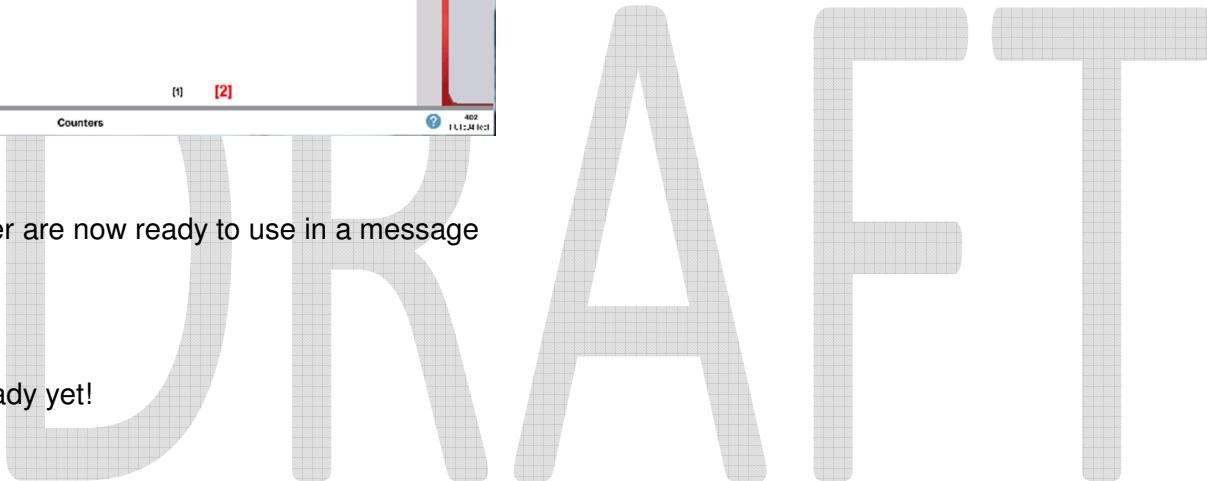
Once the number of counters being used has been selected, the following will show how to edit the counters.



Select to change each counter separately



Counter are now ready to use in a message



User

Not ready yet!

Printer ID

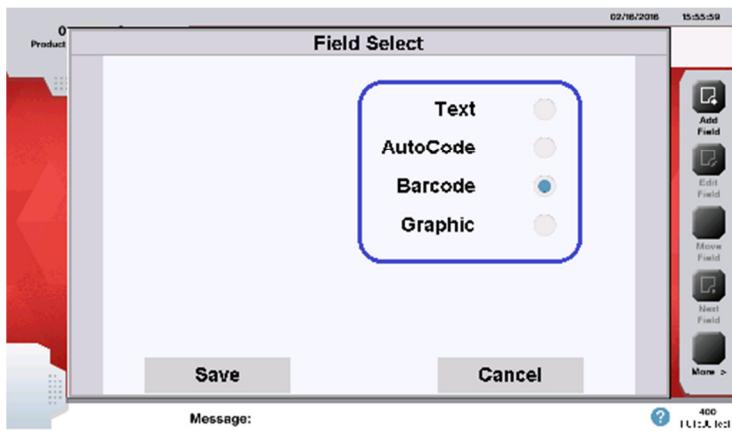
Not ready yet!

## Bar Code

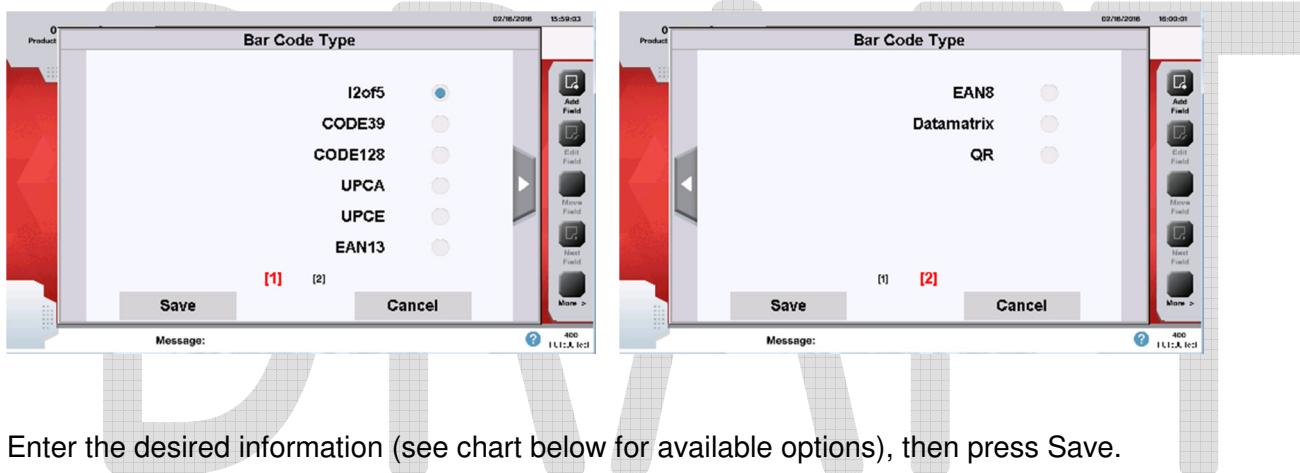
To add a Barcode to a message:



Press **Add Field** button, select Barcode from the list.

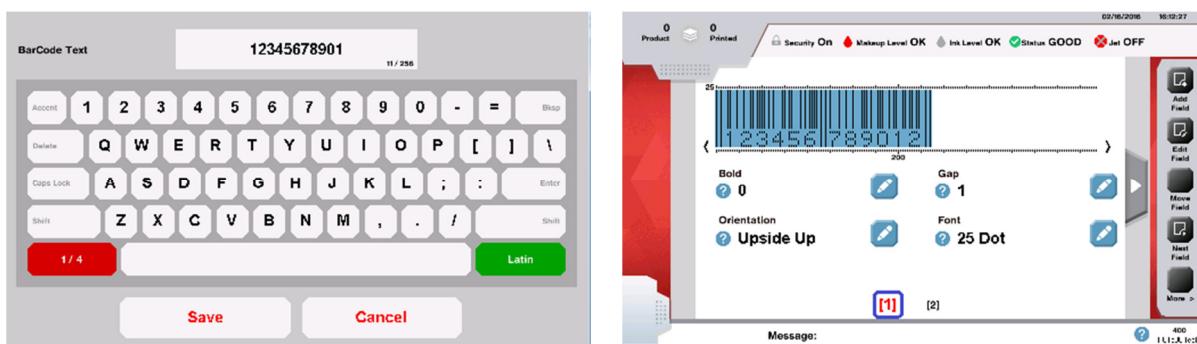


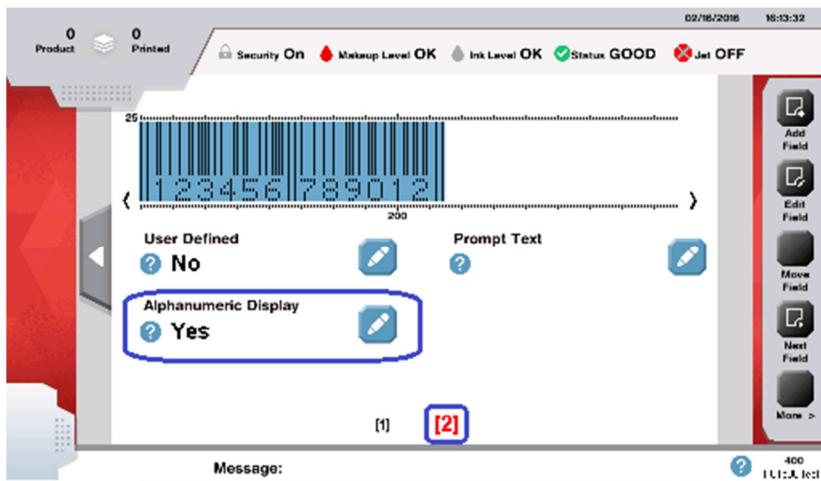
Next select from the list (shown below), the barcode needed then press Save.



Enter the desired information (see chart below for available options), then press Save.

Note: adding Human Readable text below the barcode requires using the "Alphanumeric Display" shown on page 2 to be changed to Yes. (See below)





Description	Input (enter data)	Human Readable Text Available	Check Digit
Interleave 2 of 5	Up to 256 numeric characters or Counter	Yes	Automatic or Disabled
Code 39	Up to 256 alpha-numeric characters or Counter	Yes	Manual – must enter
Code 128	Up to 256 alpha-numeric characters or Counter	Yes	Manual – must enter
UPC A (11)	11 numeric characters	Yes	Automatic
UPC E (6)	6 numeric characters	No	Automatic
EAN13 (12)	12 numeric characters	Yes	Automatic
EAN8 (7)	7 numeric characters	Yes	Automatic
Datamatrix	Variable based on matrix	No	N/A

## Graphic

Not ready yet!

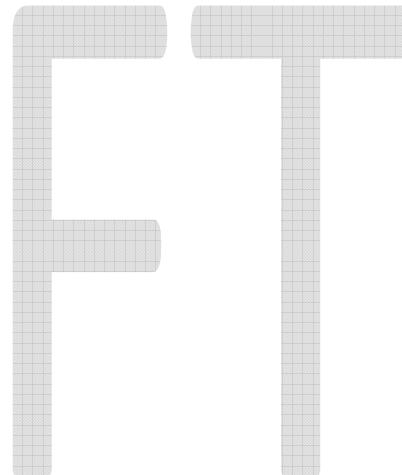
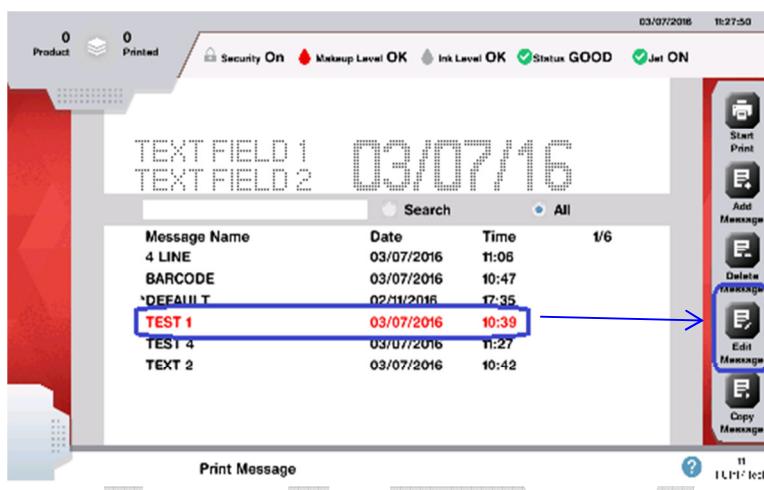
## EDIT MESSAGE

(similar to create message)

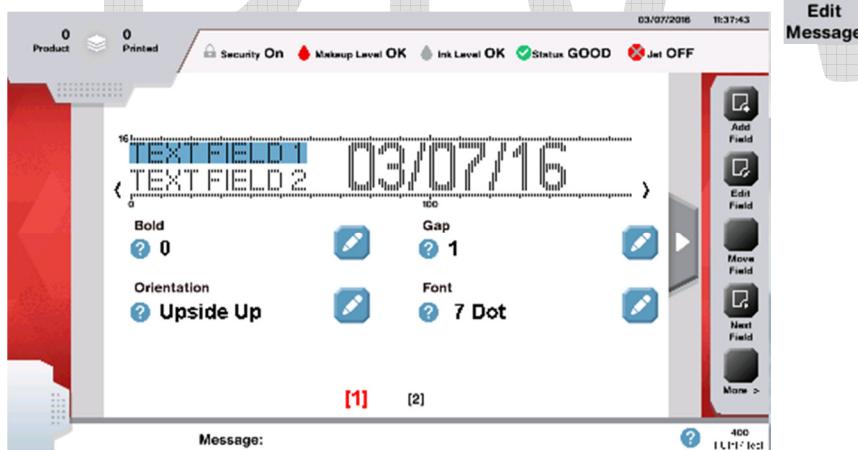
Press the Menu Tab



then press  to bring up the Message List (shown below).

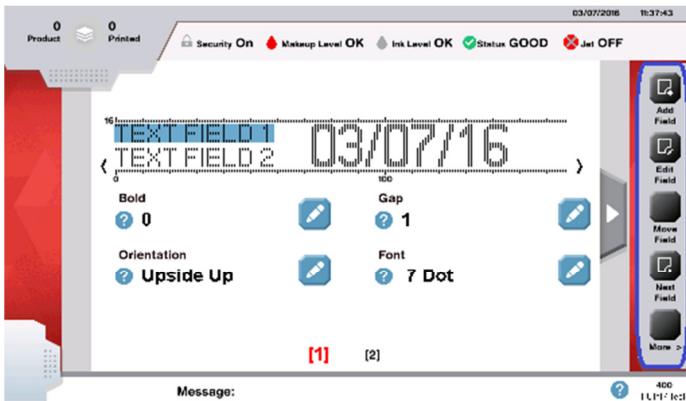


Touch (highlight) the message to be edited, then press the



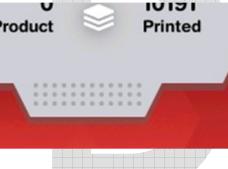
Highlight the field to edit by first pressing the  button.

Using the edit buttons shown on the right side of the screen to select just one particular field, add a new field, move a field, or more.

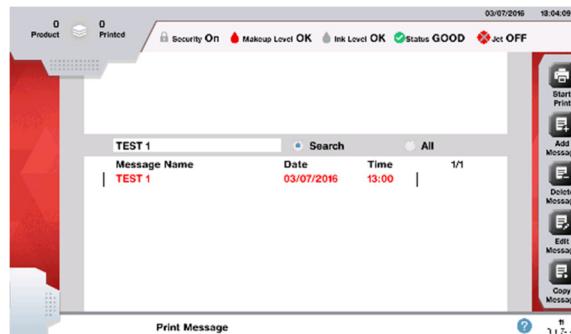
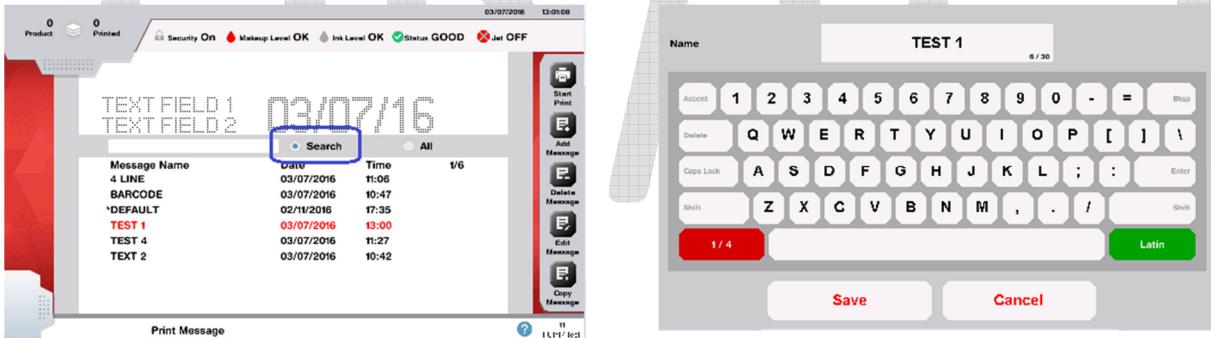


## MESSAGE STORE AND SEARCH

(similar to create message)

Press the Menu Tab  then press  to bring up the Message List (shown below).

Select "Search" then touch the search bar and using the keyboard, type the message name.



Now using the button on the right side of the screen to edit, print, delete, or copy the message.

## REPEAT PRINTING

The current message can be repeated for a specified number of extra prints for one product detect signal.

Note: The number of counted repeats is extra to the initial print.

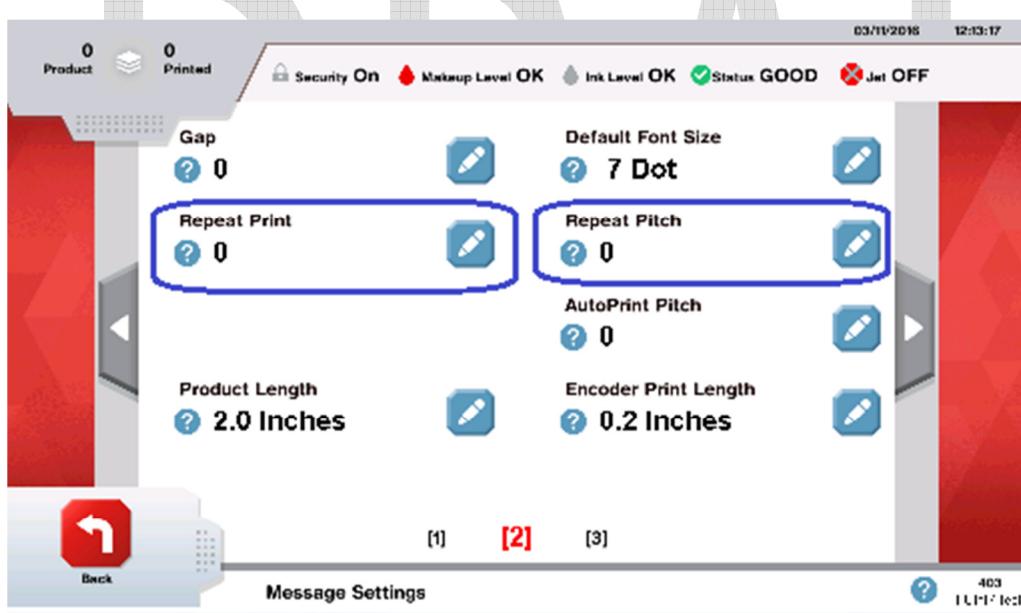
Example: 6 will print 6 extra prints (7 in total).

To setup Repeat Printing:

Create a new message or Edit an existing message as described in the above sections.

While in the Edit menu, press the  button in the Icon bar. Select page 2 **[2]**.

Using the Edit  button, enter the number of repeat prints needed. (Remember total number of prints will be +1 of the number entered). Then Press the Edit Button for Repeat Pitch and enter the number for the spacing between prints.



Repeat Pitch is in Vertical strokes or Raster's, and is from start of one message to the start of the next.

NOTE: if the Repeat Pitch is too small, the printer will lose Phase and fault out. There must be a 50 Raster space between prints.

## BACK-UP PRINTER

Copies of the entire printer configuration, messages, graphics, and system parameters are copied and stored to restore the original printer settings.

The backup file can be used to “CLONE” or “COPY” printers. This is useful when needing to use the same messages in multiple printers in a production environment without having to type/create the same messages multiple times. If the Backup file is used onto a different printer/CPU board, then only the message, graphic and message parameters will be transferred over to the “CLONE” or “COPY”.

This needs to be defined on how we are going to do this...additional instructions can then be added>

Not ready yet

**ADD INK & MAKEUP USING RFID**

Not ready yet



A large, bold, black text "DRAFT" is centered on the page. The letters are filled with a light gray grid pattern. Above the text, there are two small yellow rectangular boxes with black text: "Not ready yet" on the top left and "ADD INK & MAKEUP USING RFID" on the top center. Below the text, there is another small yellow rectangular box with black text: "Not ready yet" on the bottom left.

## PART 4 : DISPLAY MESSAGES AND FAULT FINDING

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DRAFT

## INTRODUCTION

Shown below are some printer states, these are displayed on the Alert/Status bar at the top of the screen.

### Red Alerts

Red alerts are shown by a flashing red LED indicator on the alert switch and a corresponding message displaying in the status/alert bar. They show the presence of faults and stop the printer printing or prevent an unsafe condition occurring.

The jet will shut off (without following the normal sequencing). If the fault condition is still present when acknowledged, the red LED will remain on and the alert bar message will continue to show. If the fault condition has cleared when acknowledged, the red LED will extinguish and the message will be removed.

### Amber Alerts

Amber alerts are used to inform the operator that the printer is in need of attention or that there are message handling errors. If the fault condition is still present when acknowledged, the amber LED will remain on and the alert bar message will show. If the fault condition has cleared, the amber LED will extinguish and the alert bar message will be removed.

### Fault Acknowledgement

Depending on the alert, some messages are automatically cleared when the condition is cleared although they will remain in the fault log list until the user has acknowledged them (if the alert does not disappear from the list when acknowledged, it means the problem still exists). If two or more alerts exist simultaneously, the highest priority alert is displayed. All reports are recorded in the error log, together with times of acknowledgement and repair.

## ALERT / STATUS BAR MESSAGES

\*\* insert screen shot \*\*



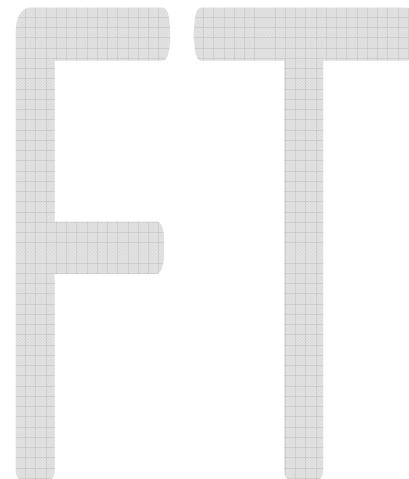
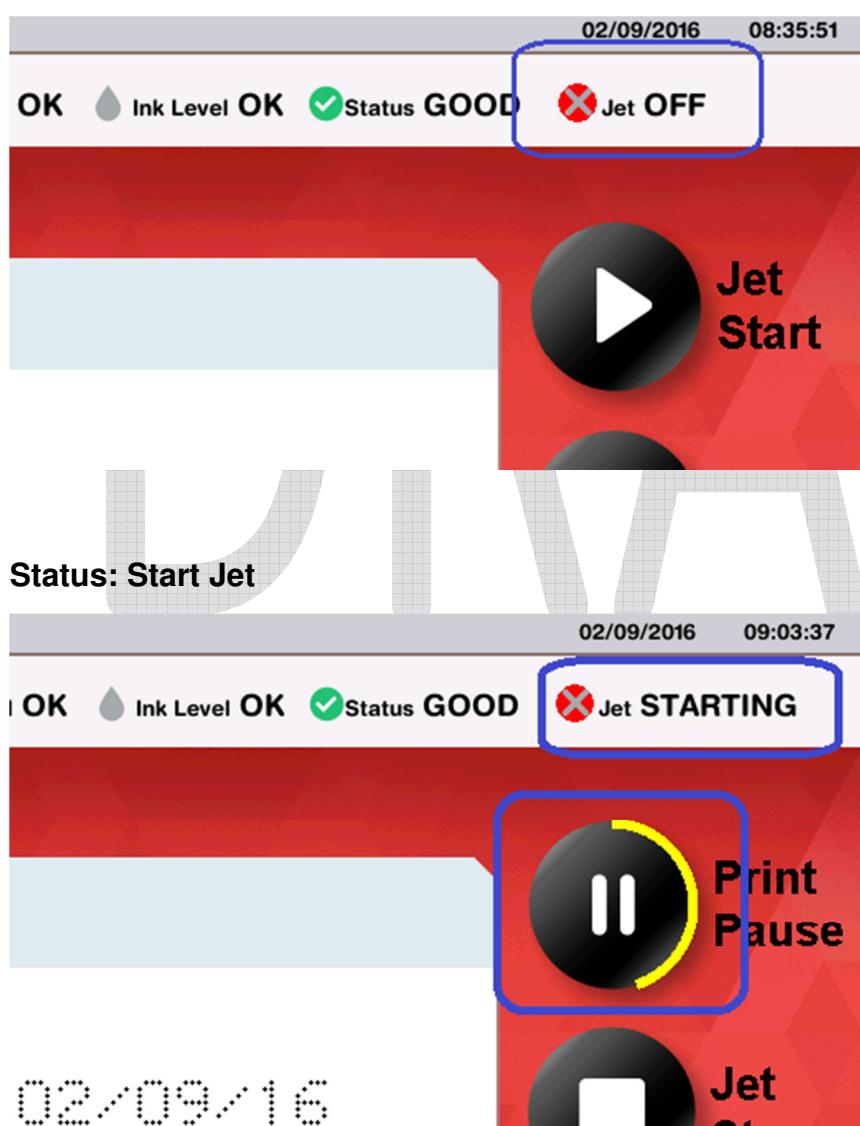
## PRINTER STATES

Shown below are some of the more common printer states, these will be shown in the status/alert bar at the bottom of the screen:

### Status: Jet Calibrating

Need to insert picture

### Status: Jet Off



NOTE: a countdown ring will appear while the system is starting.

## Status: Jet Ready

Need the new screen to write this section.

The printer is getting ready to print. Once this process has completed, the printer should be in the Ready to Print status.

### *Status: Ready to Print*

The printer is ready to print - as long as a message is on-line, the message will print on receiving a product detect signal.

### *Status: Not Ready to Print*

The printer is going from the Ready to Print status to either Jet on only or Standby status.

### *Status: Heating*

The printer is heating the print head to the optimum temperature for the ink.

### *Status: Ink System Standby*

The ink system is pressurised and active, but the jet is off.

### *Wake-up Mode Cycle Running*

The Wake-up software is active. This will run the pump for 3 minutes in every 20 minutes to stir the ink.

## PRINTER FAULTS

The following problems can have the suggested causes and remedies.

Fault / Issue	Possible Cause / Fix
No Power	1. Check the power to the unit. Check the Power Switch. 2. Check the Mains Fuses.
Power on – No Display or Display Rolling	1. Check the display connection to the CPU 2. Press the MENU key; this acts as a display reset. 3. This error could be due to a possible Electro-Static Discharge fault; reset the Printer.
Pressure High Error	1. Check Restrictor(s) for clogs. 2. Check Return Line to Ink Tank for clogs. 3. Check Pressure Transducer (possibly an incorrect reading).

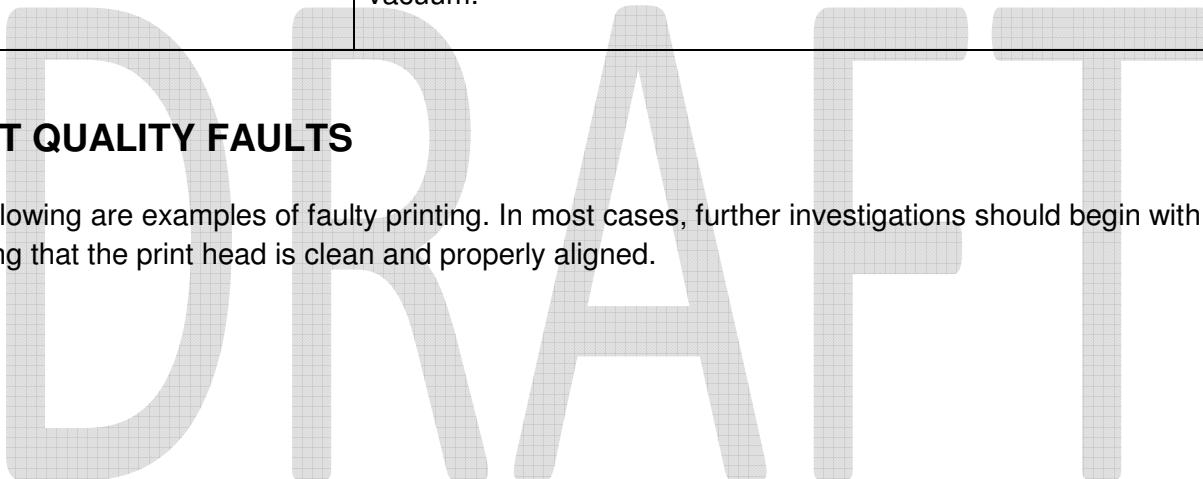
Pump Motor Error	<ol style="list-style-type: none"> <li>1. Check the Fuses.</li> <li>2. Check the Pump Cable.</li> <li>3. Disconnect the Pump Head and perform a pump motor test (described below).</li> <li>4. Check the Pump Head for a seizure (if the motor operates).</li> </ol>
Cooling Fan Error	<ol style="list-style-type: none"> <li>1. Check the Fuses.</li> <li>2. Check the wire cable for damages if the fan is turning.</li> </ol>
Phase Error	<ol style="list-style-type: none"> <li>1. Check for Ink stream breakup.</li> <li>2. Check the distance from the Ink stream to the Phase Detector.</li> <li>3. Ensure the Ink stream is in the center of the Charge Electrode.</li> <li>4. Check the pressure and viscosity (to verify Jet velocity).</li> <li>5. Check the location of the Phase Amplifier to make sure it is NOT too close to the Valve, Valve wires, or other possible source of noise. (See Section 9.2.3 Phase Detector Alignment)</li> <li>6. Check the Phase Amplifier connections.</li> <li>7. Ensure you are not printing too fast (add print delay)</li> </ol>
Charge Error	<ol style="list-style-type: none"> <li>1. Check for Ink stream breakup (see Section 10.8).</li> <li>2. Check the modulation calibration.</li> <li>3. Clean and dry the Phase Detector.</li> <li>4. Check the distance from the Ink stream to the Phase Detector (see Section 10.7).</li> <li>5. Check the charge cable continuity from the Charge Electrode to CPU.</li> <li>6. Check for clogged Filters.</li> <li>7. Check pressure and viscosity (to verify Jet velocity).</li> <li>8. Check the gold charge contact located under the charge electrode block. (shown below without connecting wire)</li> </ol>
No Ink Stream Breakup	<ol style="list-style-type: none"> <li>1. Check the F2 Fuse.</li> <li>2. Check for correct printing. If printing, check strobe LED connections.</li> </ol>

Gutter Error	<ol style="list-style-type: none"> <li>1. Check the alignment of the Jet. Ensure the ink stream is going into the gutter.</li> <li>2. Listen for a steady vacuum.</li> <li>3. Check continuity of the gutter sensor to the CPU.</li> </ol>
Printhead Temperature Error	<ol style="list-style-type: none"> <li>1. Check the Nozzle temperature In the Status Screen.</li> <li>2. Check the temperature probe connections in the top of the Printhead.</li> </ol>
No Deflection Voltage	<ol style="list-style-type: none"> <li>1. Ensure the Printhead cover is closed and the HV symbol is displayed on the main screen.</li> <li>2. Check the low voltage connections from the CPU to the HV module.</li> <li>3. Check the connection of the red HV wire to the HV module.</li> <li>4. Check the continuity from the HV deflection plate to the end of the HV wire at the HV module.</li> </ol>
Electronics Temperature Error	<ol style="list-style-type: none"> <li>1. Ensure the fan is operating.</li> <li>2. Ensure the Air filter is not clogged (replace if needed).</li> </ol>
High Voltage Trip	<ol style="list-style-type: none"> <li>1. Verify the HV Trip set point.</li> <li>2. Ensure the Deflection Plates are clean and dry.</li> <li>3. Watch for Ink buildup due to lack of grounding.</li> <li>4. Check the Jet alignment.</li> </ol>
Modulation Error	<ol style="list-style-type: none"> <li>1. Check for Ink stream breakup.</li> <li>2. Check for any tripped fuses.</li> <li>3. Ensure that Printhead components are clean and dry.</li> <li>4. Check the continuity of the Resonator Probe.</li> <li>5. Verify the modulation calibration.</li> </ol>
High Viscosity Error	<ol style="list-style-type: none"> <li>1. Ensure all the Fill caps are on tight.</li> <li>2. Check the Makeup Add Valve for operation.</li> <li>3. Ensure the Makeup Filter is primed.</li> <li>4. Verify the Viscometer Calibration Constant is the same as stated on the Calibration Label located inside the front door.</li> </ol>
Low Viscosity Error	<ol style="list-style-type: none"> <li>1. Verify the Viscometer Calibration Constant is the same as stated on the Calibration Label located inside the front door.</li> <li>2. Ensure the Makeup Add Valve is not stuck open. This error will also be indicated if the Ink tank is overfull while the Makeup tank is in a low status.</li> </ol>

Viscometer Sensor Error	<ol style="list-style-type: none"><li>1. Verify the Viscometer Calibration Constant is the same as stated on the Calibration Label located inside the front door.</li><li>2. Check the operation of the Viscometer Valve.</li><li>3. Ensure the ball is moving (use a test sensor).</li><li>4. Check the operation of the sensor - observe the LED on the sensor inside the cabinet during operation.</li></ol>
Ink Leaking From Gutter (poor vacuum)	<ol style="list-style-type: none"><li>1. Check the adjustment of the Venturi. (see Section 8.4.7)</li><li>2. Check that the restrictors are the correct type.</li><li>3. Ensure the restrictors are not clogged.</li><li>4. Verify the Jet alignment.</li><li>5. Replace the Gutter Filter. A clogged filter can cause poor vacuum.</li></ol>

## PRINT QUALITY FAULTS

The following are examples of faulty printing. In most cases, further investigations should begin with ensuring that the print head is clean and properly aligned.



## PART 5 : REFERENCE

### CONTENTS

Page

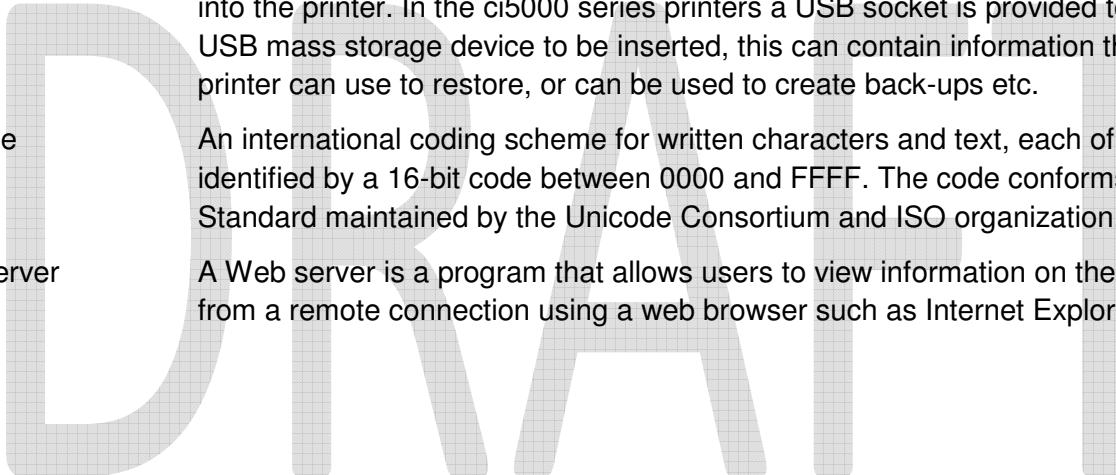
GLOSSARY OF TERMS .....	5-2
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DRAFT

## GLOSSARY OF TERMS

Alphanumeric	Letter or number characters.
Attribute	A characteristic or distinctive feature.
Backlash	The ability to detect direction of line travel, enabling the print to be suspended when travelling in opposite direction and restart at the appropriate place.
BUP	Break up point, below nozzle plate and within charge electrode, where jet breaks into drops.
CIJ	Continuous Ink Jet.
Compact Flash	This is a memory card used to store vital printer information. It is located on the SBC.
DHCP	Dynamic Host Configuration Protocol. A protocol used to assign dynamic IP addresses on a dynamic network.
DNS	Domain Name System. This system converts domain names into IP addresses.
Drop	Ink drop. Also used as a unit of measurement in measuring character or font height.
Element	(Relating to Barcodes) Is any individual bar or space
Ethernet	This is the LAN (Local Area Network) technology used to connect the printer to other devices.
MSDS	Material Safety Data Sheets.
PPR	Pulses Per Revolution. Number of pulses for 1 complete revolution of a shaft encoder.
Print Trigger	The internal trigger signal to initiate printing
Product Detect	The signal received from either an external device (product sensor) or internally, to start the printing process. i.e. if no delays or offsets are set, this will generate the print trigger signal immediately.
Range	Information presented by the printer - the range between which the value should appear.
Raster	The set of charge voltages that create a print stroke. Rasters are specifically designed to accommodate drop size characteristics, number of lines of print and the required print quality.
SDS	Safety Data Sheets.
Select	Information to be put into the printer - use the keyboard $<>$ keys to choose the option required. Then use the <i>Select</i> key to insert or open.

Shaft Encoder	A mechanical device that emits X amount of pulsed signals per revolution of the shaft. This is typically attached to a production line to ensure that the print width is kept constant to varying line speeds.
Sequencing	Application of an automatic sequence of actions, such as used to start up or shut down the printer.
Soft Key	Key having its function controlled by software. The key can, therefore, be expected to have different functions at different points in printer operation.
Status	Information presented by the printer - the current value, setting or adjustment in the printer.
Stroke	The adjacent lines of ink drops making up the character drop matrix. The distance between strokes is sometimes used as a unit of measurement in spacing or delays.
USB	Universal Serial Bus. This is defined as a “plug and play” device that can be fitted into the printer. In the ci5000 series printers a USB socket is provided to enable a USB mass storage device to be inserted, this can contain information that the printer can use to restore, or can be used to create back-ups etc.
Unicode	An international coding scheme for written characters and text, each of which is identified by a 16-bit code between 0000 and FFFF. The code conforms to a Standard maintained by the Unicode Consortium and ISO organization.
Web server	A Web server is a program that allows users to view information on the printer from a remote connection using a web browser such as Internet Explorer.



# DRAFT