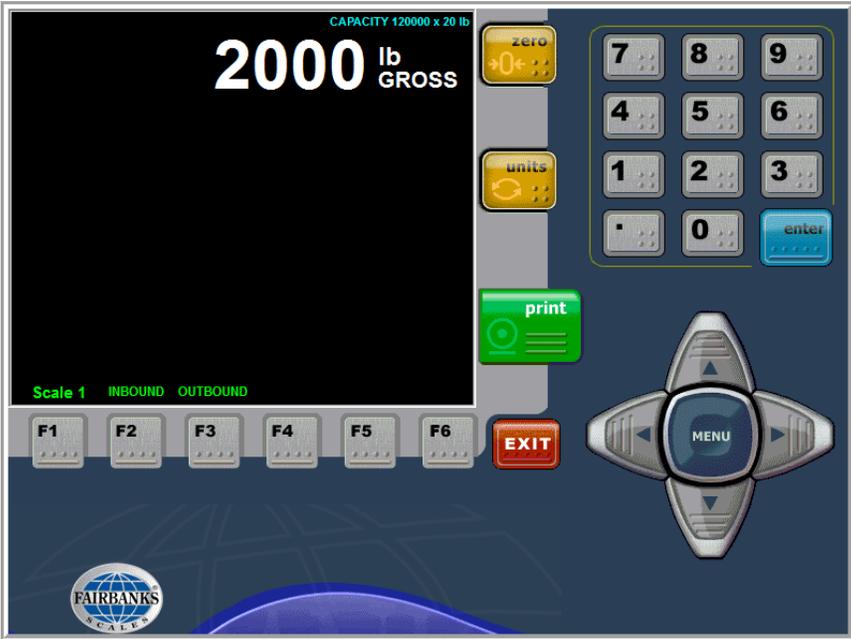# FB4000 In/Out Series Predictive Cutoff

SUPPLEMENTAL MANUAL TO FB4000 KERNEL

Amendment Record

FB4000 In/Out Series
Predictive Cutoff

Document 51435

Manufactured by **Fairbanks Scales Inc.**

Created	07/18	
Revision 1	07/18	Released Manual
Revision 2	07/20	Updated: Programming; User Operations sections
Revision 3	11/20	Added: Configuring the IP camera

Disclaimer

Every effort has been made to provide complete and accurate information in this manual. However, although this manual may include a specifically identified warranty notice for the product, Fairbanks Scales makes no representations or warranties with respect to the contents of this manual, and reserves the right to make changes to this manual without notice when and as improvements are made.

It is the responsibility of the requesting party to develop, maintain, install, and connect networking devices and general network connectivity as it applies to the originating party's network. No warranty or guarantee, expressed or implied, concerning the network, its design, its installation, or operational characteristics has been offered by Fairbanks Scales. Fairbanks Scales shall not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether or not based on express or implied warranty, contract, negligence, or strict liability arising in connection with the design, development, installation, or use of an intended network.

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Table of Contents

Section 1: General Information

> # A T T E N T I O N
>
> **This is strictly a**
> **SUPPLIMENTAL SERVICE MANUAL,**
> **limited to the**
> **FB4000 Cutoff Software.**
> **It accompanies**
> The **FB4000 Service Manual (51048).**
>
> **Any further information is located within that document.**

✔ **Absolutely no modifications are to be made to the FB4000 Cutoff Program, other than selection of standard options.**

✓ **Failure to comply with this policy voids all implied and/or written warranties.**

Section 2: Programming

2.1. LOGIN

Pressing the **MENU button** toggles between **Weight Display** and **Program Menu System**.

2.1.1. Three User Levels

There are three user levels for the FB4000 Cutoff Instrument

Standard Operator – No password is required.

Supervisor Level – Default password is **"1".**

Service Technician Level – Fairbanks Scales proprietary information.

2.1.2. Login Steps

1. To enter the **Menu System**, press the **MENU** button.

2. Press the **DOWN ARROW** to navigate through the following main menus.

   - **Audit Trail**
   - **Operator Menu**
   - **Configuration Menu**
   - **Cut-Off Menu**

3. Press **ENTER** to accept the option.

2.2. APPLICATION OVERVIEW

1. Press the **MENU button**.

2. The **OPTIONS MENU** will display.

3. Select the **CUTOFF** application.

2.2.1. Definitions

The predictive cutoff mode is designed to be used in various filling operations, such as putting materials into hoppers or trucks. The cutoff mode causes gates or valves to open and close as weight limits for various ingredients are met. It will be helpful to the operator to understand some terms that will appear in various menus shown on the display.

1. Cutoff

A set of controls (software and relays) to stop the flow of materials to (up weighing) or from (downweighing) a weighing scale. Also requires the customer to provide gates, values, conveyors, etc for complete operation.

2. Target Weight

The weight to be achieved in the filling sequence.

3. Preact

In filling sequence, a manually entered value to account for the material that is in free fall after the filling control has closed. This could be material in the air, falling between the closed gate and container, or the material in the piping system between the closed valve and the container or other similar instances. Each different material will have a unique Preact value. Use of a Preact value allows for more precise filling sequences.
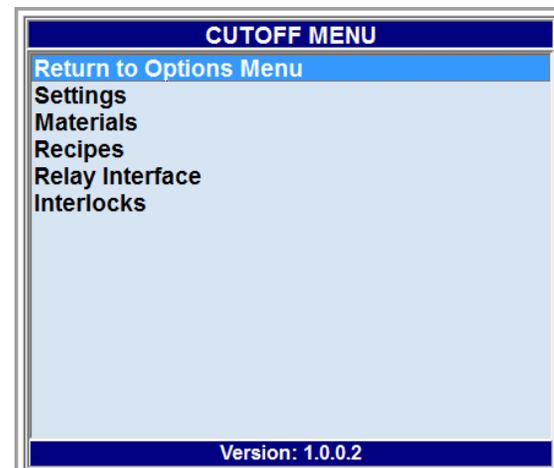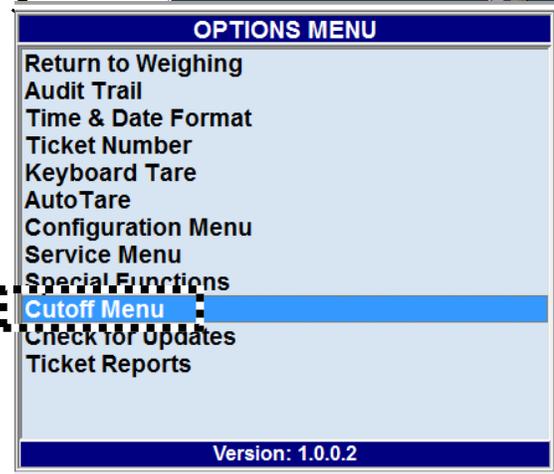
4. Fast Feed

The main feed/flow (bulk feed) material of a filling sequence. May be used alone or in conjunction with a Dibble feed (slow speed) to reach the target weight.

5. Dribble

A slow feed rate of material of a filling sequence. Typically used to obtain higher accuracy on the filling sequence. Dribble operations **require** a companion 'Fast Feed" operation. When Dribble is used, both the Fast Feed and Dribble Feed relays engage, then the Fast Feed relay drops out at the Dribble setting, allowing the Dribble Feed to continue (typically a slower feed rate compared to the Fast Feed) the fill until the Target weight (or Target Weight -Preact if Preact is utilized) is reached.

6. Draft

A draft is the amount of material that is weighed in one weigh operation. Up to four drafts can be programmed into the Fill Sequence program. For example, a truck might be filled in 4 drafts, with the truck being moved after each draft so as to distribute the load in various compartments of the trucks trailer.

7. Draft Size

This is a measure of the size of the draft. For example, the truck is loaded to 45,000 lbs in. 4 drafts. The first draft could be15,000 lbs. and each of the other three drafts 10,000 lbs. each.

8. Trim

An amount of material added to a draft to bring the weight up to the target weight or added after the target has been achieved. Trim is a manual function controlled by the Operator.

2.3. SETTING UP CUTOFF NETWORK CONNECTIONS

2.3.1. Introduction

A network connection must be established to communicate between the **Relay Accessory** and the FB4000 instrument utilizing the Cutoff software application.

1. If the FB4000 and relay Accessory will be on the customers' existing ethernet network, consult with the customers IT personnel for proper IP settings to use. The IP address provided for the Relay Box must be entered in the URL field in the **RELAY INTERFACE** menu.

   OR …

2. If no network is present, an ad hoc network can be created. This can be accomplished by directly connecting the FB4000 to the Relay Accessory with an ethernet cable. It is recommended to use an ethernet mini switch between the FB4000 instrument and the Relay Accessory.

I M P O R T A N T

The FB4000 and the Relay Accessory must be on the same network.

2.3.2. Installing the Relay Accessory Enclosure

1. Remove all power to the FB4000 Cutoff Indicator.

2. Mount the **RELAY ACCESSORY** with the cable entries at the bottom of the enclosure.

   — This includes the **Relay Modules**, **Simple I/O Processor (Brain)**, **Rack**, and **Power Supply**.

3. Snap the **RELAY MODULES** into place in the row of connectors on the rack.

   — Each **Module Connector** has a specific number.
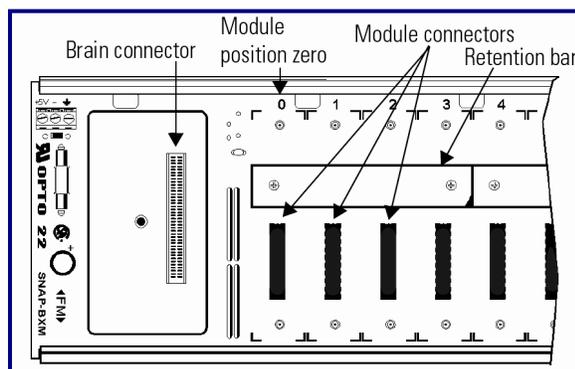
4. Install the **ENCLOSURE**.

— Align the Relay Mounting Rack so that the **Module Connector Numbers** are right-side up.

— The **ZERO (0)** is on the **LEFT.**

5. Position the Module over the connector, aligning the small slot at the base of the module with the Retention Bar on the Rack.

6. With the module correctly aligned over the connector, push on the module to snap it into place.

— When positioning modules next to each other, align the male and female module keys before installing.
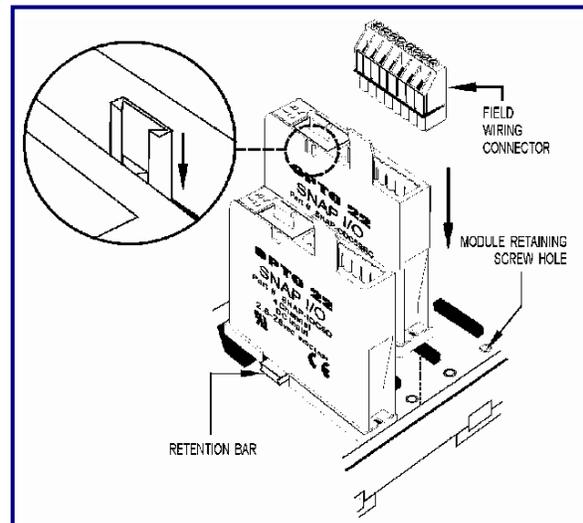
I M P O R T A N T
P R E C A U T I O N

Once the Modules snap securely in place, they require a special tool to remove them.

Place this tool in a safe location.

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7. Screw down the Module with two (2) standard 4-40 x ¼ Truss-head Phillips Screws.

— Be careful not to over-tighten the screws.

```
IMPORTANT
PRECAUTION
```
Do not plug the Field Wiring Connector into each Module at this time. These units attach the Relay Modules to the devices.

Do not connect the Field Devices at this time.

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8. Connect the **Ethernet Cables** into the RJ45 Port on the **FB4000** and the Relay Accessory.

9. Apply power to the **Relay Accessory**.

2.4. ASSIGNING IP ADDRESSES

An **IP Address** *must* be assigned utilizing the Cutoff Software application and to the **RELAY ACCESSORY**.

If a Network is present, contact or schedule with the customer's IT personnel to assign IP addresses to the Fairbanks equipment connecting to the existing network.

```
IMPORTANT
PRECAUTION
```
Do not *attempt this without consulting* a qualified service technician.

The customer's Network may malfunction if it is improperly configured.

All computers and devices within a Network have a unique **IP address,** identifying its unique physical location, functions and programming features.

— An IP address can be private, for use on a LAN, or public, for use on the Internet or other WAN.

— IP addresses can be determined statically or dynamically assigned by another device on the network.

— Each Relay Accessory is assigned **Static IP address** for the Network.

2.5. PROGRAMMING A STATIC IP ADDRESS FOR THE FB4000

Follow these steps to set the **Static IP Address** for the FB4000 Cutoff Indicator.

NOTE: *A __static__ IP address is HIGHLY recommended for the FB4000 when using the Cutoff Application.*

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1. Make sure the FB4000 is connected to the ethernet network.

2. From the FB4000 Desktop, **RIGHT CLICK** on the network icon. (The icon resembles a PC monitor).

3. Select OPEN NETWORK AND SHARING CENTER from the list that appears.

4. In the new window that opens, select CHANGE ADAPTER SETTINGS.
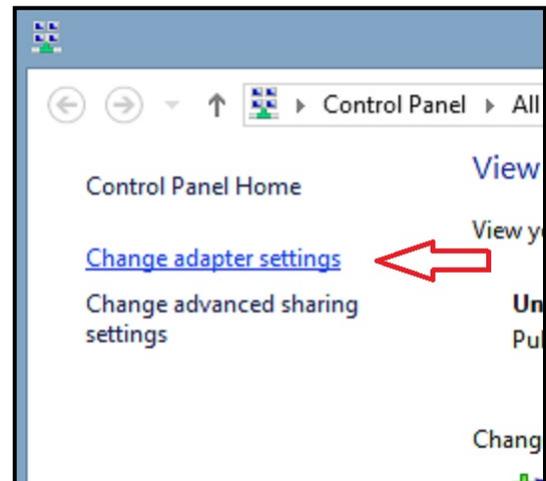
5. **RIGHT CLICK** on the Ethernet icon that appears and select PROPERTIES.

6. If prompted for the Administrator password, enter it in the password field.
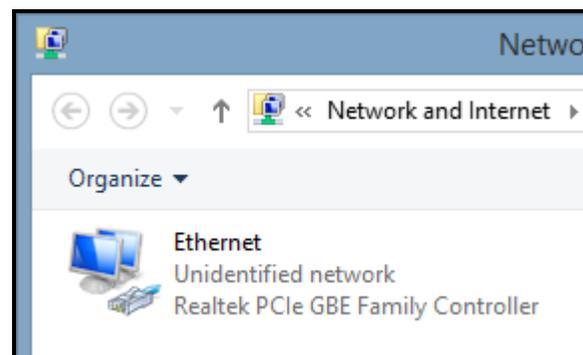
In the new window that opens, scroll down and **DOUBLE CLICK** on INTERNET PROTOCOL VERSION (TCP/IPv4)
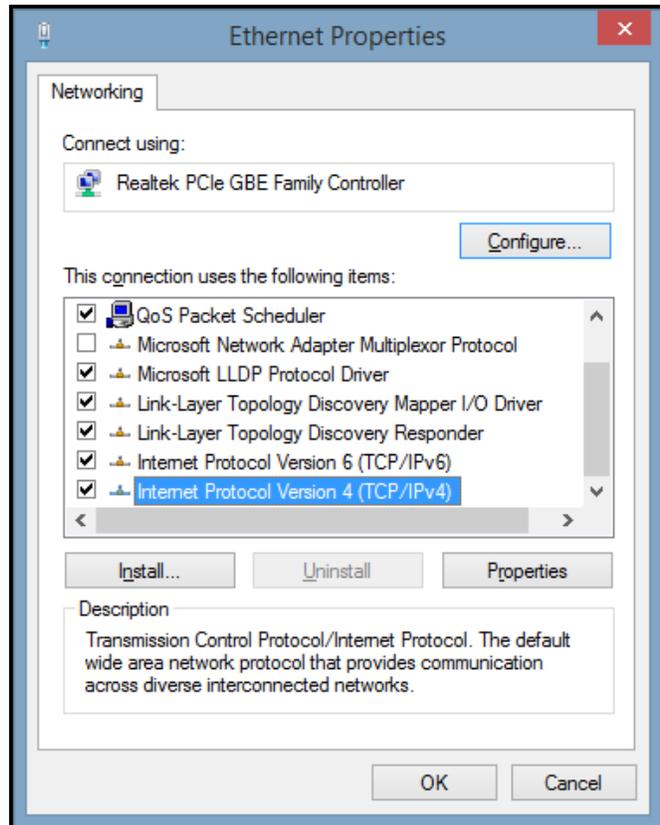
7. Enter the IP address provided by the Customers IT personnel or use the IP scheme shown in the image at the right.

8. When all the information has been entered, click OK.

9. Close all open windows as you return to the FB4000 Desktop.
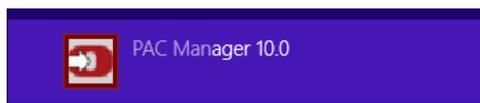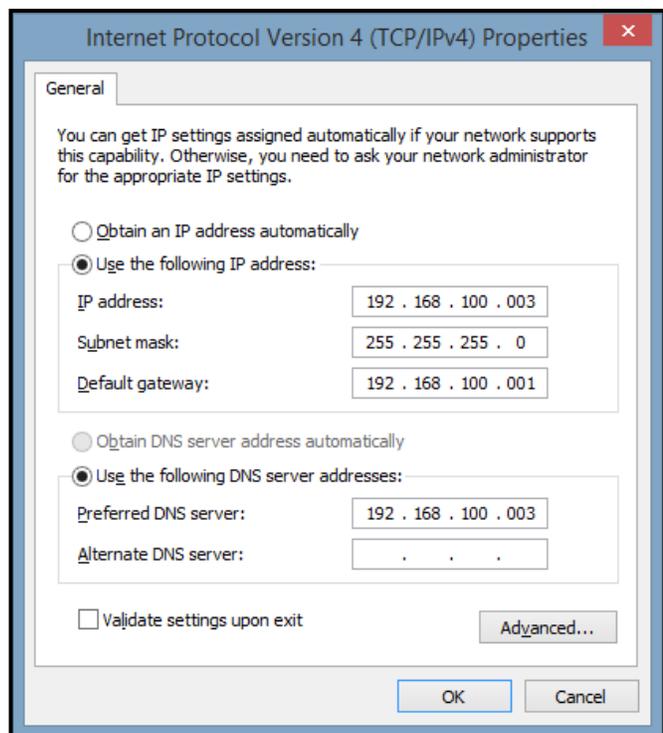
2.6. PROGRAMMING AN IP ADDRESS FOR THE RELAY ACCESSORY

The Relay Accessory **MUST** be given a STATIC IP address. The default IP address of the Relay Accessory is 0.0.0.0, which is invalid and **MUST** be changed or the FB4000 will not be able to connect to the Relay Accessory.

Use the following steps to identify and assign a **STATIC IP** address to the Relay Accessory.

1. Connect the Relay Accessory to the network using an ethernet cable.

2. From the FB4000 desktop, press the Windows key on the QWERTY keyboard.

3. At the Windows START menu, begin typing **PAC MANAGER**. You will see the PAC Manager link pop up in the Search Panel.
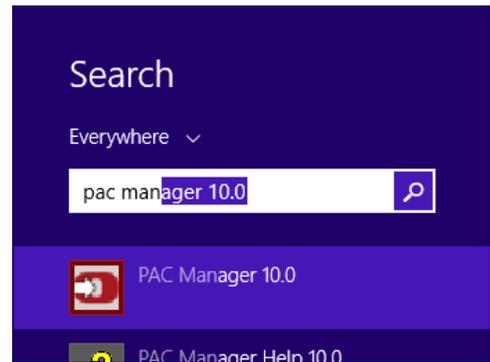
4. Click on **the PAC Manager** link. This will open the PAC Manager.

5. In PAC Manager's menu bar, click TOOLS > ASSIGN IP ADDRESSES.
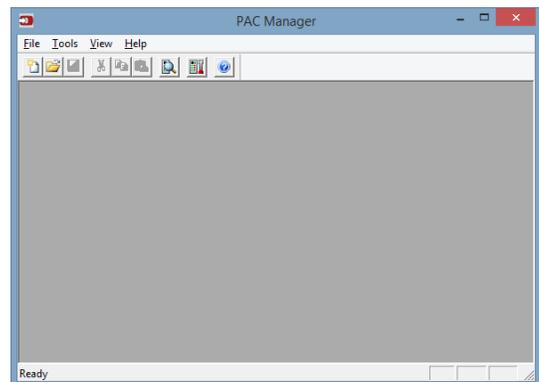
6. The **ASSIGN IP ADDRESS** dialog box opens. Any Relay Accessory without an IP address on this network segment will appear in the list of units requesting IP addresses. It may take a few second for the tool to complete its search. Be patient.
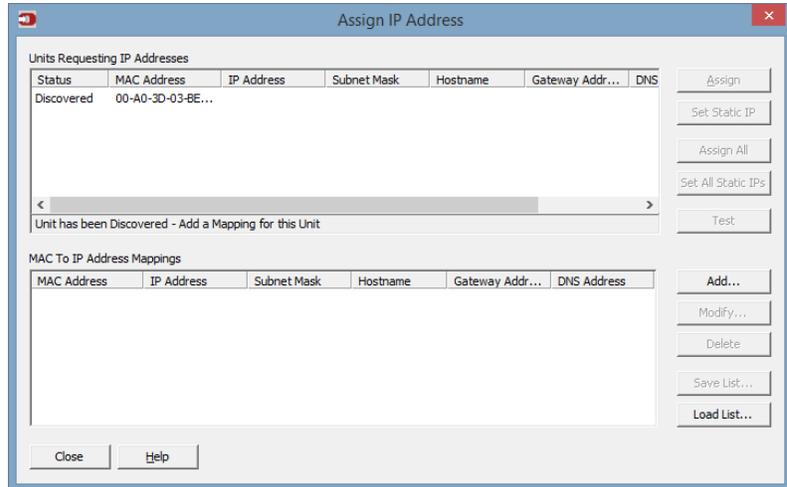
NOTE: If the relay box has been used previously, it may not appear with a Boot request. Reset the software to factory defaults and proceed.

7. Double-click the MAC address of the Relay Accessory in the list that matches the Relay Accessory you need to assign the IP address. A New Windows will open.

8. Locate the MAC address of the Relay Accessory. The address is located inside the box at the location shown (see below).
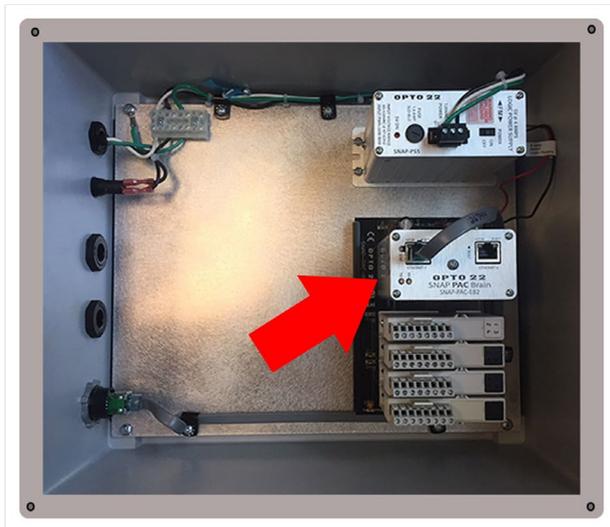
9. Enter the IP Address and the Subnet Mask for the device.

    a. If the Relay Accessory will be communicating with a FB4000 on another subnet, enter the Gateway (router) address.

    b. If the Relay Accessory will communicate only on the local subnet, leave the gateway address all zeros (0.0.0.0).

10. Leave the DNS address at 0.0.0.0 and the Host Name field blank.

11. When the IP address, subnet mask, and other fields are correct, click **OK**.

12. The new IP address information appears in the upper list in the dialog box, and the Relay Accessory's status changes to Mapped. The address information also appears in the lower list to show that this Relay Accessory has been mapped to this address.

13. With the Relay Accessory still highlighted, click **ASSIGN**. The address is saved to flash memory, and the status changes to IP Address Assigned.
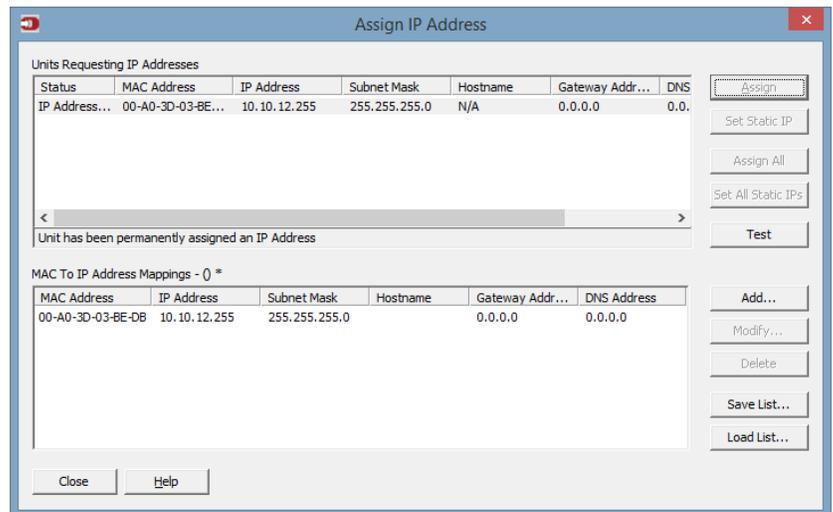
I M P O R T A N T

Once the Relay Accessory status becomes Assigned or Static, you <u>can no longer change</u> its IP address information from the ASSIGN IP ADDRESS tool. To change the address, use TOOLS > CHANGE IP SETTINGS.

14. Click the **CLOSE** button.

15. You will be prompted to save the Mapping File. Save the file.

16. Close PAC Manager by click the red X in the top right-hand corner of the application.

2.7. CUTOFF SETTINGS MENU
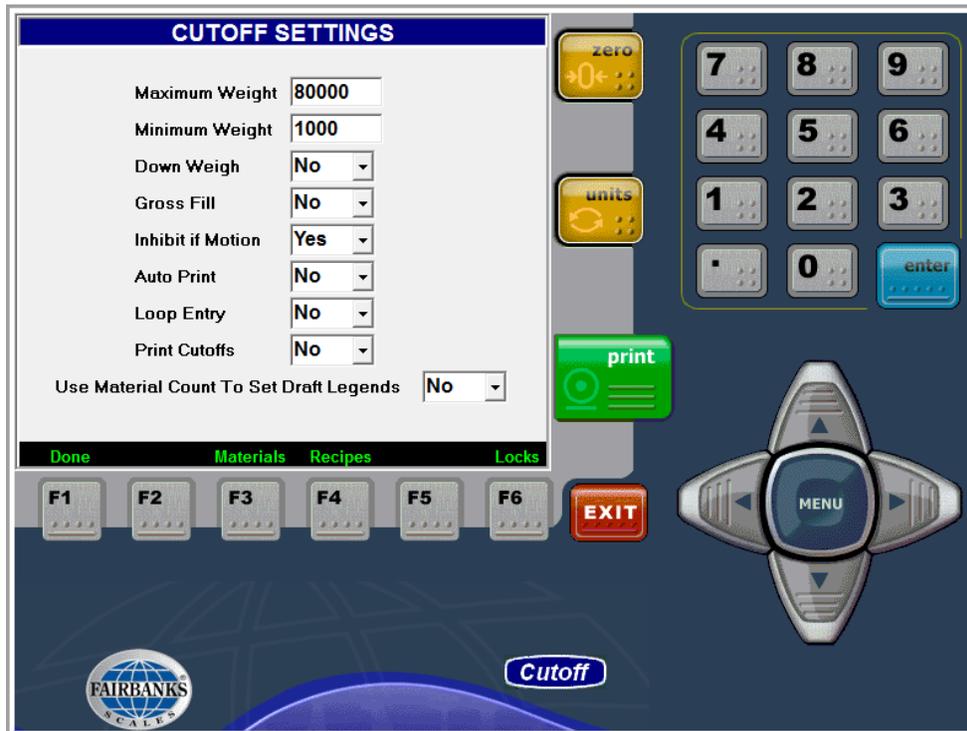
The **SETTINGS MENU** programs some of the standard options cutoff functions of the scale.

2.7.1. Cutoff Settings Programming Options

OPTION	DESCRIPTION(S)
Maximum Weight	Setting to establish the maximum weight that is allowed. Verified before filling sequence starts.
Minimum Weight	Setting to establish the required weight on the scale before a Filling sequence can start.
Down Weight	A filling process where material is taken out of a scale system, rather than filling a vehicle or container on scale.
Gross Fill	Filling based on GROSS weight on the scale, rather than NET
Inhibit if Motion	Prevents a Fill Sequence from starting if the scale is in motion.
Auto Print	Generates a print function for a Filling Sequence. Requires the PRINT CUTOFFS function for each product.
Loop Entry	Enables prompts at the beginning of the Filling Sequence for the three available prompts.
Print Cutoffs	Enables the option (F6) for printing at the end of a Fill Sequence. The **F6** key becomes Print and uses GTN ticket.

2.7.2. Cutoff Settings Menu Function Keys

MANUAL FILL SCREEN	
KEY	**DESCRIPTION(S)**
F1 – DONE	Save changes and leave the settings screen
F3 – MATERIALS	Open the material entry screen
F4 – RECIPES	Opens the recipe entry screen
F6 – LOCKS	Enter the interlock configuration screen

2.8. CUTOFF MATERIALS MENU

2.8.1. Cutoff Materials Programming Options

OPTION	DESCRIPTION(S)
Material ID	Identifier of the material for use in Manual filling and development of Recipes.
Fast Feed Relay	Relay module and module channel used for the Fast Feed device for a specific material.
Dribble	Dribble weight setting for this specific material. This setting is used in the Manual Filling Sequence only. Recipes have unique Dribble settings.
Description	Text description for a material.
Dribble Relay	Relay module and module channel used for the Slow Feed (Dribble) device for a specific material.
Preact	Preact setting for this specific material. This setting is used in the Manual Filling Sequence only. Recipes have unique Preact settings.
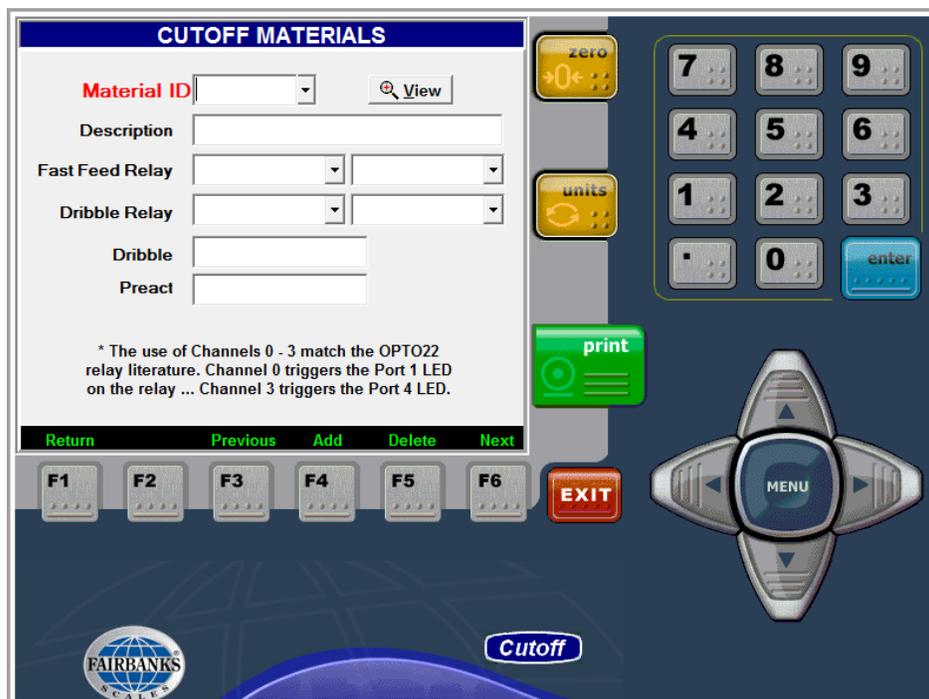
2.8.2. Cutoff Material Function Keys

KEY	DESCRIPTION(S)
F1 – Return	Closes the **MATERIAL EDITOR** and returns to the previous screen.
F3 – Previous	Moves to the previous material in **MATERIAL LIST**.
F4 – Add	Saves any changes to the currently displayed material before clearing the recipe information and giving focus to the Material ID. (adds if new/updates, if existing),
F5 – Delete	Deletes the currently displayed material. USE WITH CAUTION!!
F6 – Next	Moves to the next item in **MATERIAL LIST**.

2.9. CUTOFF RECIPES MENU

2.9.1. Cutoff Recipes Programming Options

The **RECIPES MENU** programs the different **RECIPES** (ingredient combinations) used by the weighing system.

OPTION	DESCRIPTION(S)
Recipe	The combination of different ingredients to make a mixture, primarily used within a production site. • Fifteen (15) characters maximum. • a.k.a. **Process ID**, which is used to recall a Recipe from the **CUTOFF SCREEN**.
Material Count	The number of ingredients that make up a **Recipe**. • Up to four (4) ingredients (materials) allowed per Recipe.
Material	Identifies which Materials is selected in the Recipe, i.e. 1 of 4, 2 of 4, etc.
Material #X	Identifies which ingredient is selected. • This drop-down menu displays all available materials. • Reflects the material count.
Target	Target weight for a specific Material within this specific Recipe. Each different Material within a Recipe will have its own Target weight.
Dribble	Slow feed rate used to increase accuracy of fill process. Used in conjunction with Fast Feed. • Dribble weight setting for this specific Material in this specific Recipe. Each different Material within a Recipe will have its own Dribble weight.
Preact	The estimated weight of ingredient that will continue to flow after the flow control valve is shut off.
Scale ID	Which specific scale is weighing the Recipe. Always set to Scale ID 1 unless custom software instructions provide other specific direction.
No. Drafts	The number of "**dumps**" needed to achieve the **Target Weight** for the ingredient selected. • The maximum number of drafts is four (4). • The average draft weight for each applicable draft displays in the **Draft Weights Group**.
Draft 1 thru 4	• Drafts split up a fill into 1 to 4 fills. This is to accommodate compartmented containers, etc. • Value of each Draft is the Target Weigh / the No. Drafts. Automatically calculated. Can be manually adjusted if needed. • Drafts are for use in single Material Recipes ONLY. Do not use Drafts for multiple Material Recipes.
Target (Draft Weights)	The total weight of the ingredients dispensed in Draft amounts.

IMPORTANT NOTE: Each material in a recipe must be filled by an entry from the material database. Failure to do so will result in the program failing to complete the fill procedure.
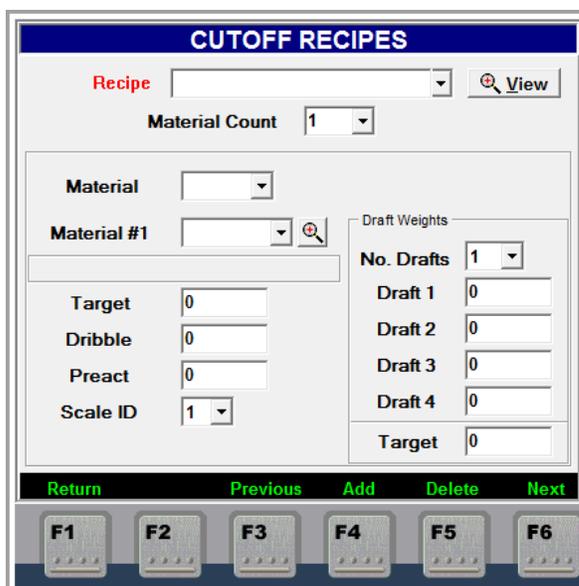
2.9.2. Cutoff Recipes Function Keys

KEY	DESCRIPTION(S)
F1 – Return	Closes the **RECIPE EDITOR** and returns to the previous screen.
F3 – Previous	Moves to the previous material in Recipe List.
F4 – Add	Saves any changes to the currently displayed material before clearing the recipe information and giving focus to the Material ID. (adds if new/updates, if existing),
F5 – Delete	This *completely* deletes the currently displayed material. <mark>USE WITH CAUTION!</mark>
F6 – Next	Moves to the next item in **RECIPE LIST**.

2.10. RELAY INTERFACE MENU

The **RELAY INTERFACE Menu** connects to and/or tests the **OPTO22 Interface**.

NOTE: The relay interface will not connect unless the operating mode is set to Filling or Filling In/Out

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- **Network Settings**

  - URL
    - This is the IP Address of the Relay box. Refer to the section: *PROGRAMMING AN IP ADDRESS FOR THE RELAY ACCESSORY* for additional details on this.
  - Port
    - **Always** set to 2001
  - Timeout (in MS)
    - Timeout setting. Leave at default unless instructed differently by custom software instructions or direction from Technical Product Support.

- **Read Area**

  - Includes: – Points, – On-Latch, – Off-Latch
  - Information for troubleshooting Relay box interface.

- **Write Area**

  - Includes: – On Mask, – Off Mask, – State Mask
  - Information for troubleshooting Relay box interface.

- **Modules #0 thru 4**

  - Location where you identify the type (Input Modules or Output Modules) module installed in each location.
    - INPUT MODULES used for Interlocks, Remote Start momentary switch and related devices.
  - The OUTPUT MODULES used for connecting to customers control device (gates, valves, belts, alarms, etc).

- **Send Config**

  o Once the Relay box Modules have been identified and the IP address entered in the URL field, this button is used to send this information to the Relay box for use by the Cutoff application. This is typically performed once during the initial setup of each FB4000 Cutoff system.

- **Connect / Disconnect Button**

  o Used to connect to the Relay box once the Relay box has been networked and the configuration file has been downloaded (sent) to the Relay box.
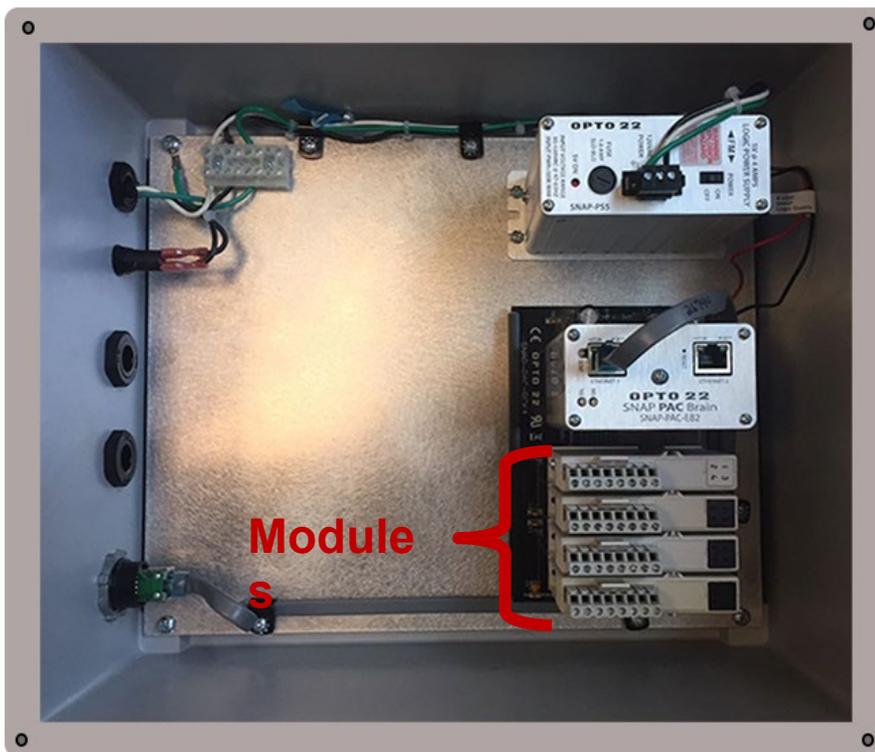
NOTE: Each Relay Box is different, using the various Input or Output modules order. The correct module type must be selected here.

2.10.1. Relay Interface Programming Options

PORT NUMBERS

Port Numbers are part of the addressing information used to identify the senders and receivers of messages.

- ─ They are most commonly used with TCPIP connections, Network routers, and computer software work with ports, and sometimes allow configuring Port Number Settings.

- ─ These allow different applications on the same computer to share Network resources *simultaneously*.

Port numbers are part of the addressing information used to identify the senders and receivers of messages.

2.11. SNAP I/O MODULE CONNECTIONS

The **RELAY ACCESSORY** has up to sixteen (16) configurable channels.

- Four (4) relays are **Input Relays**.
    - ─ White number overlay.
- Up to Twelve (12) are **Output Relays**.
    - ─ Red number overlay – Dry contact output
    - ─ Black number overlay – Digital output
- They are packaged four (4) to a module.
- These relays normally have **Open Contacts** (left on **NO**).
- Most **SNAP I/O Modules** have a top-mounted, pluggable field connector for easy access when the module is installed on the **SNAP Mounting Rack**.

The following diagrams show the field connector and the location of **Pin 1***.*

2.11.1. Input Relay Connections

RELAY DESIGNATION	MODULE CONNECTOR
Input Relay 1 (CH 0)	1
Input Relay 1 (CH 0)	2
Input Relay 2 (CH 1)	3
Input Relay 2 (CH 1)	4
Input Relay 3 (CH 2)	5
Input Relay 3 (CH 2)	6
Input Relay 4 (CH 3)	7
Input Relay 4 (CH 3)	8

2.11.2. Output Relay Connections

RELAY DESIGNATION	MODULE CONNECTOR
Output Relay 5 (CH 0)	1
Output Relay 5 (CH 0)	2
Output Relay 6 (CH 1)	3
Output Relay 6 (CH 1)	4
Output Relay 7 (CH 2)	5
Output Relay 7 (CH 2)	6
Output Relay 8 (CH 3)	7
Output Relay 8 (CH 3)	8
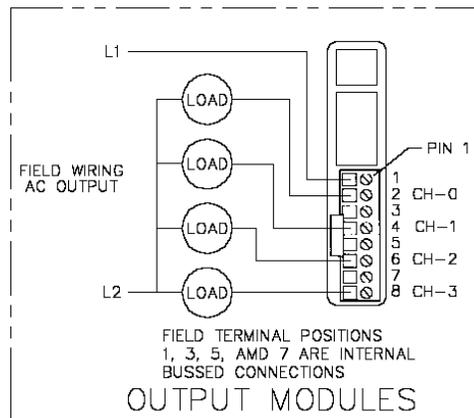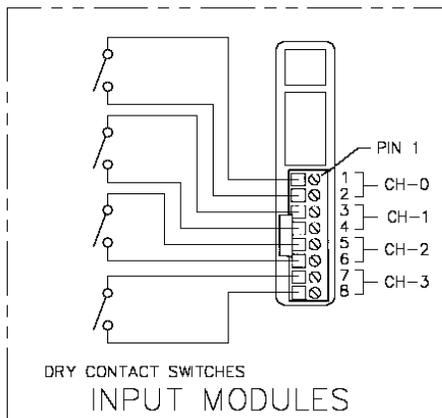
NOTE: Fast Feed and Dribble for any given material need to be on the same module, or they will not disengage separately.

2.12. INTERLOCKS MENU

2.12.1. Cutoff Interlocks Programming Options

Interlocks are physical channels that allow control of operation flow of material(s) into their destination.

— Up to four (4) **Interlocks** may be defined per **Recipe**.

— Interlocks must be engaged before a Fill Cycle can begin.
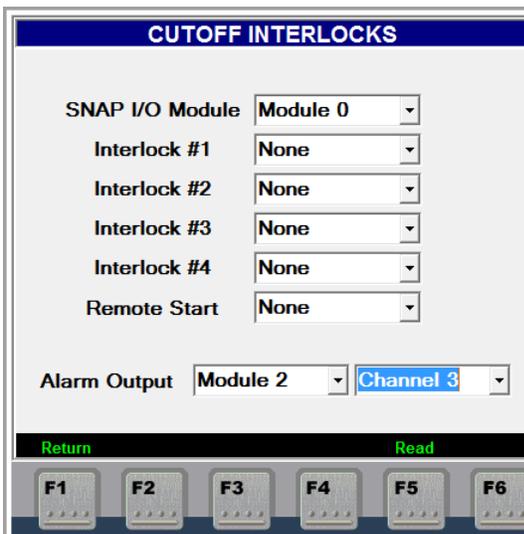
OPTION	DESCRIPTION(S)
SNAP I/O Module	Programs the module number on the SNAP-M16 where the Digital Input module will be found. — This is typically **Module 0.**
Interlock #1 thru #4	**Channel (0 to 3)** – Identifies which **Interlock** will be wired. **None** – No interlock applies.
Remote Start	A filling cycle can be started by installing a remote switch on the configured Remote Start input channel. All typical start filling requirements must be met Before filling can begin. i.e. Interlocks, valid/stable weight, etc…
Alarm Output	When activated by selecting a choice of either **Modules** or **Channels**, any filling errors result in an alarm.

NOTE: *Remote start button MUST be a momentary switch.*

2.13. PROGRAMMING THE CUTOFF EMAIL

1. Press the **MENU button**.

2. Enter the **Supervisor Password**.

3. Open the **CONFIGURATION MENU.**

4. Select the **SETUP EMAIL** option.

CONFIGURATION MENU

Return to Options Menu
Keyboard Tare
AutoTare
View / Delete Tares
Edit Prompt Fields
Mouse Properties
Printers & Formats
Setup Reports
Setup Cameras
Setup Email

Version: 1.0.0.2
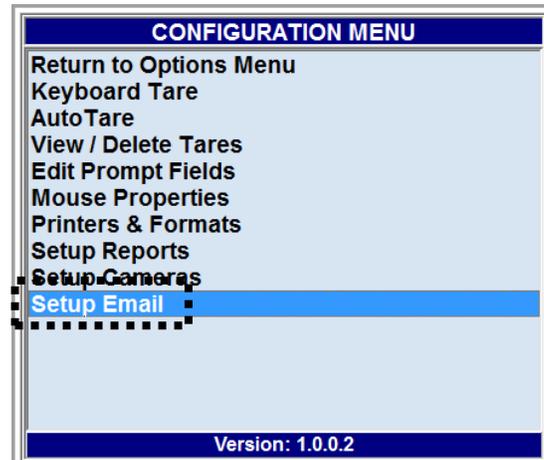
5. Select the **SETUP SMTP SERVER** button.

   — **Gmail©** is one of the easiest email servers to use for testing purposes.

EMAIL SETUP

Ticket Notifications

Delete

Add

Setup SMTP Server   Setup Email Format
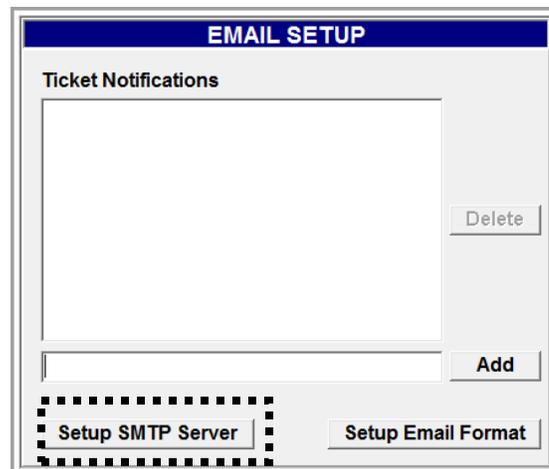
2.13. PROGRAMMING THE CUTOFF EMAIL, CONTINUED

OPTION	DESCRIPTION(S)
SMTP Server	The customer email provider's SMTP Address.
SMTP Port	Port used to connect the server. — SMTP Connections Default = 25.
Enable SSL	The basic security protocol used by email servers. — SSL Connections Default = 465.
SMTP User	Login for the email account.
SMTP Password	Password used for the email account.
From Name	Specific name given for the specific indicator unit or site location.
From Address	A **Reply to** email address. — Not the email or IP address of the FB4000 or application.
Subject Prefix	Entered for the Email Subject Line.
Send Test Email	Valid email address of the recipient.

NOTE: *These are example settings. DO NOT use these settings. Use information obtained from Customers I.T. support staff.*
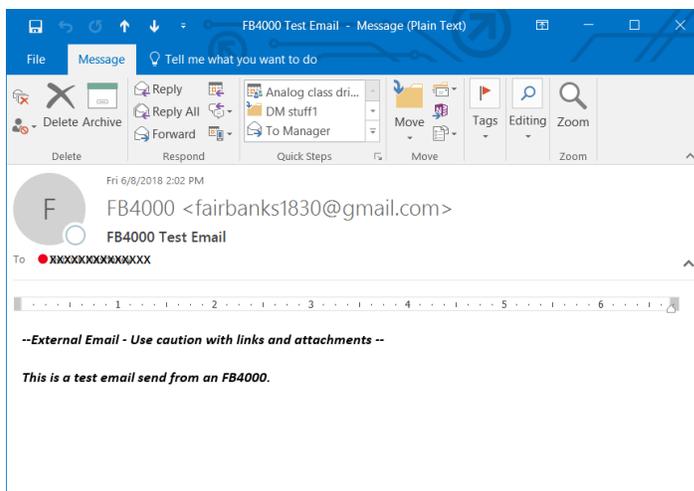
Sample of a **Test Email**.

2.14. EMAIL TICKET FORMAT SETUP

The **Ticket Format Setup** is the same as it is in the FB4000 I/O Program, and other FB4000 applications.

- **Drag-and-drop** items into position.

- The **Options button** offers a variety of selections for specific ticket needs.
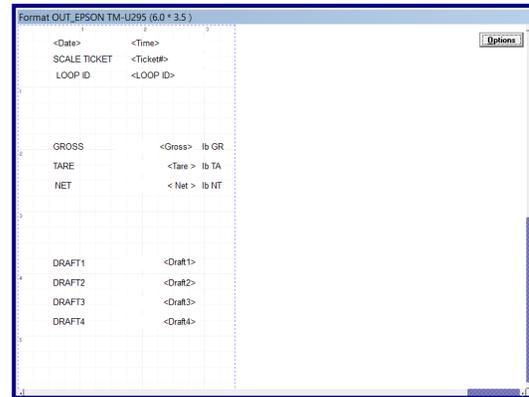
Shown to the right is a sample of a received **Default Ticket Email.**
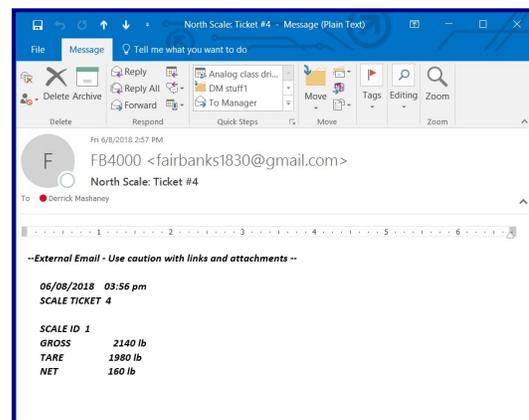
2.15. QUICK SETUP FOR FB4000 TO A SERIAL PRINTER

1. Exit your Application by clicking the **EXIT** button.

2. Select **Exit Application** by double clicking.

3. Move mouse to lower left corner **Windows** icon should appear.

4. Right click on the **Windows** icon.

5. Click on **CONTROL PANEL**

6. Click on **Devices and Printers**

7. Find the **EPSON TM U590** and right click on it

8. Hover over printer **set as default printer** click on the appropriate printer.

9. Example: After choosing **TM U295**. A ✔ appears next to **EPSON TM U295.**

10. Right click on the **EPSON TM U295** (your printer)

11. Click **Printer Properties**

12. Click the **Ports** tab

13. Choose the correct **COM** port connected to the printer.

14. Check the box for the appropriate com port.

15. Click configure port…

16. Verify the baud, parity, stop bits and flow control.

17. Click **Apply** if you made changes then click **ok** if correct.

18. Click **Apply** again then click **OK.**

19. Hit **F5** key to refresh.

20. Right click on the **TM U295**.

21. Click on **Printer** properties**.**

22. Click on **Print test page** test page should print.

23. Close all windows and relaunch your application by double clicking the **FB4000** icon

24. Once your application is running, press the **HOME** key on your keyboard

2.16.   FORMATTING A TICKET

There are three (3) ticket formats:

1. Inbound

2. Outbound

3. GTN

> **NOTE***: **GTN format** is the format used for printing cutoff information.*

To format the Text within a ticket:

- Access the **ADD/CHANGE TEXT Properties** window by right-clicking on any data item, or by pressing the **Options** button and selecting **Edit Text** properties.

  – Properties for each field are individually set.

  – There is a maximum of **one hundred-twenty (120)** report fields available for each ticket.

    - *The first **thirty five (35)** report fields are pre-defined.*

2.16. Formatting a Ticket, Continued

Field or button	Descriptions
Text Input Field	Enters or edits the text to describe this **Data Field Heading**.
"Ticket Field XXX… **<'Field Descriptor'>"**	Identifies **which** Data Field is being added or edited.
Visible	Check box that makes this Data Field **visible on the screen**, and includes it when printing.
Auto Size	Makes the image size on the ticket the actual size of the image file. The **Height** and **Width properties** are grayed-out.
Top and **Left**	**Places** the Data Field into its position, according to the top and left edges of the window. ✓ **97 pixels = ~1**

Field to be added or changed

Changes field item

Allows a field to grow as needed

Makes item visible on screen, and allows printing

Data field placement value from top or left; 97 pixels = ~1"
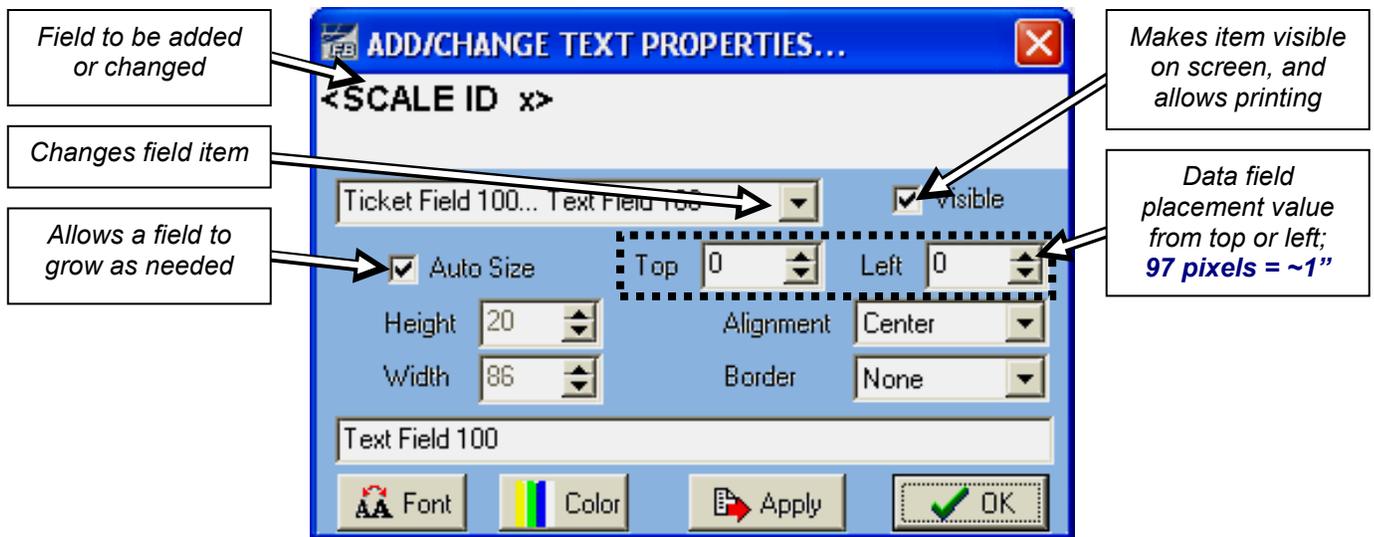
Field or button	Descriptions
Height and **Weight**	**Sets the pixel size** of each Data Field. This is automatically determined by the font size, but can be adjusted manually using these settings.
Alignment	Places the image within the **Height** and **Width Values**, if the image size is smaller. Settings include **Right, Centered***, or **Left Justified.**
Border	Allows a S**ingle-line border** to frame the Data Field, or **None.**
Memo Properties	Adds additional descriptive text to the Data Field.
Font	Selects the **font type, size**, and **attributes**.
Color	**Colors the text** within the Data Field.
Apply	**Applies the changes** to the Data Field without saving, to view how it appears onscreen.
OK	**Saves** and **applies the changes,** then exits from that Data Field.

ADD/CHANGE TEXT PROPERTIES...

<SCALE ID x>

Ticket Field 100... Text Field 100 ▼   ☑ Visible

☑ Auto Size   Top ⌷0⌷ ⬍   Left ⌷0⌷ ⬍

Height ⌷20⌷ ⬍   Alignment ⌷Center⌷ ▼

Width ⌷86⌷ ⬍   Border ⌷None⌷ ▼

Text Field 100

AA Font   ▌▌▌ Color   ▷ Apply   ✓ OK

Pixel height & width, determined by the font size

Right, Centered or Left Justified

Memo Properties

Allows a single-line border, or none

Selects font types, sizes, and attributes

Colors data item selected

Applies all changes

Saves/applies changes, exits

2.16.1. Adding a New Ticket Format

Step 1: **Select Printer** →

Step 2: **Select Format** →

Step 3: **Format Ticket [F5]** →

1. From the **Main Weigh Window**, press the **Home** button on the external keyboard.

2. Press the **Format Tickets** tab.

3. Select the **Printer**.

4. Select the Format.

   – Inbound

   – Outbound

   – GTN

5. Press the **Format Ticket [F5]** button.

– A basic, default ticket template appears, which can be adjusted to fit the business' specific needs.

6. Adjust the placement of a current field by left-click-holding, then dragging it to its new location.

– The **Add/Change Text Properties…** window opens once the mouse button releases.

7. Adjust the field properties to fit the necessary ticket format.
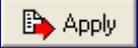
8. Click [📄 Apply] to view the edits.

9. Once all edits are correct,
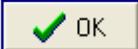
click [✓ OK] to save them.
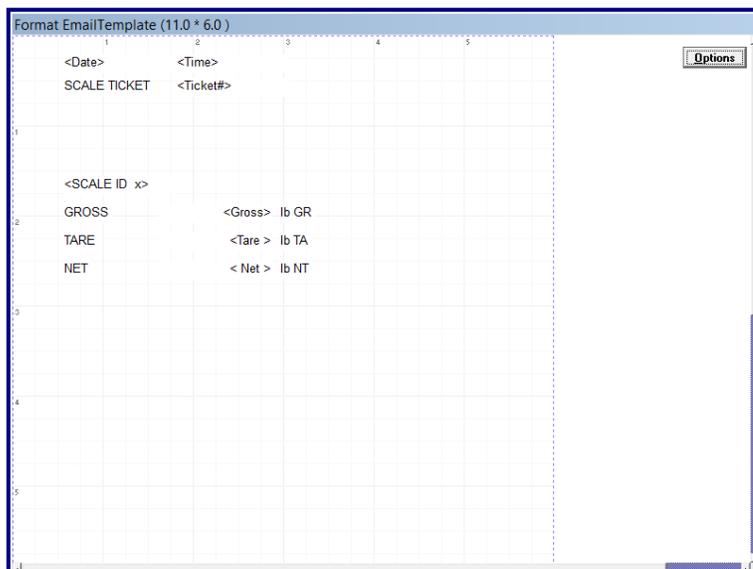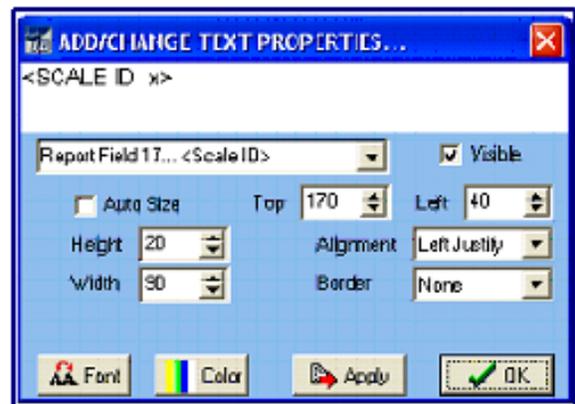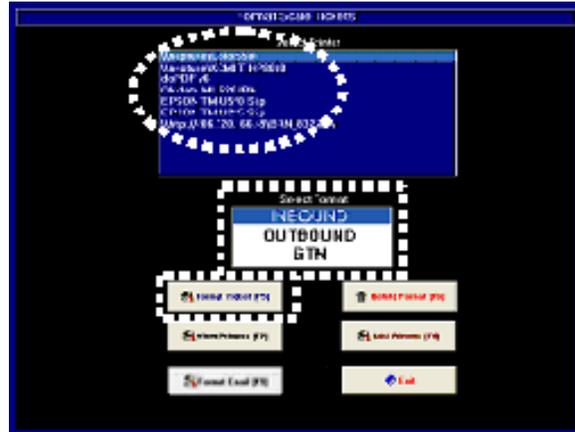
2.16.2. Adding a Text Field

1. To add a field, click [**Options**] .

2. Select Add Text field.

3. ***Drag-and-drop*** the field where it belongs on the page.
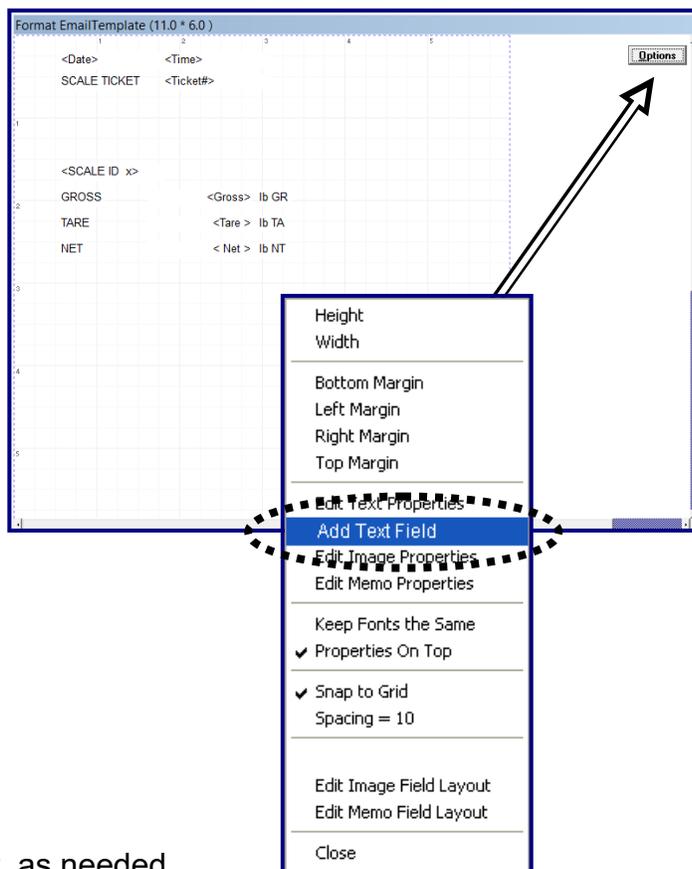
4. In the **Text** field, add a title or text, as needed.

5. In the **Report** field drop-down list, select the appropriate type of field.

6. Format the field size, placement, font size and style, as needed.

7. Click [**Apply**] to view the edits.

8. Once all edits are correct, click [✔ **OK**] to save them.

9. Click the [✕] button to close the window.

Add title or text
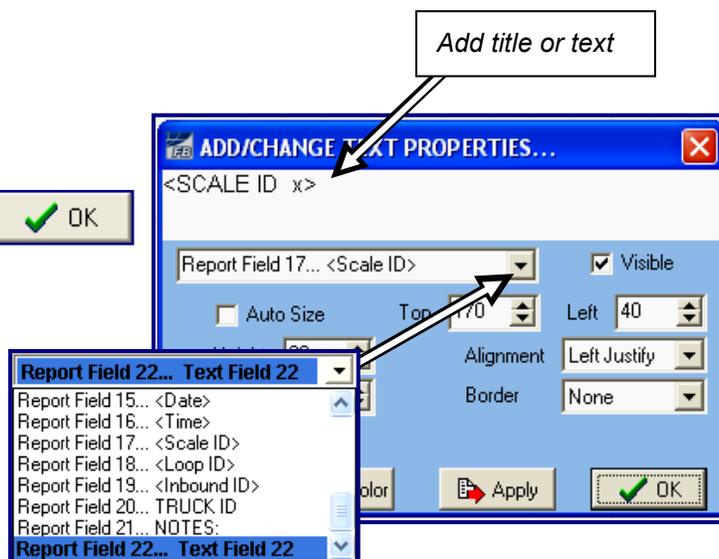
2.16.3. Deleting a Text Field

1. From the **Ticket Layout Screen**, click on the unneeded field.

    – The field highlights with a bold rectangle.

    – The **ADD/CHANGE TEXT PROPERTIEs…** window opens
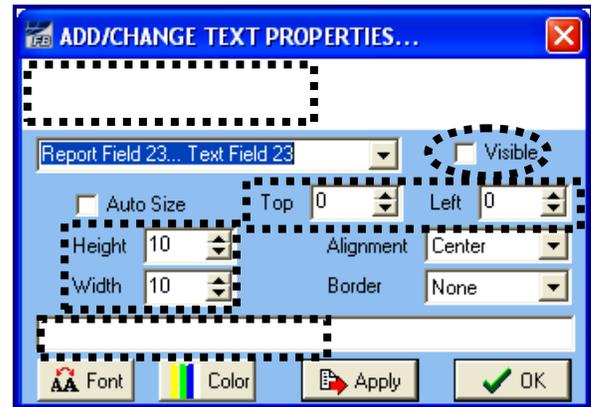
2. Remove all information from the **Title** and/or **Text** fields.

3. Input **0** in to the **Top** and **Left** fields.

4. Input **10** in the **Height** and **Weight** fields.

    – These are the minimum amounts allowed.

5. Uncheck the **Visible** box.

6. Once all edits are correct, click [✔ OK] to save them.

7. Click the [✗] button to close the window.

8. Click the **OPTIONS** button.

9. Click **CLOSE.**

2.17. EMAIL TICKET RECIPIENTS

Completed transaction tickets can be sent to several recipients.

First, they must be added in the **EMAIL SETUP** to the **TICKET NOTIFICATIONS**.

1. Enter a **valid email address** in blank field.

2. Click the **ADD button**.

The added email recipients display.

3. Remove any recipient by highlighting the **email address**, and then clicking the **DELETE button**.
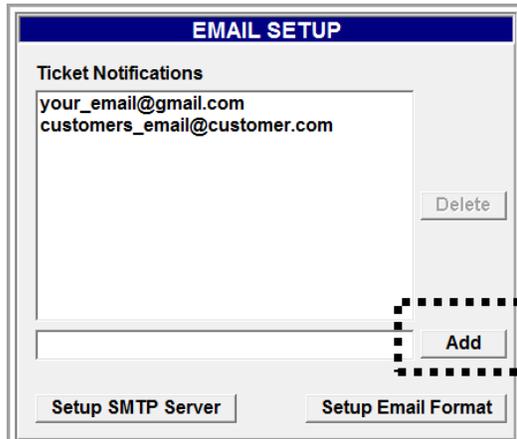
2.18. CONFIGURING THE IP CAMERAS

To add cameras to the FB4000, the camera(s) must be added to the network and then configured within the instrument. For instructions to connect the Fairbanks IP cameras to a network, see the **IP Camera Setup Bulletin – 51509.**

To configure the cameras within instrument:

1. On the weigh screen, press **MENU**.

2. Select **Configuration Menu**.
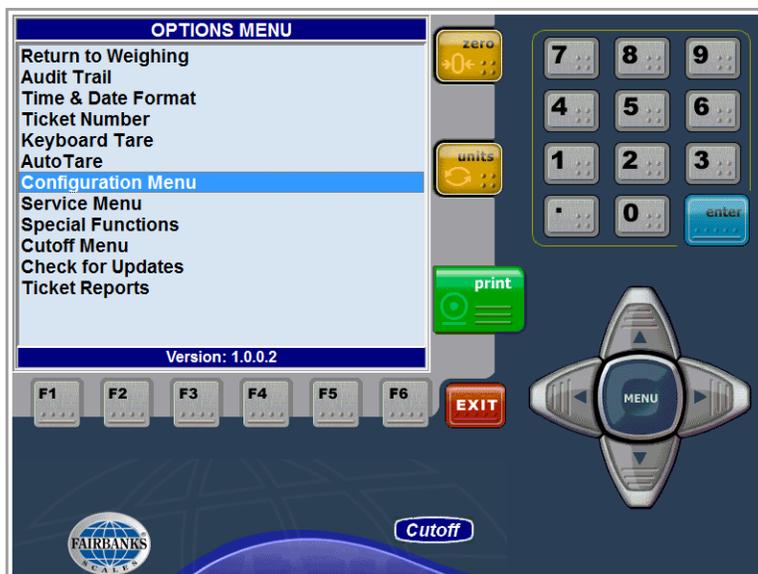
3. In the **Configuration Menu**, select **Setup Cameras**.
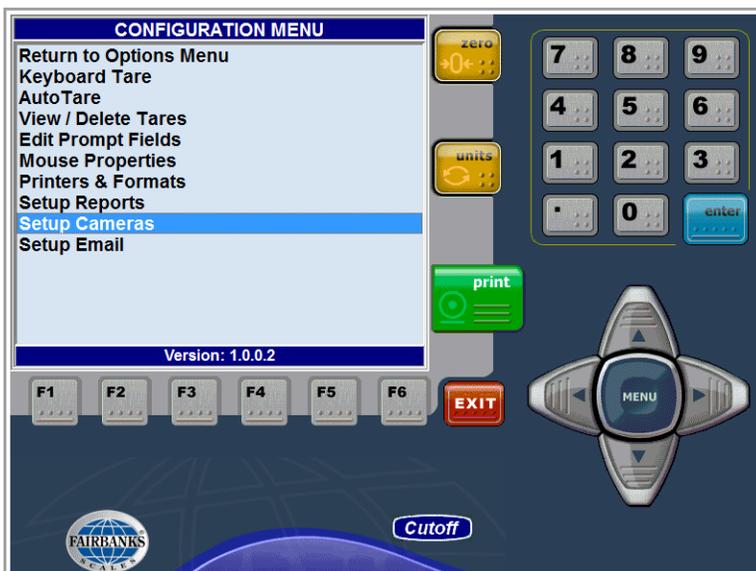
4. For **Camera 1**, and if necessary, **Camera 2,** select Enabled from the dropdown list.

5. Enter the IP Address for up to two (2) cameras. These addresses were established when the IP cameras were configured (for more information, see the **IP Camera Setup Bulletin - 51509**).

6. Select the camera settings:
    a. **Screen Default**: The camera image that will display first when the camera function key is pressed on the weigh screen.

    b. **Transaction Camera**: Which image(s) will be saved when a transaction is processed.

    c. **Print on Ticket**: Which image(s) will be printed on the ticket.

Section 3: User Operations

3.1. FOUR MAIN WEIGH SCREENS

Displayed below are the four (4) main **Weigh Screen** *views.*

WEIGH ONLY Mode

WEIGH ONLY FILL Mode

IN/OUT ONLY Mode

IN/OUT FILL Mode

MODE	DESCRIPTION(S)
Weigh only	Basic GTN weigh mode with manual tares
Weigh only fill	Basic GTN mode with recipe and manual filling
In/Out Only	Standard inbound/outbound weighing
In/Out Fill	Standard inbound/outbound with recipe and manual filling

3.2. LOGIN

1. Press the **MENU button**.

2. Enter the **Supervisor Password**.

3. The **OPTIONS MENU** will display.

4. Select the **CUTOFF** application.

OPTIONS MENU

Return to Weighing
Audit Trail
Time & Date Format
Ticket Number
Keyboard Tare
AutoTare
Configuration Menu
Service Menu
Special Functions
Cutoff Menu
Check for Updates
Ticket Reports

Version: 1.0.0.2
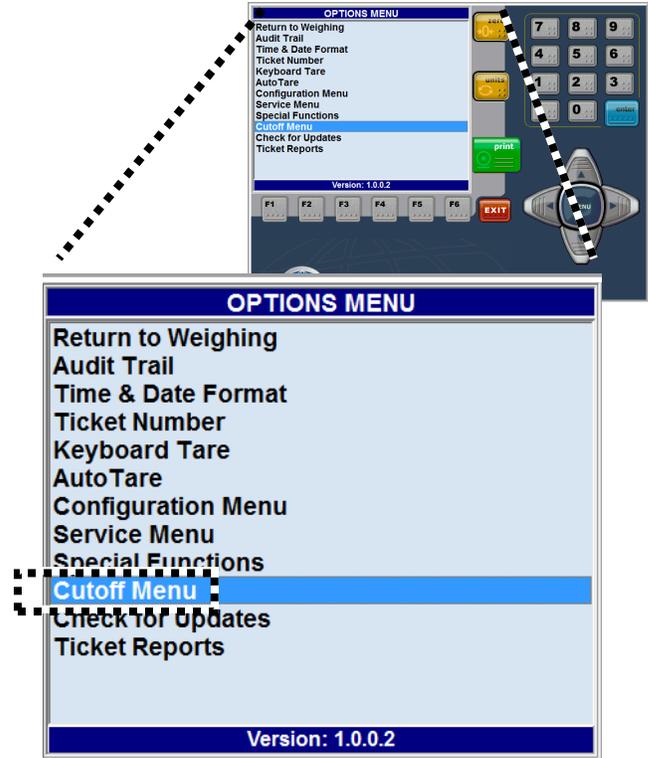
The **CUTOFF Menu** includes the following sub-menu options.

- Settings

- Materials

- Recipes

- Relay Interface

- Interlocks

CUTOFF MENU

Return to Options Menu
Settings
Materials
Recipes
Relay Interface
Interlocks

Version: 1.0.0.2
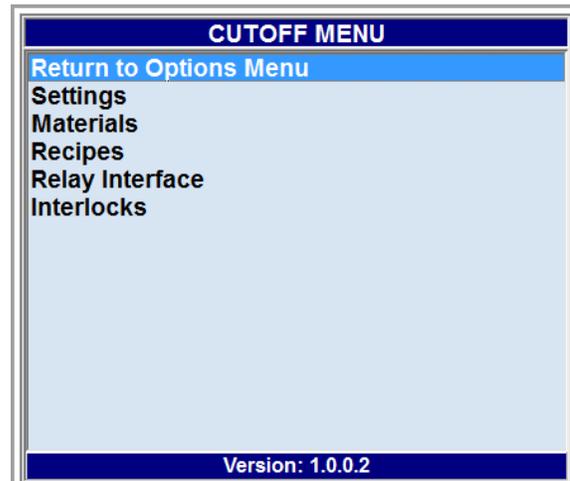
NOTE: Customer's supervisor password can be changed by holding **CTRL+ALT+ENTER** on the external keyboard.

3.3. PROGRAMMING CUTOFF RECIPES

NOTE: *Before filling,* **RECIPES, MATERIAL, INTERLOCKS** *and the* **RELAY INTERFACE** *must be configured.*

Access the **CUTOFF MENU** *from the* **Options Menu.**

---

1. Enter a **RECIPE ID**. The recipe ID can be up to **15** alphanumeric characters.

2. Select **MATERIAL COUNT**. Recipes can include up to **four (4)** materials.

3. In the **MATERIAL** drop box, select one of the **material numbers**. Separate target weights will be entered for as many materials as are listed in step 2.

4. Select the **material numbers** from the drop-down list. This field must be filled for each material in the recipe. Materials must be configured prior to being used in a recipe.

5. Enter the **TARGET WEIGHT**.

6. Enter the **DRIBBLE**. If the material does not have an output configured to the dribble feed, leave this at zero.

7. Enter a **PREACT**. The fill will shut off completely when the fill weight reaches target - preact.

8. Select **NEXT MATERIAL** and repeat **steps 4-7**.

9. Recipes with a material count of one will allow for the fill to be split into up to four drafts. Each draft can have a target weight set independently.

10. Press **F4** when finished to save the recipe.

NOTE: When choosing a recipe, be certain that each material in the recipe is filled with an entry from the material database. Empty fields will result in the failure of the filling process.

PROGRAMMING TIPS

- The **Recipe Editor** is used to alter, add and delete recipes.
- The **Recipe ID field** is a fifteen (15) digit entry.

- No limits exist on the number of recipes that can be added.

- The **View button** displays the current list of available recipes.

- Double-clicking an entry in the list recalls the entry for editing.

3.4. IN/OUT FILL MODE (NET UP/DOWN WEIGHING)

Filling - ONLY

Filling - IN/OUT

KEY	DESCRIPTION(S)
F1 – Scale X	Selects which **SCALE** is being configured.
F4 – Rcp Fill	Enters the **Cutoff Mode** for programming the **RECIPE FILL option**.
F5 – Man Fill	Enters the **Cutoff Mode** for programming the **MANUAL FILL option**.
F6 – Camera	Activates the **Camera,** if this optional component is present.

1. Press **F4 - Rcp Fill** or **F5 - Man Fill** to enter the **Cutoff Mode**.
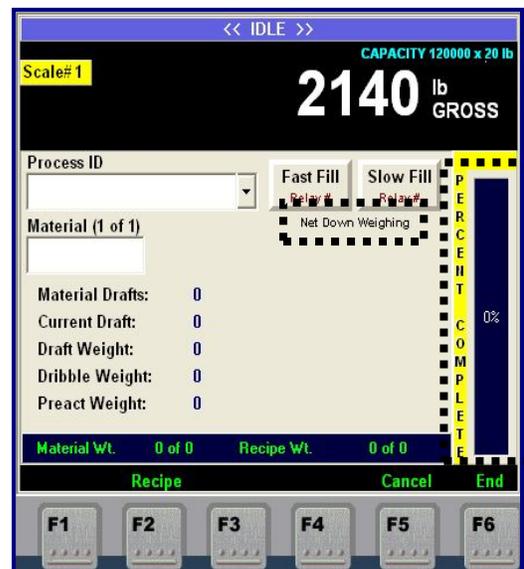
The **PERCENT COMPLETE** *progress bar in the* **Fill Mode** *will appear* ***empty*** *at the start if* **Up Weighing,** *or* ***full*** *at the start if* **Down Weighing**.

✓ This depends on the **DOWN WEIGH** settings in Cutoff General Settings.

3.4. IN/OUT FILL MODE: (NET UP/DOWN WEIGHING), CONTINUED

NOTE: Be certain that the Kernel operating mode is set to "**GTN screen"** before doing any filling applications.

---

2. Program the **GROSS FILL** in the **Cutoff General settings** to one of the two choices.

   ✓ **Gross Fill = YES**

   OR…

   ✓ **Gross Fill = NO**
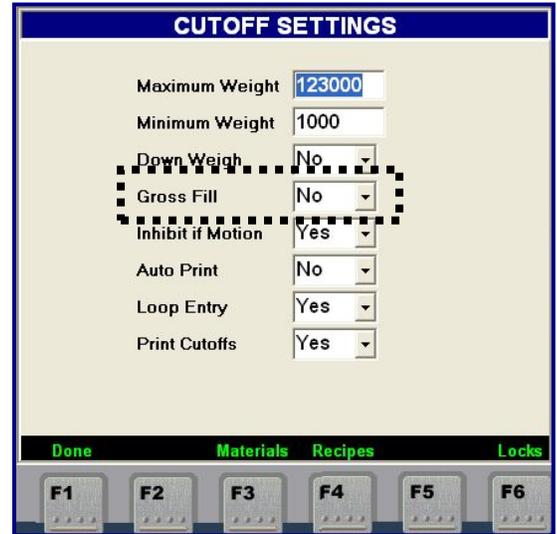
NOTE: *If Gross Fill is set to* **NO***, and no tare weight has been entered, an* **Auto Tare** *will occur when entering the* **Cutoff Mode.**

CUTOFF SETTINGS

Maximum Weight	123000
Minimum Weight	1000
Down Weigh	No
Gross Fill	No
Inhibit if Motion	Yes
Auto Print	No
Loop Entry	Yes
Print Cutoffs	Yes

Done   Materials Recipes   Locks

F1   F2   F3   F4   F5   F6

NOTE: **Tares** must be enabled in service menu, if gross fill is **NO***.*

NOTE: If gross fill is **YES**, the tare weight will be subtracted equally from the various ingredients.

KEY	DESCRIPTION(S)
F2 – Recipe	Erases the existing **Recipe Information** and accesses the **Process ID field**.
F5 – Cancel	If a Recipe has been selected, the Recipe information is cleared and focus is given to the Process ID field, otherwise exits the Fill Mode and returns to the Weigh Menu.
F6 – End	If a Filling Process has been completed, see [PRINT]. If a Filling Process is in progress, see Terminating a Fill Process. Otherwise, exits the Fill Mode and returns to the Weigh Menu.
MENU Button	Returns to the **Weigh Menu** if a filling process has not been initiated.

3.5. ENTER RECIPE ID

1. Click the drop-down menu, the numeric keys or the external keyboard to enter a **Process ID**.

2. Press **ENTER**.

- The Recipe information displays.

- If incorrect information is entered, an error message will be display indicating the Recipe was not found.
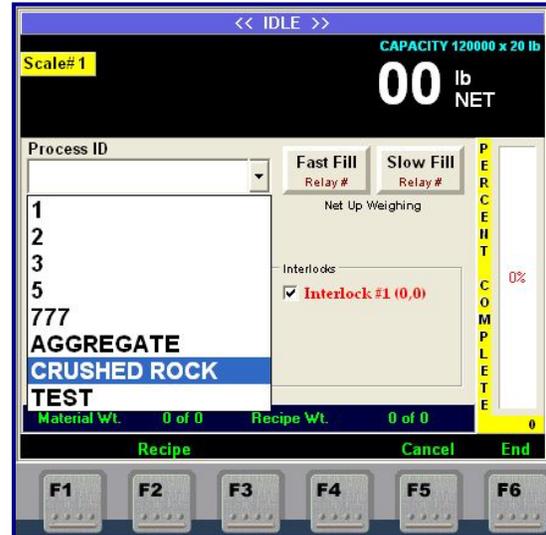
3.6. A FILLING CYCLE

Whenever performing a **Fill Operation**, **scale motion, scale weight**, and **all interlocks** are checked.

- Filling is suspended when any **Interlocks** are encountered during the weigh process.

- An Error / Interrupt Message displays.

- The Operator must acknowledge the message and click on the release button.

NOTE: *All* **Interlocks** *must be engaged before the filling cycle can continue.*

A similar message appears if there is motion on the scale.

3.6.1. Cutoff Interlocks Function Keys

KEY	DESCRIPTION(S)
F1 – Start	Starts a Filling Process. — A valid **Process ID** must first be entered and all interlocks set up correctly before this option displays. — An error message displays if an Interlock is not (*see **image below***).
F2 – Recipe	Clears the screen and displays the Process ID (Recipe).
F5 – Cancel	If a **Recipe** has been selected, pushing cancel will clear the Recipe information and the Process ID field displays. Otherwise, pressing Cancel exits the Fill Mode and returns to the Weigh Menu.
F6 – End	Completes a filling process if a filling process is in progress (see [PRINT]) or exits the Filling Screen.
F6 – Print	Print is used when print cutoff is set to **YES**

3.7. LOOP ID ENTRY INSIDE FILLING SCREEN

1. Enter a **TRUCK NUMBER prompt** displays whenever a **Loop Entry** is selected. This is for operator reference only it is **NOT** a stored data field.

2. Enter the **LEGEND** for customizing how each of the three (3) prompts will display.

   — The first one is the **primary prompt,** and is by what the transaction will be recalled.

   — All these prompts can be labeled to suit the customer's needs, which may include the following.

   - **Loop ID**   • **Truck ID**
   - **Car ID**   • **Driver Name or Driver#**
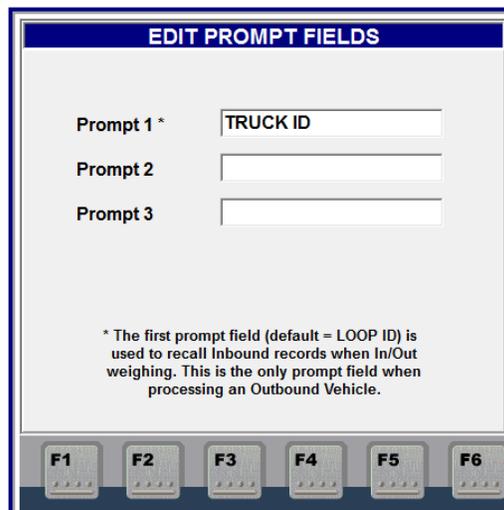
3.8. START FILL

1. Enter the **Loop Number**, and press **ENTER**.

   - Press **START** to begin a **Fill Cycle**.

- After starting a fill cycle, the **Target Weight** (*Dribble + Preact + Draft*) displays below the Fill Weight.

   - In the image to the right, the **Dribble Target Weight** of 8000 is displayed.

   - The **Percent Complete bar** includes the total recipe weight (20000) and the percentage of total product weight loaded or dumped.

   - Filling continues until the **Dribble Weight** is reached, an **Interlock is triggered**, or an available **Function Key** or the **Stop Button** is pressed.

KEY	DESCRIPTION(S)
F1 – Halt	Once a **Filling Cycle** has been started, **Halt** closes all relays and temporarily suspends a Filling Cycle.
F6 – End	Once a **Filling Cycle** has been started, **End** closes all relays and temporarily suspends the cycle. – A dialog box appears requesting the operator to select the appropriate next step.

NOTE: *Once the* **Filling Cycle** *starts, the onscreen* **Stop** *button closes all relays and suspends all actions.*

3.9. HALT FILL CYCLE:

When a **Fill Cycle** is halted, all Relays *close*.

<< FILLING STOPPED >> displays at the top of the window.

1. Press **F1** (**Resume**) to continue the **Fill Cycle**.

2. Press **F6** (**End**) to discontinue it.
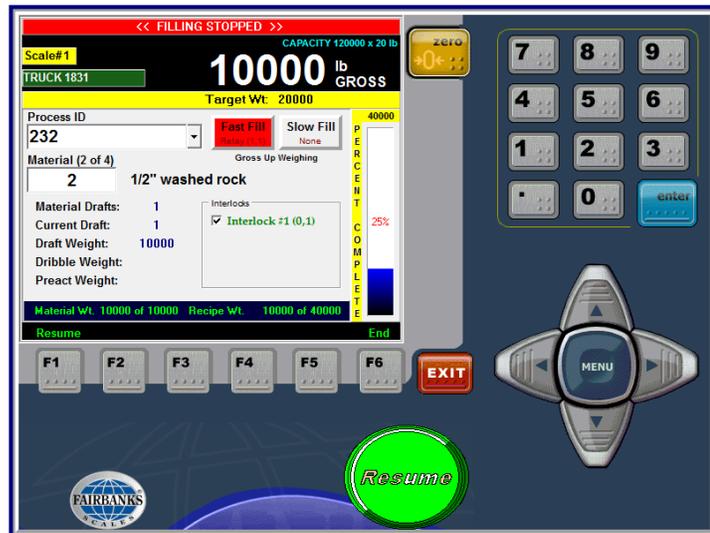
KEY	DESCRIPTION(S)
F1 – Resume	The **Filling Cycle** continues from the Halt point.
F6 – End	A dialog box appears requesting the user to select the appropriate next step.

**NOTE:** *After stopping the* **Filling Cycle***, the onscreen* **Resume** *button restarts all actions.*

3.10. TERMINATING AN IN-PROCESS FILL CYCLE

KEY	DESCRIPTION(S)
NO! CONTINUE FILL CYCLE	The fill cycle continues from where it was suspended.
END FILL CYCLE (Print if Enabled)	Ends the fill cycle. All draft weights are captured and a ticket is printed.
TERMINATE FILL CYCLE	The fill cycle is terminated. All information regarding the fill cycle is discarded.
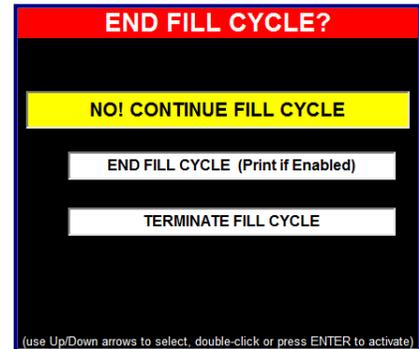
3.11. FIRST DRAFT DRIBBLE TARGET REACHED

When the **Dribble** or **Draft Target** is reached, the **FAST FEED relay** closes.

Depending on the selected material and the selected **Preact Weight**, one of the following displays.

<< SLOW FEED >>

<< TRIM >>

<< DRAFT COMPLETE >>
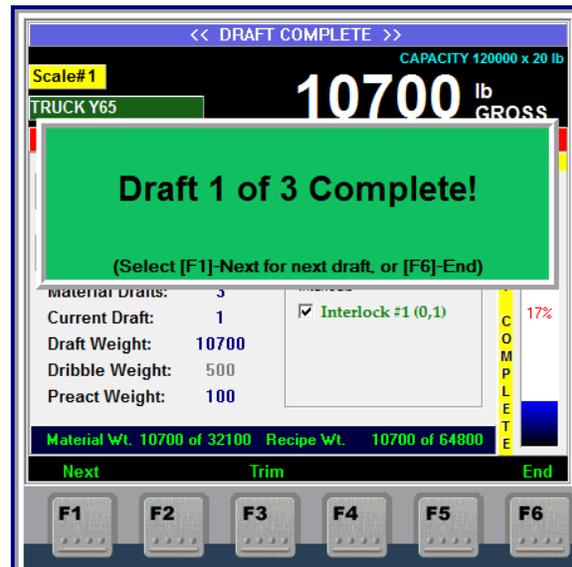
The following conditions were setup for the above-right example.

- **Slow Feed Relay** exists for the Material.

- The **Preact Weight** is **100 lbs.**

- The text displays **<< SLOW FEED >>**.

- The **Preact Target** weight is **11520 lbs**.

- The **Slow Feed Relay** remains open until the **Preact Target Weight** is reached.

3.12.   FIRST DRAFT PREACT TARGET REACHED

Once the **Preact Target Weight** is reached, the **Slow Feed Relay** closes (if opened).

— The **Trim button** appears.

1. Press and hold **F3** (**Trim**) to open the **Slow Feed**.

— Or to open the **Fast Feed**, if no **Slow Feed** exists for the selected material.

2. Release the button to close the feed.

KEY	DESCRIPTION(S)
F3 – Trim	The trim button can be used to top off the draft. When the First Draft Target weight is reached both Fast and Slow feeds are closed, the Trim button closes the slow fill relay and is used to top off the draft.
F6 – Done	If a Draft Target weight is reached, 'Done' completes the cycle processing weigh data, please wait and then return to weigh screen.

3.13.   DRAFT TARGET REACHED

When the **Draft Target Weight** is reached, the message to the right appears.

3. Press **F1** (**Next**) to start the next draft.

4. Press **F3** (**Trim**) to trim the scale.

5. Press **F6** (**End**) to terminate the Fill Cycle.

- If this is the last **Draft** of the last **Material**, **F6** (**Print**) appears in place of the **F6** (**End**) button.

3.13.1 .Subsequent Drafts

Up to four (4) **Drafts** can be applied to each Material in a Recipe.
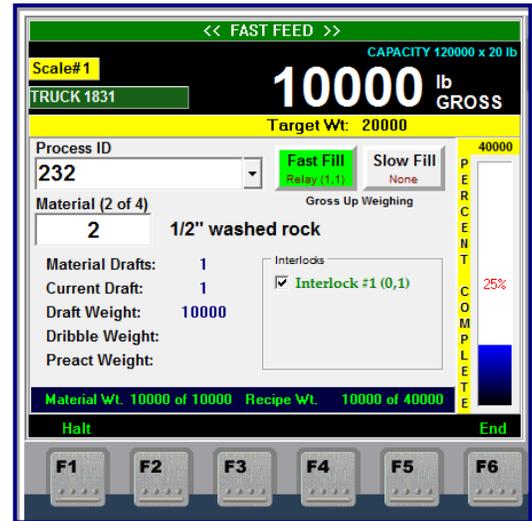
3.13.2. Subsequent Ingredients

Each Recipe can have up to four (4) **Materials**.

KEY	DESCRIPTION(S)
F1 – Next	Moves to the Next Draft or Material.
F3 – Trim	Tops off the **Draft**. — When the First Draft Target weight is reached, both Fast and Slow Feeds close. — The Trim button closes the slow fill relay and is used to top off the draft.
F6 – Print	Prints the elements of the displayed **Draft** with all its **Ingredients.**

3.14.   FILL CYCLE COMPLETE

When the **Recipe Target Weight** is reached, **FILL CYCLE COMPLETE** displays.
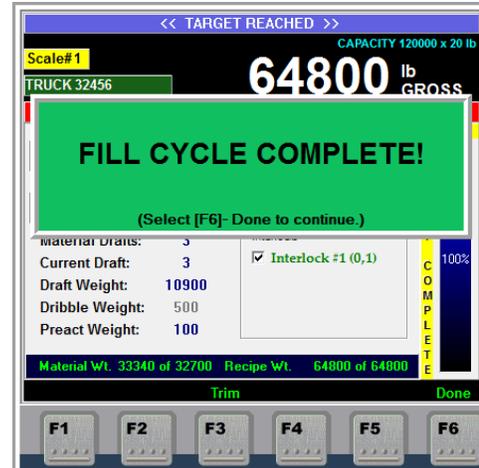
- If **Auto Print** is preconfigured, a ticket prints automatically. When each Material weight is reached.

- If this is the Last Draft of the Last Material, the system exits the **Cutoff Menu** and returns to the **Weigh Screen**.

- Press **F3** to Trim the weight, and the **Print** option appears in **F6**.

KEY	DESCRIPTION(S)
F3 – Trim	The trim button can be used to top off the draft.
F6 – End	Initiates a ticket print if a ticket has been formatted. — Same function as the **PRINT key**. Only if Print Cutoff is set to **YES**. Then, **F6=Print** is displayed.
F6 – End F6 – Print	Completes a filling process if a filling process is in progress (see [PRINT]) or exits the Filling Screen. Print is used when print cutoff is set to **YES**

When the **Draft Target Weight** is reached, the message **Draft X of X Complete** appears.

- If **Auto Print** is preconfigured, a **Draft Weight ticket** prints automatically.

- If this is the Last Draft of the Last Material, the system exits the **Cutoff Menu** and returns to the **Weigh Screen**.

- If not, more trimming is possible and the **F6-Print button** appears.

- Press **F3** to Trim the weight, and the **Print** button appears.

- If this is the Last Draft of the Last Material, the **F6-Print button** appears in place of the **F6-Done button**.

Section 4: Parts

4.1. RELAY BOX PARTS LIST (33199)

ITEM	PART NO.	QTY	DESCRIPTION
1	26583	1	ENCLOSURE, DRILLING
2	26579	1	PLATE, MOUNTING
4	26624	1	POWER SUPPLY 120 VAC INPUT, 5 VDC OUTPUT
5	26625	1	RACK (4-MODULE RACK)
6	26626	1	BRAIN, SIMPLE I/O
7	26627	1	DIGITAL INPUT MODULE, 4-CHANNEL SWITCH STATUS INPUT, NORMALLY OPEN
10	26744	1	CABLE ASSY, ETHERNET CROSSOVER (RJ45 TO RJ45)
11	34483	1	POWER CORD ASSEMBLY
13	17534	1	CONNECTOR, LIQUID TIGHT
14	12342	1	RING, "O"
15	17535	2	CONNECTOR, LIQUID TIGHT
16	15654	2	RING, "O"
17	12011	2	PLUG, NYLON
19	26633	1	FUSE 1 AMP F1
20	25312	1	HOLDER, FUSE FOR F1
22	25189	1	RECEPTACLE (FOR RJ-45)
23	25190	1	PLUG, FIELD WIREABLE (FOR RJ-45)
24	25191	1	CAP, DUST (FOR RJ-45)
26	20049	1	BLOCK, TERMINAL 6 POSITION TB1
28	10897	2	SCREW, MACH, PH, PHIL 6-32 X .62
29	10201	6	WASHER, LOCK EXT. TOOTH NO. 6
30	10908	4	SCREW, MACH, PH, PHIL 10-32 X .38
31	10203	4	WASHER, LOCK EXT. TOOTH NO. 10
32	10894	4	SCREW, MACH, PH, PHIL 6-32 X .31
33	10902	10	SCREW, MACH, PH, PHIL 8-32 X .38
34	10202	10	WASHER, LOCK EXT. TOOTH NO. 8
36	11263	3	CLIP, CABLE 3/16"
37	11175	2	BUSHING, AMPHENOL RUBBER
38	11176	2	BUSHING, AMPHENOL RUBBER
39	11267	3	CLIP, CABLE 5/16"
40	17613	6	TIE, WIRE
41	25473	18 IN	WIRE, HOOK UP, PVC STRANDED, 18 AWG, WHITE

42	25474	18 IN	WIRE, HOOK UP, PVC STRANDED, 18 AWG, BLACK
43	25475	18 IN	WIRE, HOOK UP, PVC STRANDED, 18 AWG, GREEN
NS	29856	-	Dry Output Contact Module
NS	26628	-	Digital Output Module

4.2. PARTS DIAGRAM (33199)

FB4000 IN/OUTBOUND PREDICTIVE CUTOFF

SERVICE MANUAL

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