FBD

Frozen Beverage Dispensers
EVERYONE LOVES FROZEN

MULTI-FLAVOR MERCHANDISER

INSTALLATION & OPERATION MANUAL

MODELS
372/771/772

24-M4MF-0001_03

FBD TECHNICAL SUPPORT: 866-323-2777 or www.fbdfrozen.com

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1. SAFETY

1.1 Electrical

This accessory must be properly installed according to the instructions in this manual. Proper installation will ensure that the accessory is properly grounded and prevent possible fatal electric shock or serious injury to the operator. Before attempting any internal maintenance, disconnect electrical power to the dispenser to prevent personal injury. Only qualified personnel should service internal components or electrical wiring.

1.2 General Precautions

This equipment, depending on the accessory, can weigh up to 25.6 pounds (11.6 kilograms). To avoid personal injury or equipment damage, do not attempt to lift the merchandiser without help. Working with a partner is highly recommended. Take care when lifting and positioning the merchandiser to avoid damage and injury.

2. SPECIFICATIONS AND REQUIREMENTS

2.1 General Requirements

The merchandiser is compatible with only the dispenser that corresponds to its merchandiser series, and will not function properly if installed onto a dispenser outside of that series. The 771 and 772 multi-flavor dispensers belong to the 77x series and therefore use the same merchandiser model; whereas, a 372 multi-flavor merchandiser should only be installed on a 372 dispenser.

2.2 Dimension and Weight Specifications

Unit	Door Type	Width	Depth	Height	Weight
372 MFLV	Short Door	15.75" (400 mm)	2.2" (56 mm)	13.5" (342 mm)	8.7 lb (3.9 kg)
771 MFLV 772 MFLV	Short Door	17.0" (432 mm)	2.9" (74 mm)	15.6" (396 mm)	12.9 lb (5.9 kg)
	Tall Door			23.1" (587 mm)	18.9 (8.6 kg)
	Video Door			26.0" (660 mm)	25.6 lb (11.6 kg)

2.3 Content Specifications

Media Type	Supported File Formats	Resolution (W x H in pixels)				
		372 MFLV	771 MFLV	771 MFLV Video Door	772 MFLV	772 MFLV Video Door
Base Flavor & Add-in Flavor Images*	PNG	600 x 500	600 x 500	600 x 500	600 x 500	600 x 500
Background Image(s)†	PNG, JPEG	800 x 480	1920 x 1080	1080 x 640	950 x 1080	535 x 640
Video Area‡	MP4, MOV, PNG, JPEG	N/A	N/A	1080 x 1280	N/A	1080 x 1280

* Flavor images automatically scale without distortion.

† Use exact sizes for the background images. Graphics will be stretched and distorted if the size is incorrect.
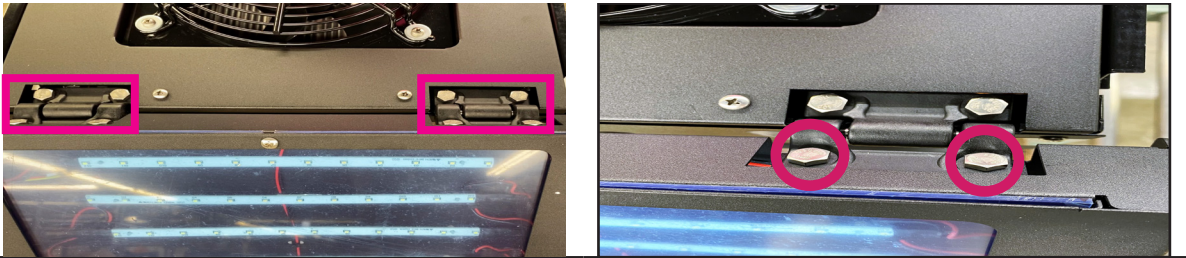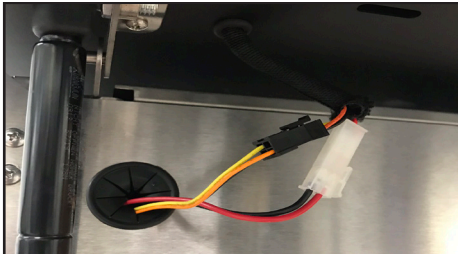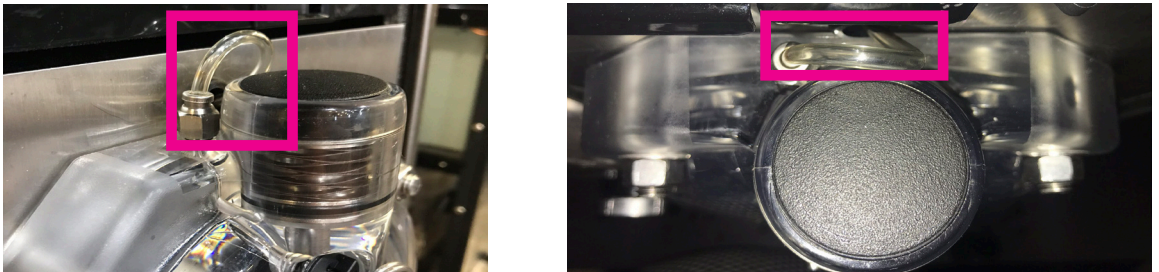
‡ The video area can display either a video or static image. Use exact sizes. Content will be stretched and distorted if the size is incorrect.

3. INSTALLATION

The following installation instructions apply to merchandisers that are not already installed on dispensers upon arrival. Since the merchandiser receives power from the dispenser and communicates with the main control board, it is important that power and serial harnesses be connected correctly during installation.
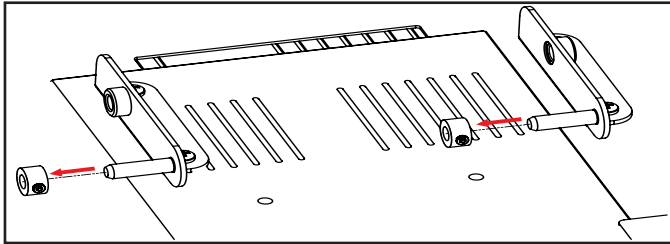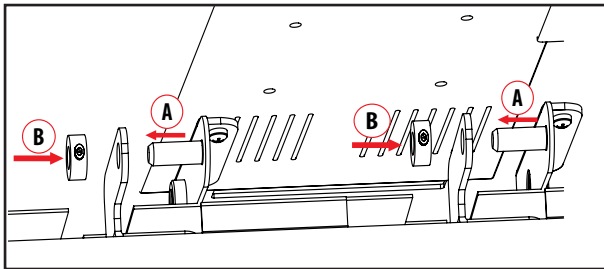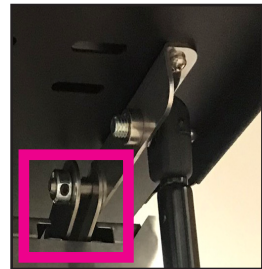
3.1 Installation of 372 Multi-Flavor Merchandiser

1	Remove the merchandiser from the packaging and inspect it for damage or missing parts.
2	Align the merchandiser hinges with the bolt holes located at the top-front of the dispenser, and secure all hex bolts through the hinge and into the frame.
3	Connect the door power and serial communication harnesses to their respective mate on the dispenser (black connector with black connector, white connector with white connector).
4	Push the merchandiser down until it snaps into place. Ensure that the pneumatic faceplate's activation hose stays looped and is not pinched when the merchandiser is closed.
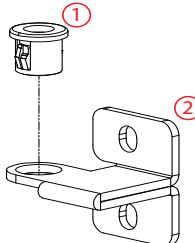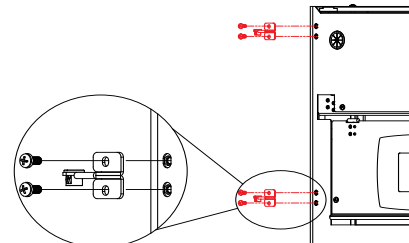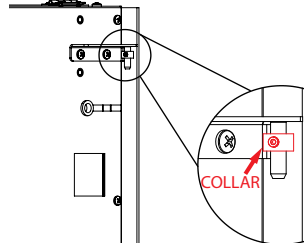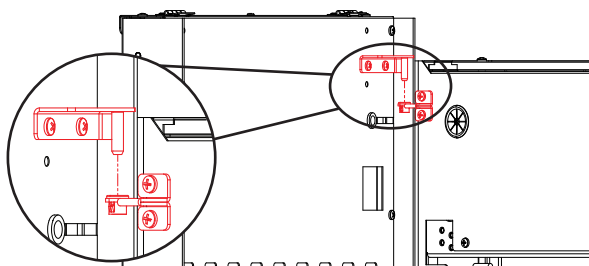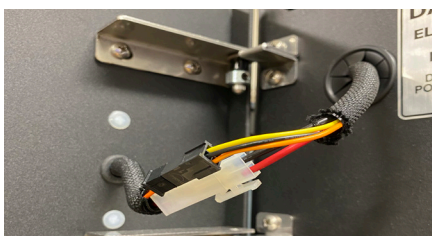
3.2 Installation of 771/772 Top-Opening Multi-Flavor Merchandiser

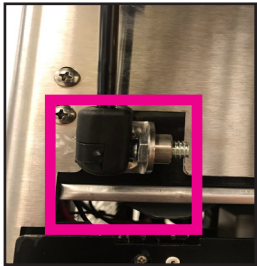| 1	Remove the merchandiser from the packaging and inspect it for damage or missing parts.
2	Remove the collar from each of the brackets on the merchandiser with a 3/32" hex wrench. Place the collars and wrench nearby so they are accessible for the next step.
3	As shown in figure below: (A) slide each of the hinge pins from the merchandiser into the pivot holes on the upper brackets on the dispenser (from right to left); (B) place the collars back on the hinge pins and tighten the set screw on each of the shaft collars with the hex wrench.
4	Snap the shocks securely onto the ball joints on the front of the dispenser.
5	Connect the power and serial communication harnesses to their respective mate from the dispenser (black connector to black connector, white connector to white connector). Slowly push the merchandiser down into "closed" position.

3.3 Installation of 771/772 Side-Opening Multi-Flavor Merchandiser

1	Remove the merchandiser from the packaging and inspect it for damage or missing parts.		
2	Add the snap ring (1) to the bracket (2).	3	Install the hinge brackets on the front of the dispenser. Ensure the snap ring faces toward the outside of the dispenser.
4	Use a 3/32" hex wrench to loosen and remove the collar from the hinge bracket located on the back of the door. Repeat on lower bracket. Place collars nearby so they are accessible to add back to the brackets once the merchandiser is connected to dispenser.		
5	Align the door hinge bracket pins to the holes on the dispenser's hinge bracket. Place the collar back on the hinge pin and tighten the set screw with a hex wrench.		
6	Connect the power and serial communication harnesses to their respective mate from the dispenser (black connector to black connector, white connector to white connector) and close the merchandiser until it snaps into place.		

4. MULTI-FLAVOR MERCHANDISER DISPLAY

4.1 Start-Up

Once the dispenser has been powered on, the digital screen will begin to boot. The display's backlight will activate and will be followed by the FBD logo. It may take up to thirty seconds for the display to fully load. Once the boot sequence is complete, the FBD logo will be replaced by the multi-flavor interface (shown below). The message on the interface will vary depending on the state of the dispenser (i.e. if the barrel is off, the message will be "Barrel Off"; if everything is connected and running, then the message will be "Touch Flavors!").
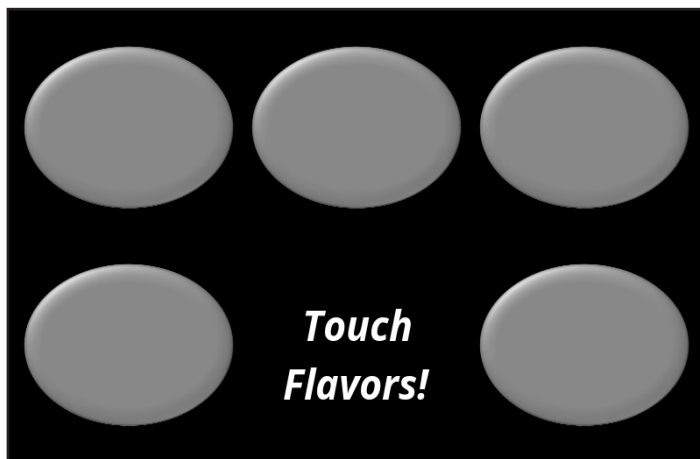
Interface for 372 MFLV and 771 MFLV
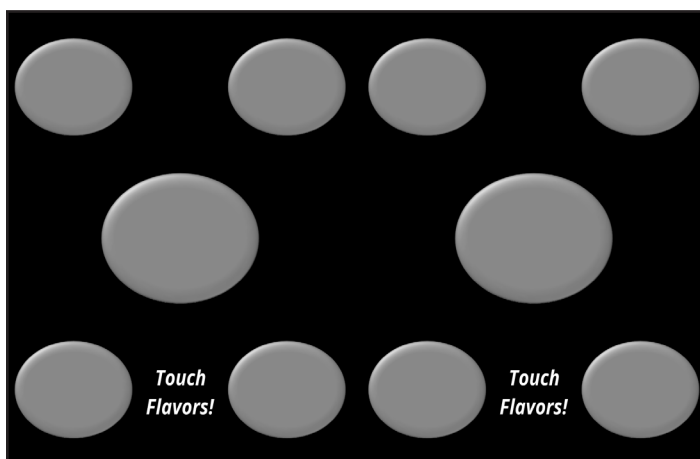
Interface for 772 MFLV

Interface for 772 MFLV Video Door

4.2 Screen Layout

The multi-flavor setup allows the user to add one or more flavors to dispense with the base flavor in the barrel. The user can select any variety of flavors; each flavor will be marked as it is selected. When one or more is selected, the POUR button will appear to indicate that a drink is ready to be dispensed. The dispenser will continue to pour for as long as the POUR button is held. If the POUR button is pushed without any flavors selected, only the base flavor will dispense. In addition to displaying the flavor images, the screen will also show status messages.

The flavor messages are displayed as image overlays. When the status message appears, the flavor image will be obscured so that the message can be seen. There are two flavor messages: "Selected" which is displayed when that flavor has been selected for dispensing and "Sold Out" which is displayed when a flavor syrup is out.

The status messages will appear at the bottom-center section of the display. These messages will provide status information for the barrel. For a list of all status messages, please refer to Section 7 of this manual.

After flavor selections are made, the status message area of the display will change to a "PUSH TO POUR" button.

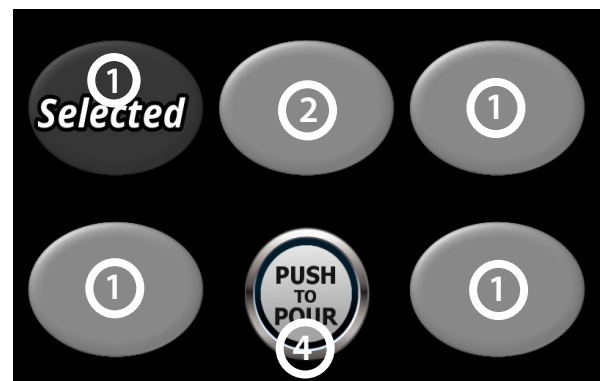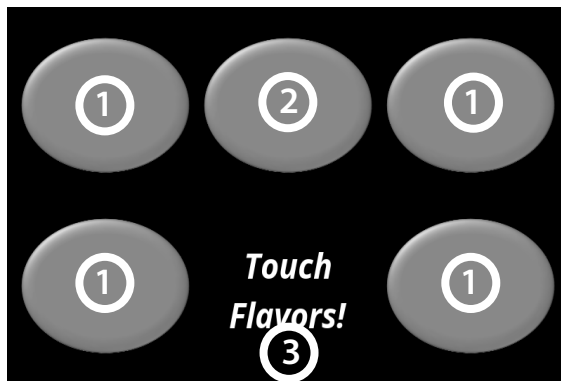| Item	Description
1	Flavor Buttons: Select flavor add-ins. Flavor messages will appear over flavors as image overlays.
2	Base Flavor Button: Flavor of the base syrup.
3	Barrel Status: Shows status of barrel.
4	Pour Button: Press and hold to dispense a drink.
5	Video Portion: Displays video (see **Section 4.1**)

4.3 Initial Set-Up

The flavor images will need to be set as part of the initial set-up of the merchandiser. Please refer to Section 5.1 for additional information on menu options and Section 5.2 for additional information on updating the images for the flavors (flavor add-ins and base syrup). Additionally, all flavor injection modules will need to be calibrated before the dispenser is ready for store operation. Please refer to Section 5.8 for additional information on calibrating flavor modules.
All other door and dispense settings will be pre-configured.

5. MENU STRUCTURE

5.1 Accessing Menus

The multi-flavor merchandiser allows the user to change the visual content displayed on the interface and the functionality of the multi-flavor barrel through the service menus. The menu is locked and not accessible to consumers but, once opened by authorized personnel, can be used to change visual content, barrel settings, and data management. Follow the steps below to unlock the screen.

1	Start by touching any of the four corners and trace around the edges of the display without lifting your finger in a clockwise or counterclockwise direction until coming back to the corner where you started.
2	Enter the store operator, store manager, or service technician password. Please note that the merchandiser has been set up with default passwords for store operators and store managers. A password can be changed, if desired, through the service technician access level.
3	Once the screen has been unlocked, the menu options will appear. There are three levels of access and the available options will vary based on the password used. Please refer to the Menu Options by Access Level table in this section for a breakdown of available menus. Additionally, every screen will also show a back or home button to navigate through the menus.

MENU OPTIONS BY ACCESS LEVEL	
LEVEL	**AVAILABLE MENUS**
Store Operator	**Change Graphics** — Configure flavor buttons and background images. Option available to sample dispense to verify flavor(s) selected.
	Change Video — Configure content on video portion of display. Either a video or a static image can be selected.*
	Clean Display — Temporarily disables the touchscreen so the display can be cleaned.
	Information — View information menu. Lists door software, settings, dispense software, part numbers, serial number, and legal information.
	Status — Shows status of connected devices such as USB drives, accelerometer, and dispenser communication. Icon will change based on the overall state.
Store Manager	• Same options as store operator.
	Alternative Flavor Lockout — Lock/unlock alternative flavors.
Service Technician†	• Same options as store manager.
	Configure Flavors — Configure flavors - Set up add-in flavor types and calibrate their flow rates.
	Settings — Access to door and dispense settings.
	DRAFT SERV — Used to configure settings, view status, and diagnose DRAFTSERV®. DRAFTSERV® is a third party add-on tool that is disabled by default. DRAFTSERV® is a registered trademark of DraftServ Technologies, LLC. For additional information, contact FBD Sales.
	Dispense Data — View drink dispense data.
	System Administration — System administration controls. Controls other settings and parts of the interface functionality such as passwords for store operators or managers.

*Option only available for video doors.
† Intended for use by trained service technicians only.

5.2 Change Graphics

The "Change Graphics" menu allows the operator to update the flavor and background images displayed on the main user interface. This menu is available to the store operator, store manager, and service technician. Once selected from the menu screen, please follow the steps below to change the images.

1	Select the graphic element to change (flavor or background) on the layout found on the top left side of the screen. When a graphic element is selected, it will be highlighted by a blue box and its description will be listed below the layout. Two tabs are located on the right of the menu. The filter tab (left) is used to select a pre-configured filtering option. If no filters are found, then only the "All Images" filter will be shown. The image gallery tab (right) displays the filtered images available to choose from. Touch the desired image from the scrolling image gallery on the right. Available images found in the image gallery are based on the selected element. Additional images can be added using a USB drive. Refer to Section 6 for information on adding media to the merchandiser. Repeat process for each element.
2	Once a graphic element is selected, a preview of the image selection will be shown.
3	Background images may be chosen from the image gallery on the right, or solid background colors can be selected by pressing the "Select Custom Background Color" button on the bottom left side of the screen. A color selection window will appear. Once a color is selected, the text on the top left side will change to match the selected color. Press the green check mark to return to the previous screen and a preview of the selected color will be shown.
4	Once all flavor and background images are set, press the green check mark to save the settings. The images may take several seconds to load. Alternatively, press the red X to cancel changes. WARNING: Older software revisions may not have the option to cancel changes and will not show the check mark or red X. Instead, the back and home icons will be visible; press either to save the changes.
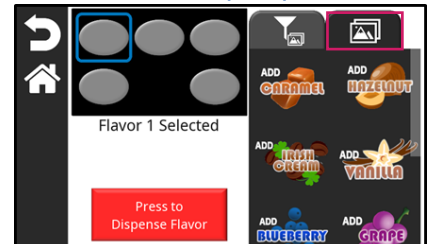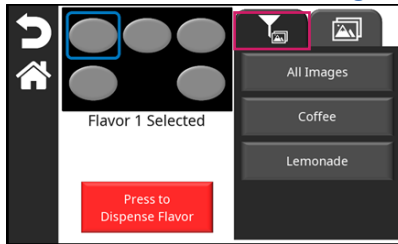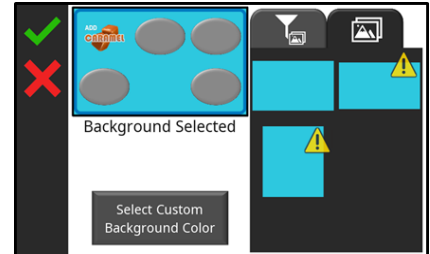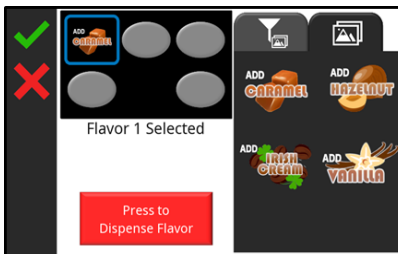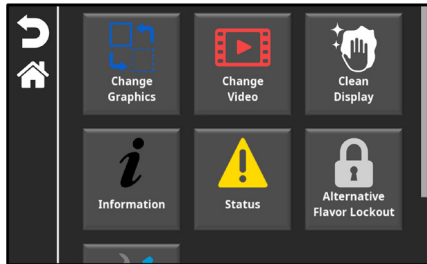
5.3 Change Video

The "Change Video" menu allows the operator to update the content displayed on the video portion of the door for merchandisers with video capabilities. Either a static image or video can be used. This menu is available to the store operator, store manager, and service technician. Once selected from the menu screen, please follow the steps below to change the images.

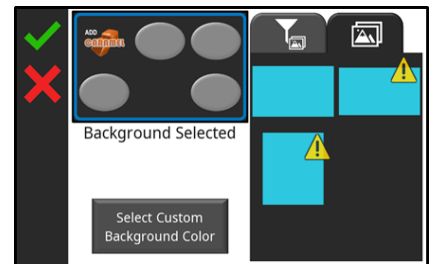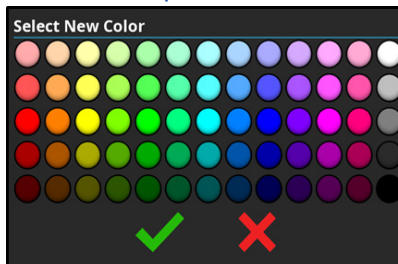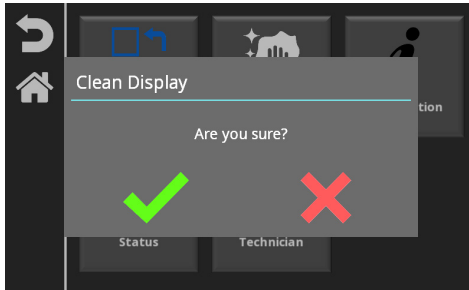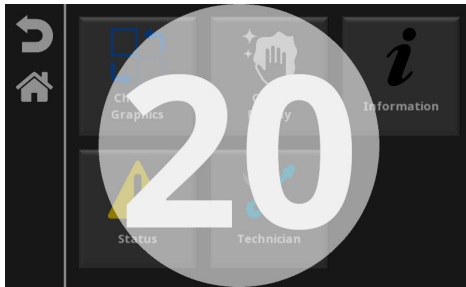| 1	Upon entering the menu, a scroll box of available images and videos will be shown. The following symbols may be superimposed on the items:
	▶ Video Files
	🖼 Image Files
	❌ Files that either have an incorrect aspect ratio or are too large in resolution (greater than 1920 pixels).
	⚠ Video files that are too short in duration (less than 4 seconds).
2	Select a desired video or image. A preview of the video or image will appear in the video area. Please note that videos and images with a red X should not be used. Videos with yellow yield sign can be used but they will be converted to a static image.
3	Complete setup by pressing the green check mark in the upper left corner to save the setting. Alternatively, press the red X to cancel changes.
4	Additional videos and images can be added using a USB drive. Refer to Sections 6.1 and 6.2 for more information.

5.4 Clean Display

The "Clean Display" menu disables the screen's touch function to allow the user to clean the display. This menu is available to the store operator, store manager, and service technician.

1	Once selected, a dialog box will appear to verify that the clean display option is being requested. Select the green check mark to initiate the clean display mode.
2	A 20 second timer will appear. The screen will be unresponsive to touch during the timer countdown.
3	Apply glass cleaner to a soft, lint-free rag and wipe down the screen. Once the timer runs down, the screen will reactivate.

5.5 Information

The "Information" menu displays details about the door software and dispenser firmware. This menu is available to the store operator, store manager, and service technician. The information in this menu is useful when contacting FBD Technical Support for troubleshooting. The menu also provides a "View Licenses" button that, when selected, will provide a QR code which will direct users to a website with legal information.
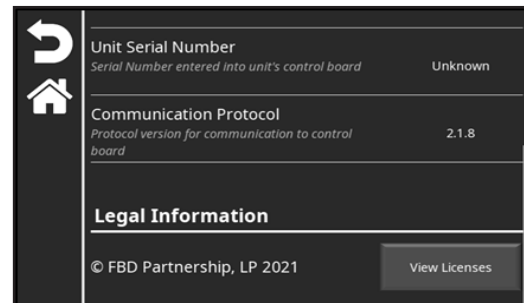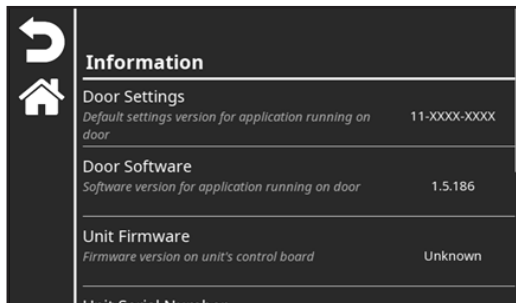
5.6 Status

The "Status" menu provides the status information useful for diagnostics. This menu is available to the store operator, store manager, and service technician. When selected, the diagnostic tool can help verify each of the following:

- Communication: A green check mark indicates an active connection between the dispenser and merchandiser. A red X indicates there are connection issues or there is no communication.

- USB Drives: The merchandiser can detect if a USB has been connected. A green check mark indicates the merchandiser detects a USB drive. A yellow triangle indicates there is no USB detected. A yellow triangle displayed for this option is normal, and only indicates a problem if it continues to be shown while a USB is connected.

- Accelerometer: The accelerometer is used to detect the orientation of the door. When the door is open, the down-lighting will turn off automatically and turn back on when the door is closed. A green check mark indicates the accelerometer is working. A red X indicates there is a problem with the accelerometer.
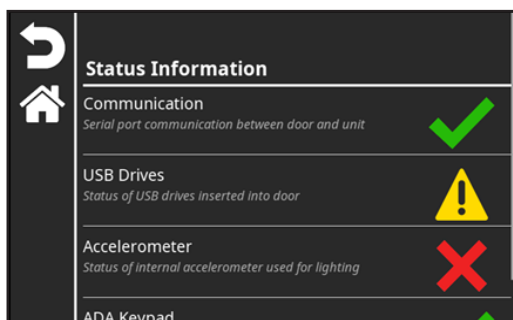
5.7 Alternative Flavor Lockout

The "Alternative Flavor Lockout" can prevent any flavor set up as an "alternative" flavor from being dispensed. This icon will only be shown in the menu when at least one alternative flavor has been set up under the "Configure Flavors" menu option (please refer to Section 5.8 for additional information on setting up flavor types).

This option is available only to the store manager and service technician. The icon will appear for store operators if there are any alternative flavors set up and, when selected, the screen will prompt for a password to be entered. Only the store manager or service technician passwords can enable or disable the lock.

When the lockout is engaged (closed lock), any flavor set up as an alternative flavor will appear as locked on the main screen and cannot be selected to dispense with the base product. When the lockout is disengaged (open lock), the alternative flavors can be dispensed as normal. To engage, simply select the icon; the image will change from an open lock to a closed lock. To disengage, select the closed lock icon and the image will change to an open lock.

Engaged Lock
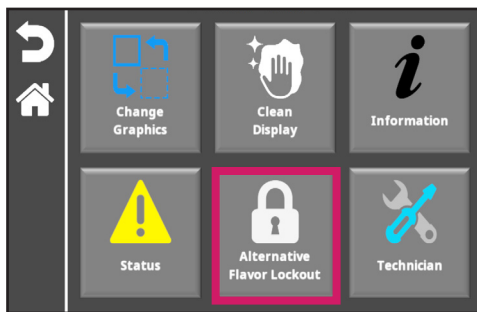
Disengaged Lock
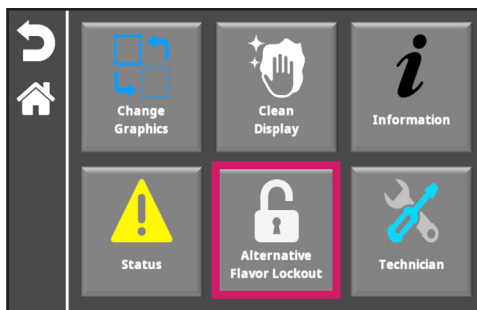
5.8 Configure Flavors

The "Configure Flavors" menu is used to change flavor types and perform flow rate calibrations for flavor syrups. This menu is only available to service technicians. Once selected, there are two tabs that can be accessed: "Flavor Types" and "Calibrate Flavors." The "Flavor Types" option is not required to be set up for operation of the dispenser, however, the "Calibrate Flavors" option must be completed as part of the initial set-up.

Flavor Types

This menu allows you to specify the type of flavor for each of the flavor add-ins. The default type is "Standard." If a flavor needs to be locked from dispensing on the main screen, then it will need to be changed to "Alternative." Please refer to Section 5.7 for information on how to lock alternative flavors. The flavor can also be set to "Disabled" which will remove it completely from the user interface.

If the flavor images have not been set, the screen will show the blank buttons for each of the flavors. Tapping the blank flavor button will open the "Change Graphics" menu (Section 5.2) and allow you to change the flavor images. Once images are selected, press the back button to return to the "Flavor Types" screen and the updated flavor images will be shown.
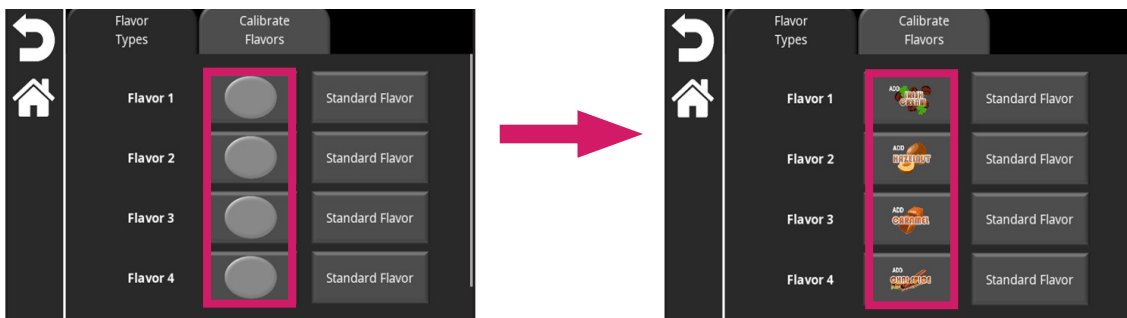
If any of the flavors need to be changed from "Standard Flavor" to "Alternative Flavor" or "Disabled," press the "Standard Flavor" button next to the corresponding flavor. A drop-down menu will appear. Select the desired flavor type. Repeat as needed for each of the flavors.
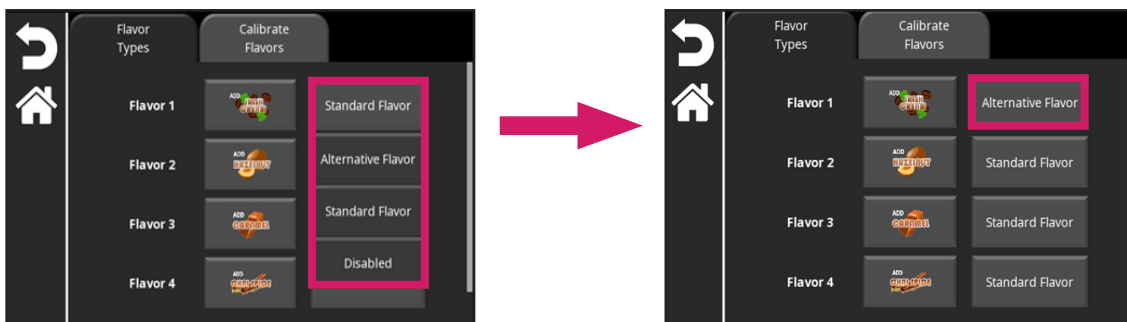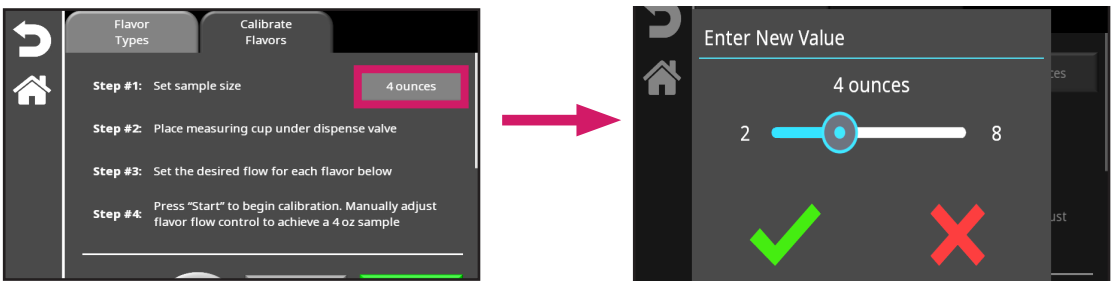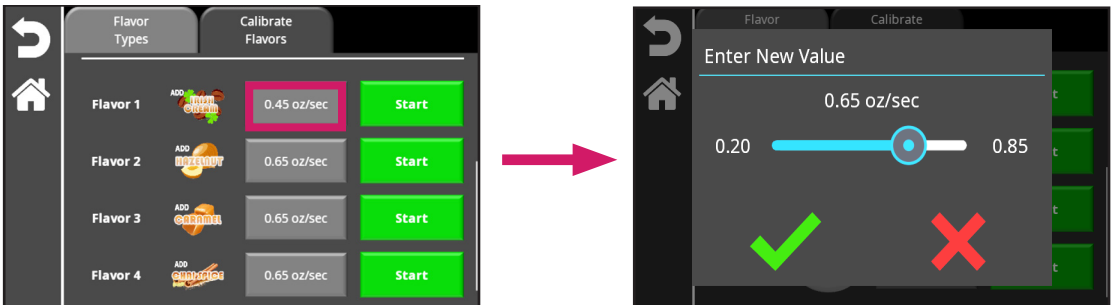
Calibrate Flavors

The flavor injection modules must be calibrated before the dispenser is ready for store operation. The calibration procedure requires access to the product tray. Before beginning the procedure, remove the drip tray, splash plate, and front cover to access the flavor modules.

1	From the "Calibrate Flavors" tab, select the "ounces" button in "Step #1" to set the desired sample size. On the pop-up window, move the slider to the desired value, and press the green check mark to confirm the selection. This value will be the sample size used to validate the amount dispensed during calibration. Select a sample size that is easy to verify with the tools at hand.
2	To configure the desired flow rate, scroll down and tap the "oz/sec" button for the flavor being calibrated. On the pop-up window, move the slider to the desired value and press the green check mark to confirm the selection.
3	Place a measuring cup under the faceplate and press the "Start" button to dispense the product. Measure the amount of product dispensed and compare to the set "Sample Size" from Step 1. If the amounts match, the module is correctly calibrated. If the amounts do not match, the flavor module will need to be manually adjusted.
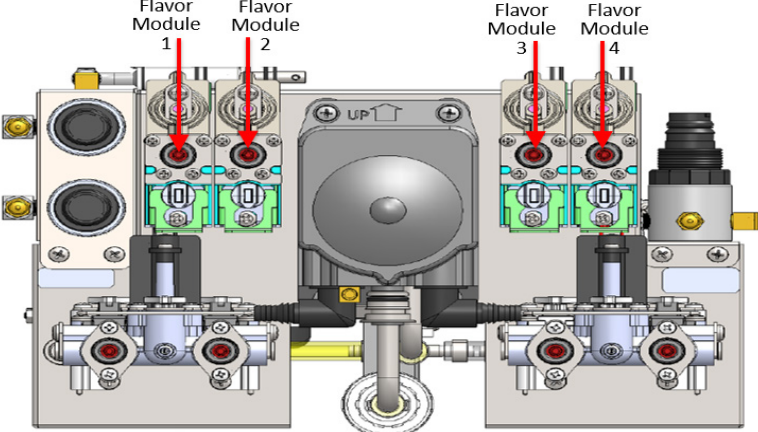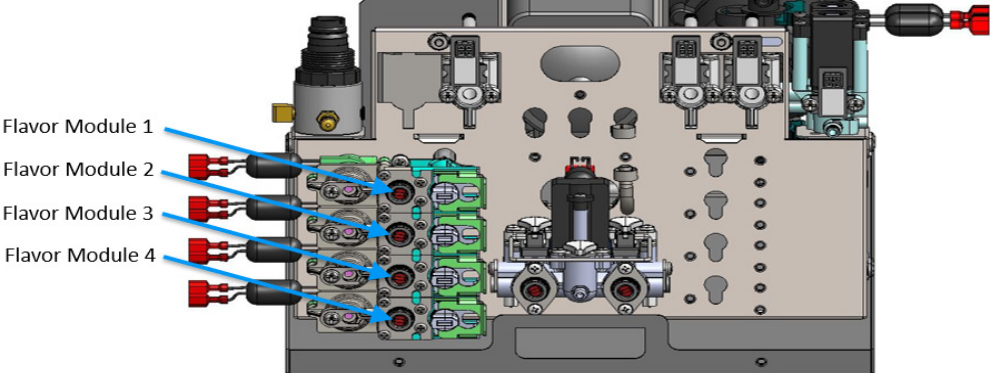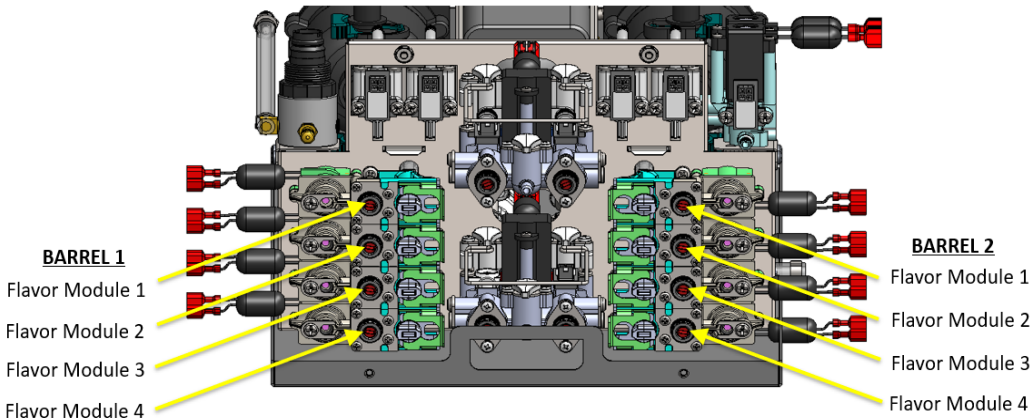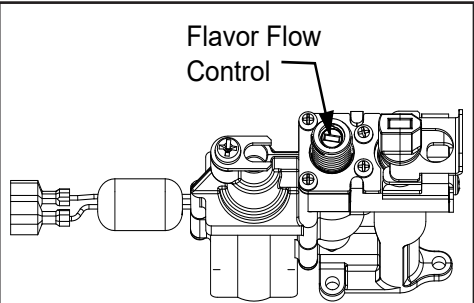
4	To adjust the flavor module manually, access the product tray and locate the flavor modules. The flavor modules are located in the front of the product tray as shown below by model.
372 MFLV	
771 MFLV	
772 MFLV	

5	Adjust the flow rate on the flavor module using a flathead screwdriver. Turn clockwise to increase the flow and counterclockwise to decrease the flow.
	Flavor Flow Control **Flow Rate Adjustment** Turning Clockwise Increases Flow Rate Turning Counterclockwise Decreases Flow Rate + −
6	Once the flavor module has been adjusted, press the "Start" button to dispense a sample. Continue adjusting the flavor module manually and dispensing a sample until the amount of the product dispensed matches the "Sample Size" from Step 1.
7	Repeat the calibration process for each remaining flavor.

5.9 Settings

The "Settings" menu allows the user to make changes to the consumer interface, dispense settings, and other miscellaneous settings. This menu is only available for service technicians. All these settings should be preloaded but can be updated manually through this menu or via USB drive (refer to Section 5.11 under the "Settings" category for information on loading settings to or from a USB drive). Once selected, there are three tabs that can be accessed: "Consumer Interface," "Dispense Settings," and "Miscellaneous Settings."

Consumer Interface

The "Consumer Interface" tab provides language configuration and text color options for flavor overlays and messages.

To change the language, select the "English" button to display a drop-down menu of all supported languages. Once the language is selected, all menu options and main screen messages (flavor and barrel status) will change to the selected language.
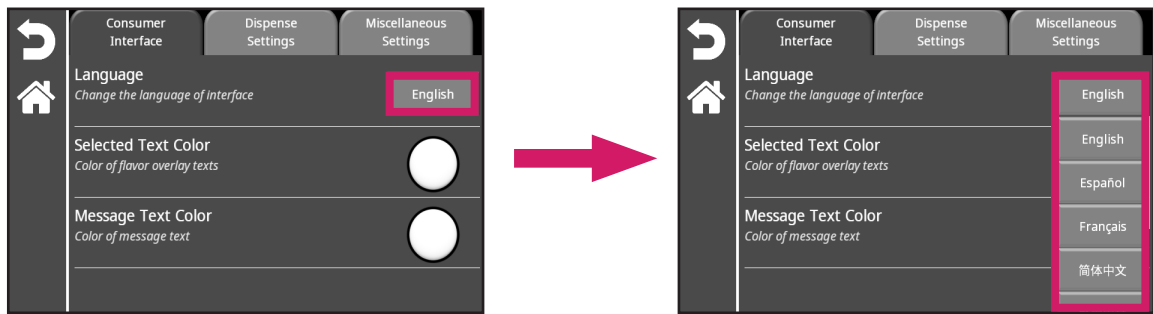
To change the text color of the flavor messages (the message that appears as an overlay on the flavor button in the main screen) select the round button to the right of the "Selected Text Color" option. A color selection pop-up window will appear; once a color is selected, press the green check mark to confirm the selection. The round button on the "Selected Text Color" option will change to the selected color.
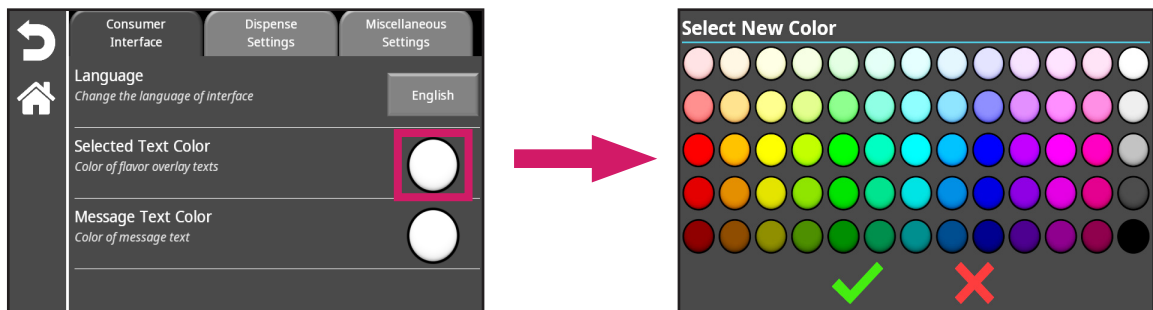
To change the text color of the barrel status messages on the main screen, select the round button to the right of the "Message Text Color" option. A color selection pop-up window will appear; once a color is selected, press the green check mark to confirm the selection. The round button on the "Message Text Color" option will change to the selected color.
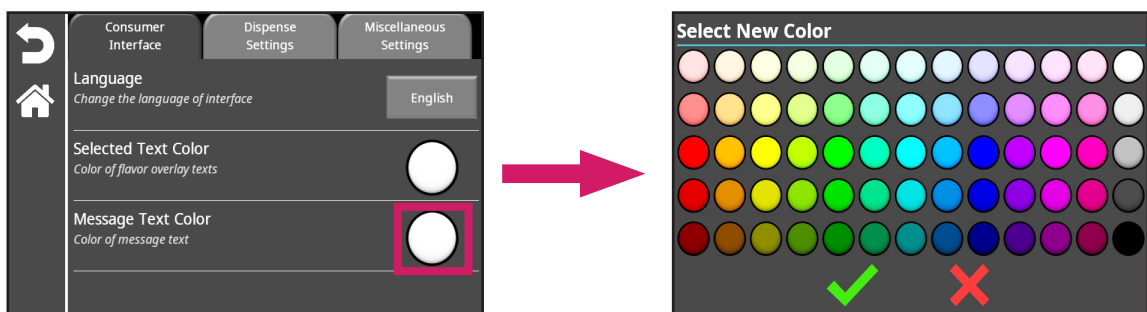
Dispense Settings

The "Dispense Settings" tab provides options related to how a drink is dispensed. Refer to the table below for additional information on each option. Sections 9.1, 9.2, and 9.3 provide examples of various dispense settings.
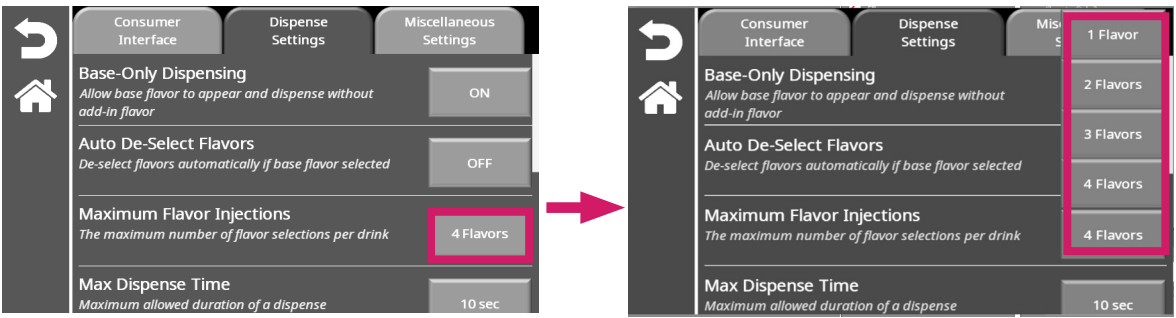
Item	Description
1	Base-Only Dispensing: Shows/hides the base flavor on the main screen. When "ON," the base flavor will appear on the main screen, allowing the base flavor to dispense by itself without any flavor add-ins. When "OFF," the base flavor will not appear on the main screen and a flavor add-in must be selected to dispense a drink.
2	Auto Deselect Flavors: Enables/disables deselecting flavor add-ins when the base flavor is selected. When "ON," selecting the base flavor will automatically deselect the add-in flavors. When "OFF," flavor add-ins will remain selected if the base flavor is selected. The "Base-Only Dispensing" must be ON in order to use this option.

Dispense Settings Continued
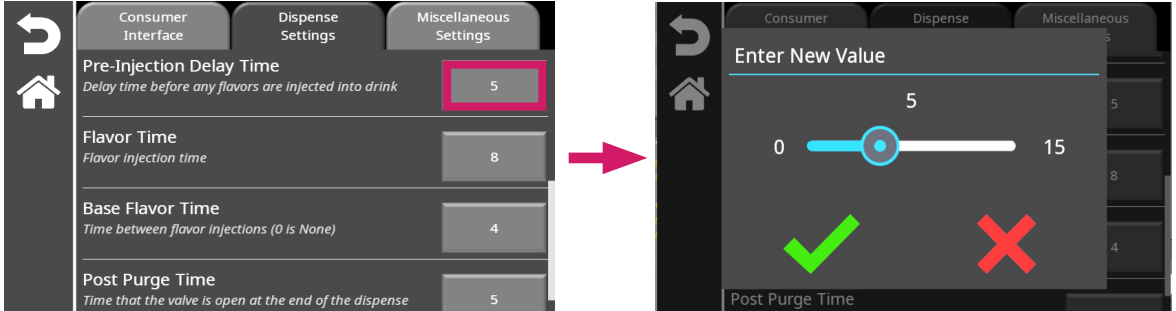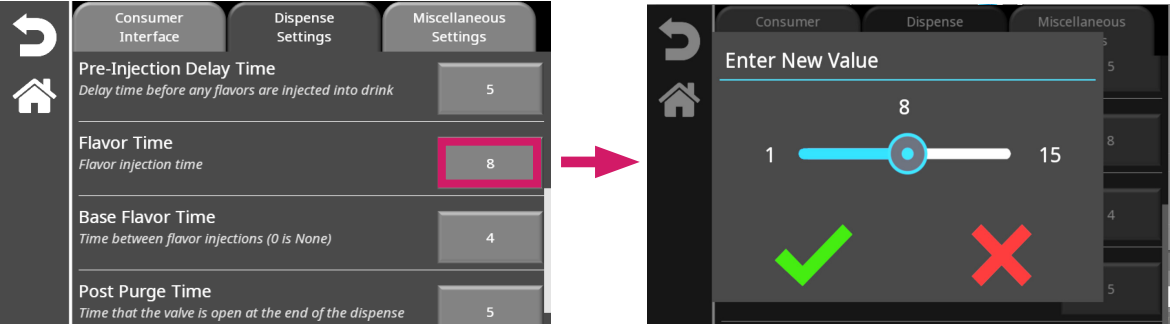
Item	Description
3	**Maximum Flavor Injections**: Sets the number of flavor add-ins that can be dispensed with the base flavor. Select the button next to the option and a drop-down menu will appear that allows the user to choose between 1 to 4 flavors.
4	**Max Dispense Time**: Sets the maximum time that a drink will dispense. Select the button next to the option and a pop-up window will display a slider bar that allows the user to set the time. Once a number has been selected, press the green check mark to confirm the selection. All drink dispenses are controlled by this time limit. Dispensing will stop after the set time, even if the dispense button is still pressed.

Dispense Settings Continued
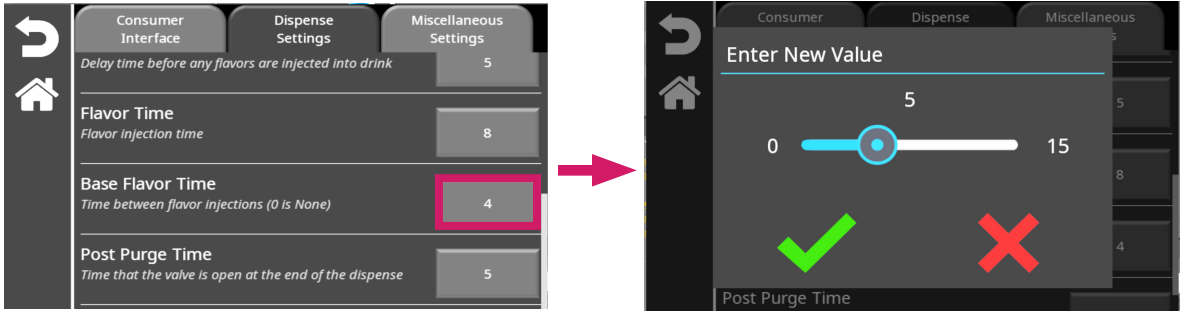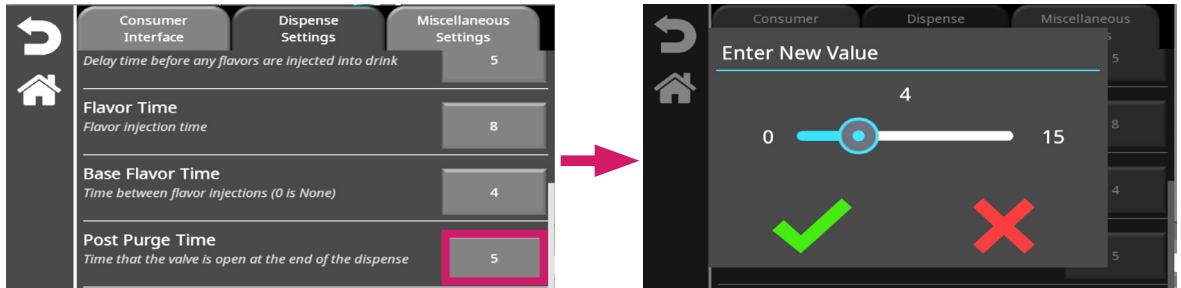
Item	Description
5	Pre-Injection Delay Time: Sets the time delay before flavor shots are dispensed into the product. Select the button next to the option and a pop-up window will display a slider bar that sets the time. Once a number has been selected, press the green check mark to confirm the selection.
6	Flavor Time: Sets the time that flavor shots are dispensed into the product. Select the button next to the option and a pop-up window will display a slider bar that sets the flavor dispense time. Once a number has been selected, press the green check mark to confirm the selection. Please note that this option only sets the number of seconds the flavor shots are dispensed into the product. To set the rate at which a flavor is dispensed (oz/sec), each flavor must be calibrated as shown in Section 5.8.

Dispense Settings Continued

Item	Description
7	<u>Base Flavor Time</u>: Sets the time between flavor injections when multiple flavors are dispensed with the base flavor. Select the button next to the option and a pop-up window will display a slider bar that sets the time. Once a number has been selected, press the green check mark to confirm the selection.
8	<u>Post Purge Time</u>: Sets the time the dispense valve remains open after the dispense button is no longer being pressed (post purge). The post purge continues dispensing the base product for the selected time to clear any remaining flavor syrup from the nozzle. Select the button next to the option and a pop-up window will display a slider bar that sets the time between 0 to 15. Once a number has been selected, press the green check mark to confirm the selection.

Miscellaneous Settings

The "Miscellaneous Settings" tab displays additional settings. Refer to the table below for additional information on each setting.

Item	Description
1	Units of Measure: Changes the units of measure used throughout the various menus. Select the button next to the option and a drop-down menu will appear that allows the user to select between Metric or Imperial.
2	Door Lighting: Allows for merchandiser lights (top and down-lighting) to be set to ON, OFF, or AUTO. When ON is selected, the lights will be on at all times. When OFF is selected, the lights will be off at all times. When AUTO is selected, the lights will be on when at least one barrel is ready to dispense, and will turn off when none of the barrels are ready to dispense. Additionally, while on AUTO, the down-lighting will turn off any time the door is opened (lifted up). The behavior of the door lighting relies on this setting and a functioning accelerometer (refer to Section 5.6 for accelerometer status information).
3	Demo Mode: Turns the "Demo Mode" ON or OFF. Demo mode is intended to be used for demonstration purposes only. While in "Demo Mode" the dispenser will not dispense any product. When turned on, the text for that option and the button next to it will turn red to show the dispenser is in "Demo Mode." This setting automatically resets to OFF when the merchandiser is rebooted/power cycled.

Miscellaneous Settings Continued

Item	Description
4	<u>Dispense Data Logging</u>: Enables/disables dispense data recording. When turned ON, the system will log flavors selected and drinks dispensed. Please refer to Section 5.10 for additional information on dispense data.
5	<u>Select-All Flavor Button</u>: Converts the fourth add-in flavor button to a "select all" option. This setting is only available on 372MFLV and 771MFLV merchandisers and can only be used when three flavor add-ins are set up. When ON, selecting the fourth flavor add-in image will choose all three flavors at once. When OFF, the fourth flavor image will act as a standard add-in that can be selected individually. When set to ON the first time, the fourth flavor add-in will change to a gray bubble. The image can be updated by going to the Change Graphics menu option (Section 5.2). While enabled (ON), the "Configure Flavors" menu option will only show three flavors to configure. When enabling/disabling this option, the application will restart and take 20-30 seconds to reload.
6	<u>Inject Alternative Flavors Together</u>: When multiple alternative flavors are selected, they will dispense simultaneously instead of separately. This option will always remain ON.

5.10 Dispense Data

This menu provides data on dispensed drinks. The data is displayed as a list or a graph, depending on the selected tab. This menu is only available to service technicians and will only be visible if the "Dispense Data Logging" option is enabled in the "Settings" menu under the "Miscellaneous Settings" tab (refer to Section 5.9). Once enabled, the merchandiser will record dispense data and save a log to the MicroSD card in the door, which can be transferred to a USB (refer to Section 5.11 under the "System" category for more information). Once selected, there are two tabs that can be accessed: "Summary" and "Drink Combinations."

Note: The merchandiser will only record data for multi-flavor barrels. Data from standard barrels will not be recorded.

Summary

The "Summary" tab displays dispensed drinks for a specific barrel and a time frame. For 772MFLV dispensers, the barrel button on the right can be used to switch between barrel 1 data and barrel 2 data.

The log's time frame can be changed by selecting the time frame button and choosing Daily, Weekly, Monthly, or Yearly from the drop-down menu.

Change Barrel   Change Time Frame

Time Frame	Drinks
6/29/2020	1
6/22/2020	13
6/15/2020	15
6/8/2020	6
6/1/2020	0
5/25/2020	1
5/18/2020	1
5/11/2020	0
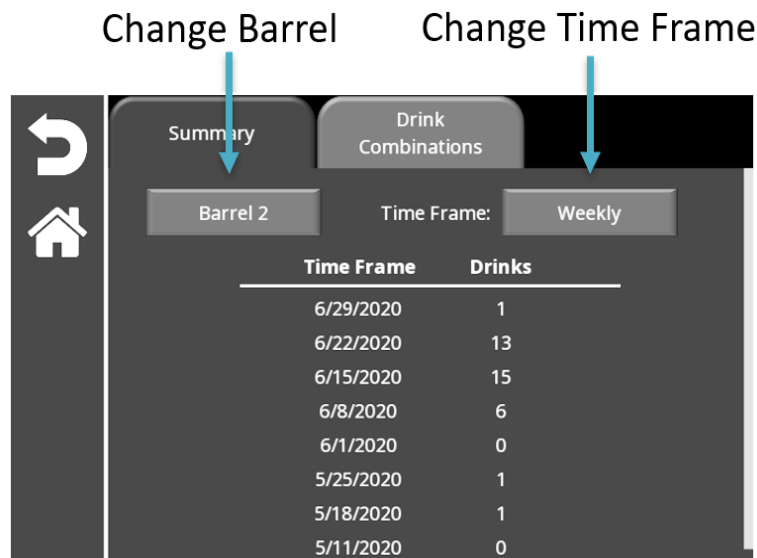
Drink Combinations

The "Drink Combinations" tab graphs the number of dispensed drinks by flavor add-in combination. As with the "Summary" tab, there is a barrel button for switching between barrels. This menu allows the user to choose a start and end date by selecting each button and choosing a date from the provided calendar. If an "End Date" that is earlier than the "Start Date" is selected, no data will be displayed.

The Dispensed Drinks graph assigns a number to each of the flavors that were dispensed and provides a legend at the top of the graph. On the left side (Y-axis), the graph shows the flavor combinations by the assigned number and the bottom (X-axis) shows the number of drinks dispensed.
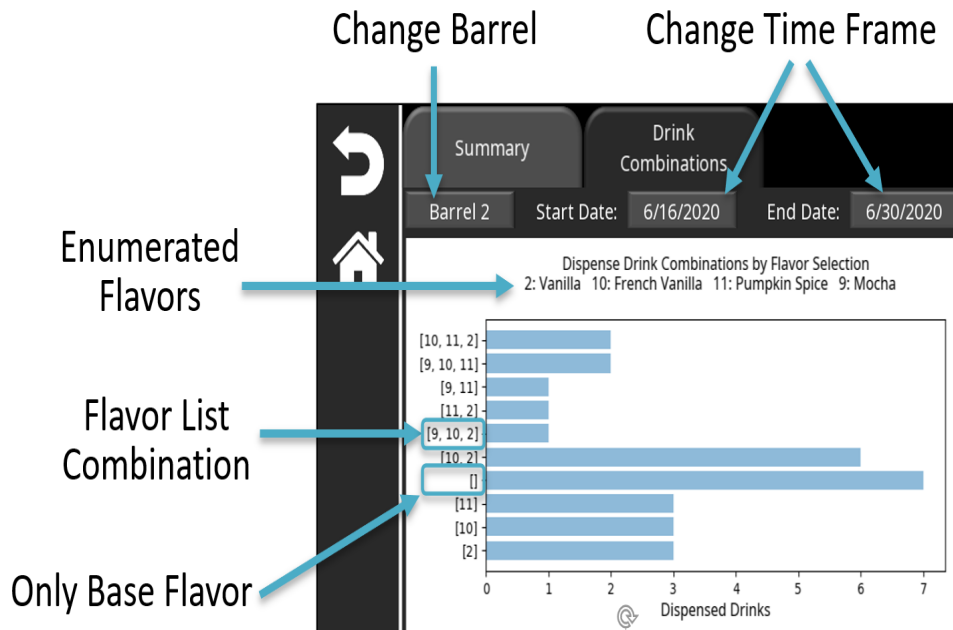
5.11 System Administration

This menu provides other settings that control the interface's security, system, and media. This menu is only available to service technicians, and has four sections: "Passwords," "Media," "Settings," and "System."

Passwords

The store operator and store manager passwords can be changed in this menu. Please note that the service technician password cannot be changed. Under the "Passwords" category, select the "Change Password" button next to the desired option: "Operator's Password" or "Manager's Password."
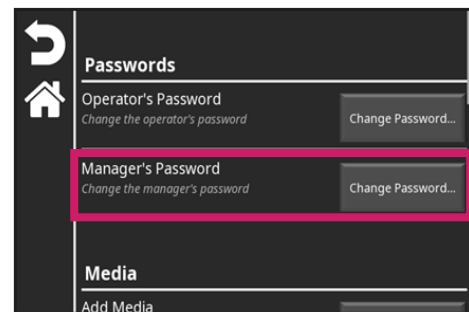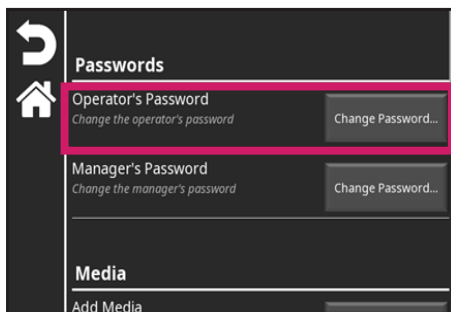
Enter the new password on the pop-up window and select the green check mark. A second password pop-up window will appear asking that the new password be re-entered. After re-entering, select the green check mark to confirm the updated password.
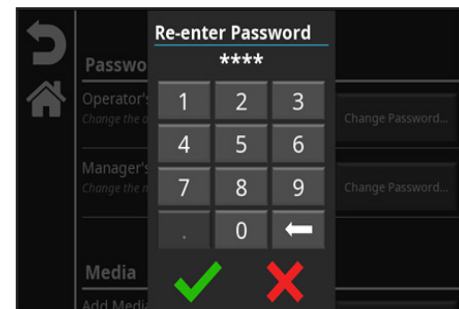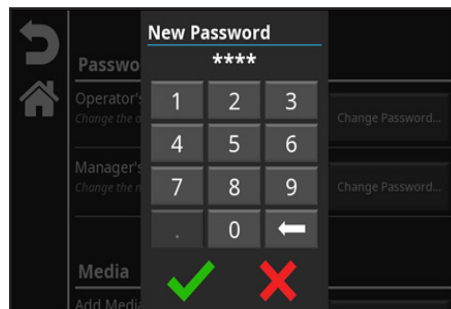
If the passwords do not match, an error window will appear. Select the green check mark to return to the previous screen and re-enter the password. Once the correct password has been entered both times, a window will indicate the password was successfully changed. Press the green check mark to return to the menu screen.
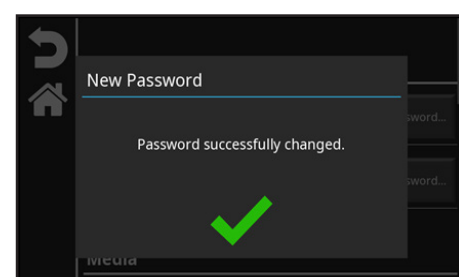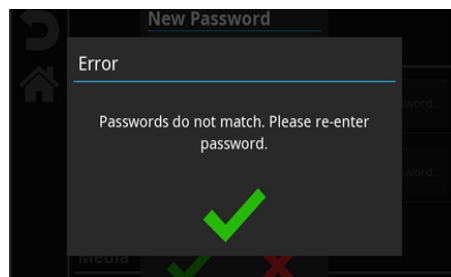
Media

The options under this category allow graphics and videos to be added from a USB to the merchandiser's internal memory. To use these options, a USB with media content needs to be inserted into any of the USB ports on the merchandiser (refer to Sections 6.1 and 6.2 for information on accessing USB ports and loading content).

Select the "Add Media" option to add images and videos from the USB to the existing media on the merchandiser. Select the "Replace Media" option to replace all images and videos in the merchandiser's internal memory with media from the USB.

Please note that the "Add Media" option is an alternate way of uploading images and videos to the merchandiser. When a USB is inserted into the merchandiser's USB port, a window will automatically appear asking if you would like to load media from the USB (refer to Section 6.2). If the option is declined, the media can be uploaded later through this menu option.
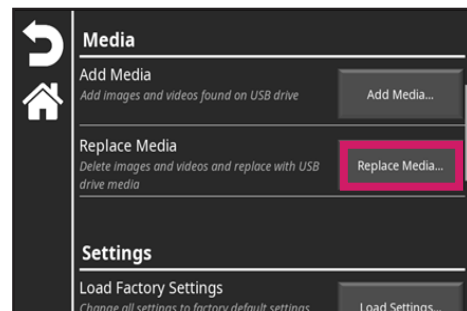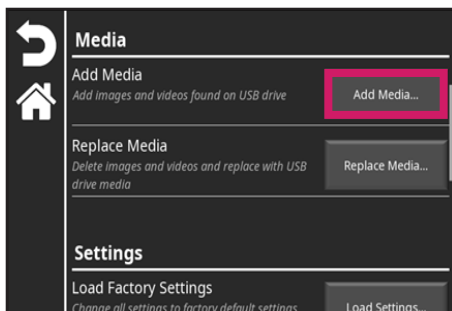
When either option is chosen, a pop-up window will appear to confirm the selection to add or replace media. Select the green check mark to confirm. The media will be downloaded and added or replaced based on the option selected. Select the red X for either option to cancel the operation and return to the previous screen.
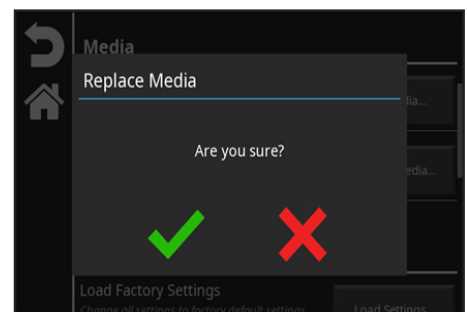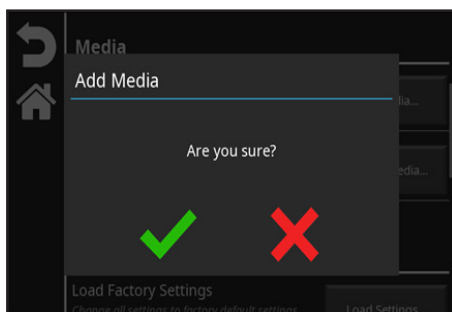
Once downloaded, the images can then be accessed through the "Change Graphics" menu option (Section 5.2). Likewise, the videos can be accessed through the "Change Video" menu option available on video doors (Section 5.3).

Settings

These options can load the factory default settings, copy the merchandiser's settings to a USB, or download settings from a USB to replace the existing settings on the merchandiser's internal memory. In this category, "settings" refer to those listed in the "Settings" menu (Section 5.9).

Select "Load Factory Settings" to reset all of the merchandiser's settings to the factory default settings. Once this option is selected, a pop-up window will appear to confirm the action. Select the green check mark to confirm. The application will automatically restart after the factory settings are loaded. WARNING: After the application restarts, the user must reconfigure the flavors (refer to Section 5.8) and readjust any custom setting changes (refer to Section 5.9).
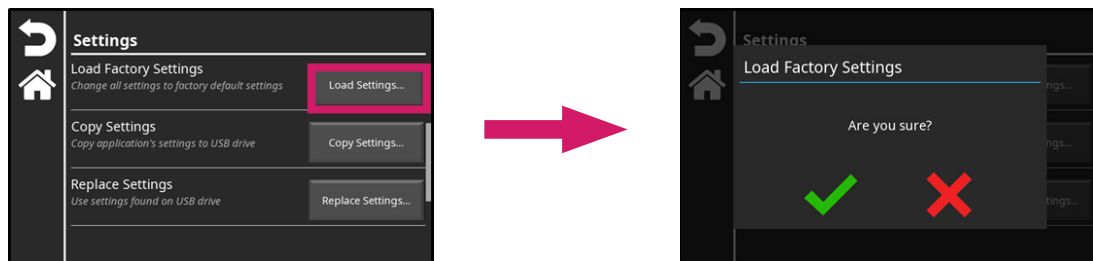
Select "Copy Settings" to upload existing merchandiser settings to a USB inserted into any of the USB ports on the merchandiser (refer to Section 6.2). Once this option is selected, a pop-up window will appear to confirm the settings. Select the green check mark to upload the settings to the USB. Select the red X to cancel the operation and return to the previous screen.
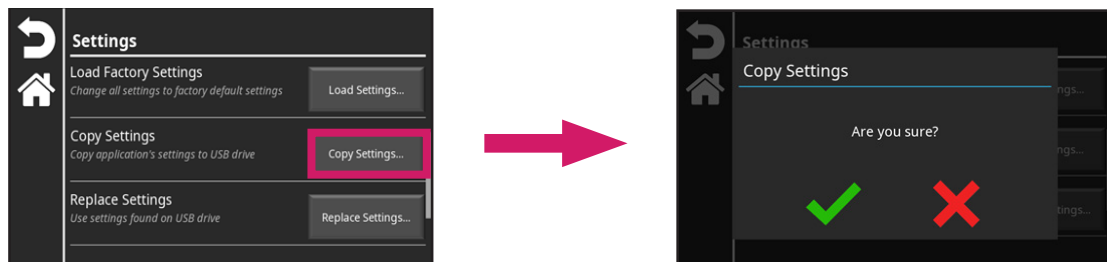
Select "Replace Settings" to download settings from a USB and replace existing settings. To use this option, a USB with preloaded settings needs to be inserted into any of the USB ports on the merchandiser (refer to Section 6.2). Once this option is selected, a pop-up window will appear to confirm that existing settings will be replaced. Select the green check mark to download settings from the USB to the merchandiser's internal memory. The application will automatically restart after the settings are downloaded. After the application restarts, the new settings will be used. Select the red X to cancel the operation and return to the previous screen.
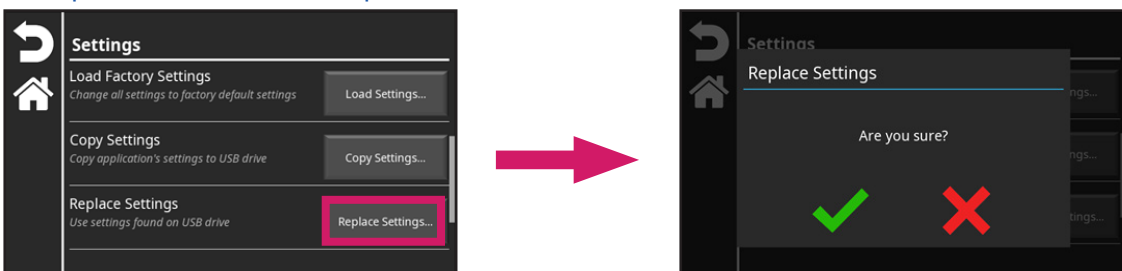
System

The following three options are available under this category: "Copy Dispense Data," "Copy Debug Logs," and "Reboot."

Copy Dispense Data: This option copies dispense data logged by the merchandiser to a USB drive. In order to use this option, "Dispense Data Logging" needs to be enabled (refer to Section 5.9 under "Miscellaneous Settings") and a USB needs to be inserted into any of the USB ports on the merchandiser (refer to Section 6.2). Once the "Copy Data" option is selected, a pop-up window will appear to verify the operation. Select the green check mark to confirm and upload the data to the USB. Select the red X to cancel the operation and return to the previous screen.

Copy Debug Logs: This option copies the merchandiser debug logs to a USB. These logs are useful when troubleshooting with FBD Technical Support. In order to use this option, a USB needs to be inserted into any of the USB ports in the merchandiser (refer to Section 6.2). Once the "Copy Logs" option is selected, a pop-up window will appear to verify the operation. Select the green check mark to confirm and upload the data to the USB. Select the red X to cancel the operation and return to the previous screen.
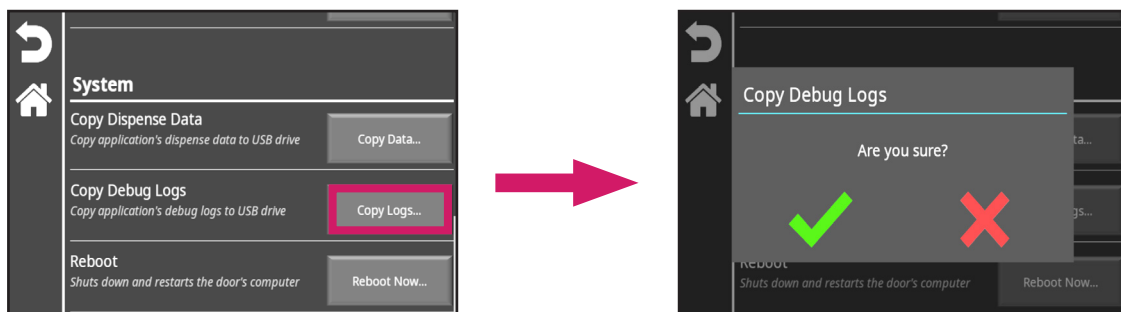
Reboot: This option restarts the merchandiser interface. Once the "Reboot Now" option is selected, a pop-up window will appear to confirm the reboot. Select the green check mark to shut down and restart the merchandiser or select the red X to cancel the operation and return to the previous screen.

6. Adding Images and Videos to Merchandiser

All multi-flavor merchandisers allow the user to add new graphics (flavor or background) and videos to the internal memory. A removable USB drive is used to transfer media content to the door. Section 6.1 describes the necessary format for USB content and Section 6.2 describes how to access the USB ports and upload content to the merchandiser.

6.1 Adding Content to USB Drive

The USB drive must be formatted as FAT32 (support for exFAT drives is in development). Graphics must have a specific format and specific folder structure in order to be recognized by the merchandiser. Follow the steps below to add images and videos to a removable USB drive.

1	Set up folders on the USB drive for each type of image: Backgrounds, Buttons, Flavors, and Videos. It is important that the folders have these exact file names. Each folder name must begin with an uppercase letter. **Backgrounds** - Folder to hold background images. **Buttons** - Folder to hold base flavor images. **Flavors** - Folder to hold add-in flavor images. **Videos** - Folder for videos and images meant to be used in the video portion of the screen (only for video doors).
2	Images can be grouped into subfolders to improve organization and ease of use. Each sub-folder becomes a filter in the "Change Graphics" menu (refer to Section 5.2). In the example to the right, a "Coffee" filter and "Lemonade" Filter will appear when changing the flavor graphics.
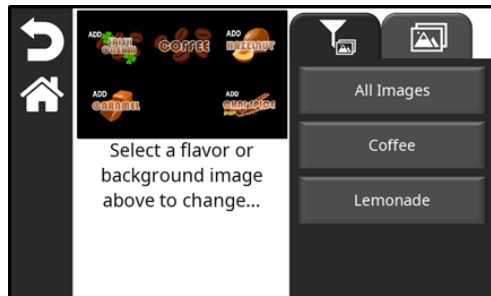
Folder structure shown:
- Coffee
  - Backgrounds
    - CoffeeBackground372.png
    - CoffeeBackground771.png
    - CoffeeBackground772.png
  - Buttons
    - Coffee.png
  - Flavors
    - Caramel.png
    - ...
- Lemonade
  - Backgrounds
    - LemonadeBackground372.png
    - LemonadeBackground771.png
    - LemonadeBackground772.png
  - Buttons
    - lemonade.png
  - Flavors
    - peach.png
    - ...
  - Videos
    - lemonade_advertisement.mp4
    - lemonade_advertisement.jpg
- Videos
  - generic_advertisement.mp4
  - generic_advertisement.png

3	Save images to the folder that matches how the images will be used. Images must comply with the specifications in Section 2.3. The file names for the base flavors and add-in flavors should be carefully selected. They are used when logging dispense data. Please use the following naming rules: use spaces or underscores between words, or capitalize the first letter (Sour_Apple.png" or "SourApple.png"); place any other references in parentheses to remove it from the name ("Sour_Apple_(REF 1234).png"); the file extension is automatically removed from the name when processed.
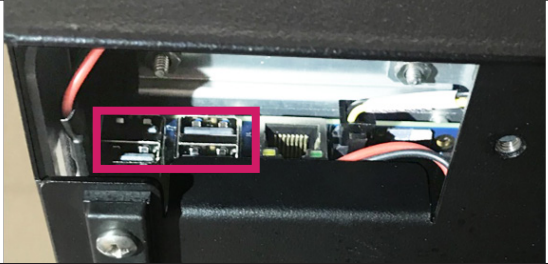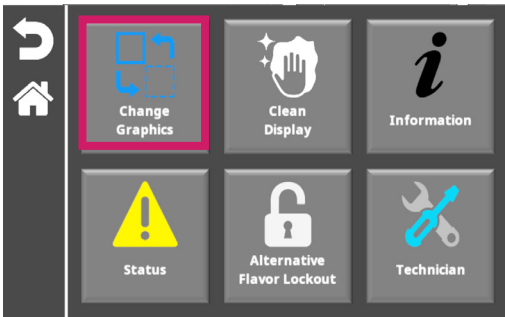
File Name	Resulting Dispense Data Name
Pink_Lemonade.png or Pink_Lemonade_(REF1234).png or pink lemonade.png or PinkLemonade.png	Pink Lemonade
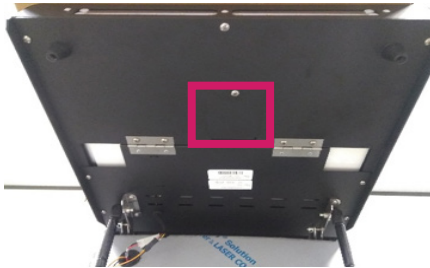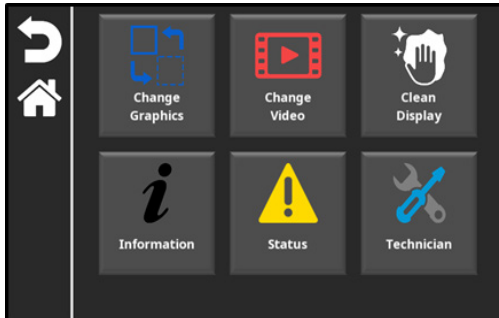
6.2 Accessing USB Ports and USB Content

Once images have been added to the USB as specified in Section 6.1, the images will need to be uploaded to the merchandiser. Follow the steps below to access the USB ports and upload the images.

372 Multi-Flavor Merchandiser	
1	Lift the door up to view the back panel and locate the opening at the bottom right corner of the door.
2	Insert a USB into any of the available USB ports. Ensure it is inserted correctly.
3	Push the door back down to close and make sure the door clicks into place.
4	A prompt to load the images onto the merchandiser will appear on the screen. Select the green check mark to load the graphics. If the red X is selected, the process will be canceled; however, the images can be uploaded through the "System Administration" menu, under the Media category by selecting the "Add Media" option (Section 5.11).
5	Once the upload is complete, the new graphics can be accessed through the "Change Graphics" option (Section 5.2).

771/772 Multi-Flavor Merchandiser	
1	Lift the door up to view the back panel and locate the access panel in the center back area of the door. Remove the access panel using a Phillips screwdriver.
2	Insert a USB into any of the available USB ports. Ensure it is inserted correctly.
3	Push the door back down to close and make sure the door clicks into place.
4	A prompt to load the images onto the merchandiser will appear on the screen. Select the green check mark to load the graphics. If the red X is selected, the process will be canceled; however, the images can be uploaded through the "System Administration" menu, under the Media category by selecting the "Add Media" option (Section 5.11).
5	Once the upload is complete, the new graphics can be accessed through the "Change Graphics" option (Section 5.2). Likewise, new videos can be accessed through the "Change Video" menu (Section 5.3).

7. Status Messages

The table below shows a list of the status messages that will appear at the bottom center section of the main display. These messages will provide status information for the barrel. The only status message that will appear over the flavor is the "Sold Out" message when a flavor add-in or base is out of syrup.

Touch Flavors!

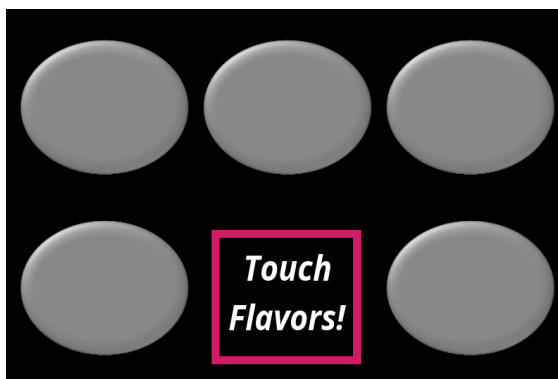| Status Message	Cause	Solution
All Flavors Sold Out	Out of all flavor syrups.	Replace all flavor syrup BIBs.
Barrel Off	Barrel is turned off.	Access dispenser keypad, select barrel, then select ON.
Barrel Sleeping	Barrel is in "sleep" mode.	Access dispenser keypad, select barrel, then select ON.
Base Flavor Sold Out	Out of base syrup.	Replace empty base syrup BIB.
Defrosting, Not Ready	Barrel defrosting.	Wait for defrost cycle to complete.
Door Comm Error	Door is not communicating with the dispenser's main control board.	Contact service provider or FBD Technical Support.
Freezing, Please Wait...	Barrel in first freeze after defrost.	Wait until dispenser completes first freeze down cycle.
Out of Air	Out of compressed air.	Restore supply of compressed air.
Out of CO_2	Out of CO_2/Low CO_2 pressure.	Restore supply of CO_2.
Out of Nitrogen	Out of Nitrogen/Low Nitrogen pressure.	Restore supply of Nitrogen.
Out of Water	Out of water/Low water pressure.	Check water supply.
Sold Out (overlaid on flavor)	Out of flavor or base syrup.	Replace empty flavor or base syrup BIB.
Barrel in Error	A fill error occurred and barrel turned itself off.	Turn barrel ON using dispenser keypad. If error continues to occur, contact service provider or FBD Technical Support.

8. Troubleshooting

In most cases, the status messages listed in Section 7 will direct the user to the problem. However, there may be instances where the merchandiser hardware requires maintenance.

8.1 77X Hardware Overview

While the merchandiser communicates with the dispenser, it has an independent operating system that generally consists of a main control board, display adapter board, touchscreen display, and lighting components.

Graphic Diffuser

Touchscreen

Front View

USB Port Access Panel

Hinged Access Panel

Back View
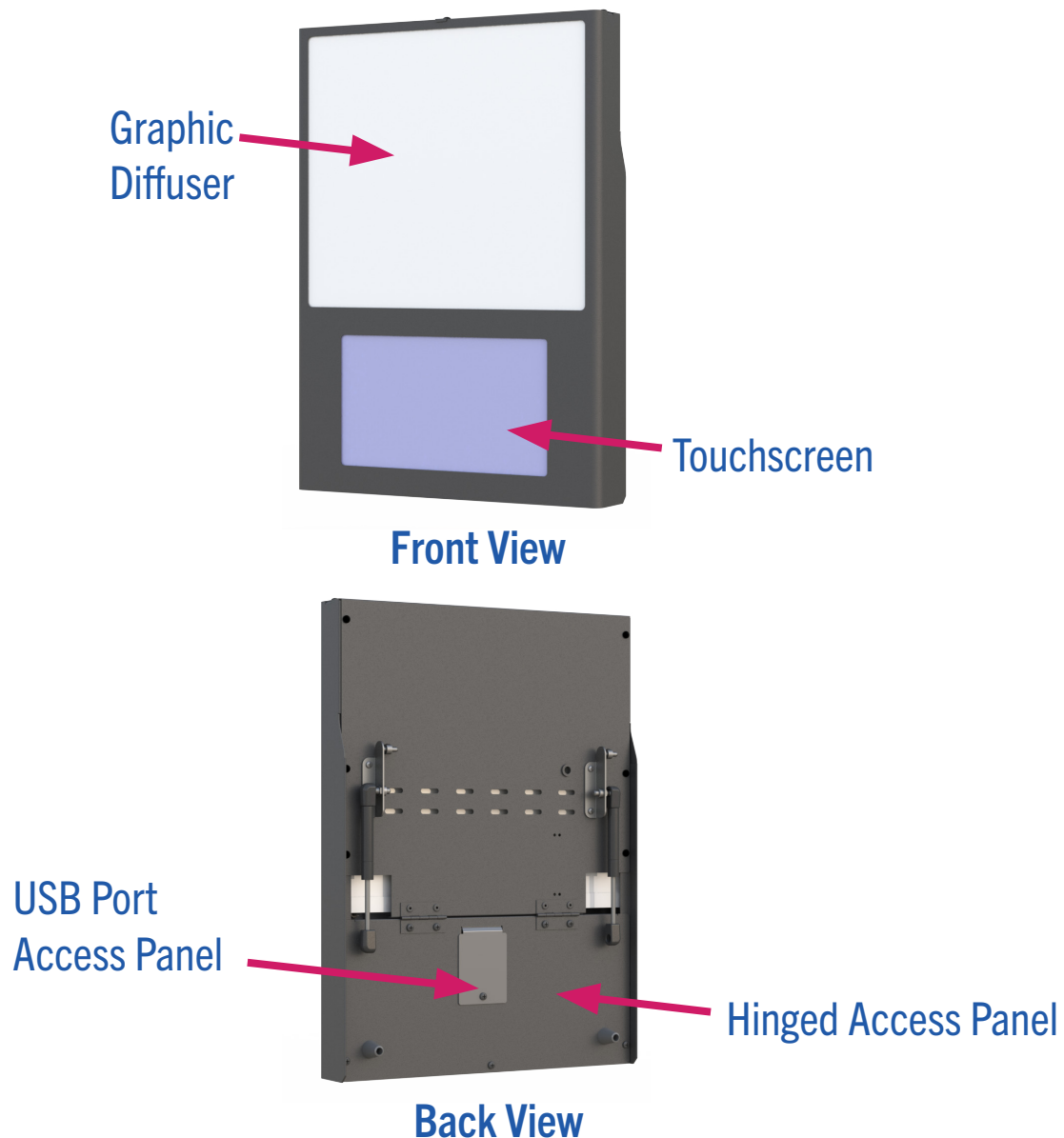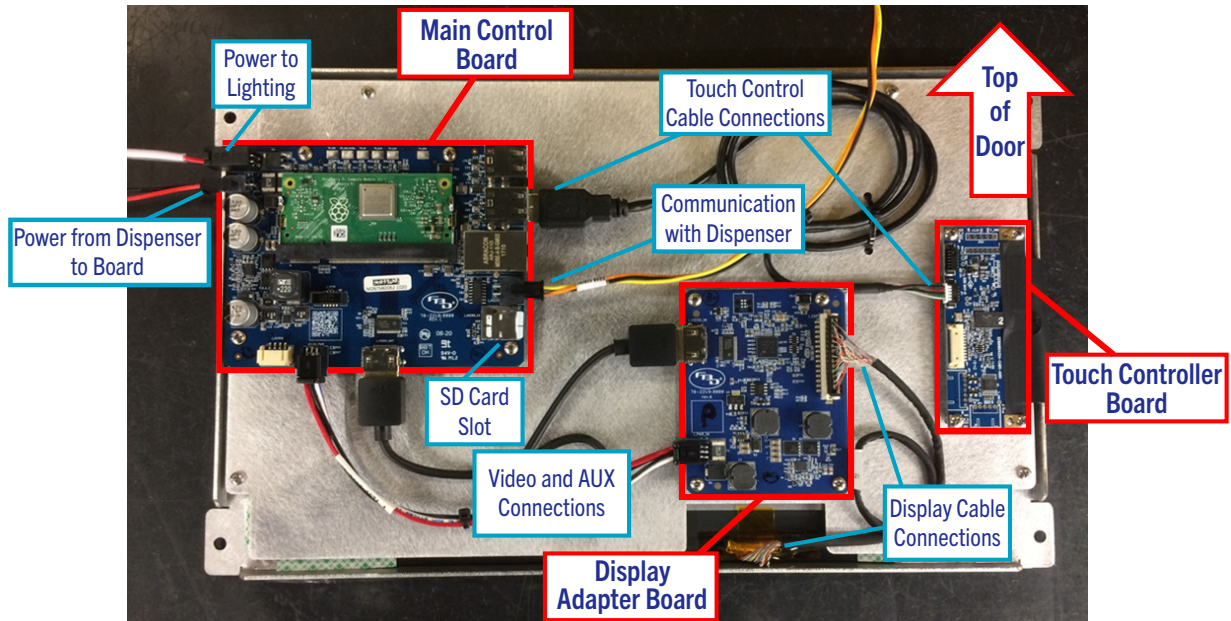
77X MFLV Display Components

8.2 372 Hardware Overview

The 372 merchandiser operates similarly to the 77X merchandiser and has the same operating system, but functions without the display adapter board present in the 77X version.
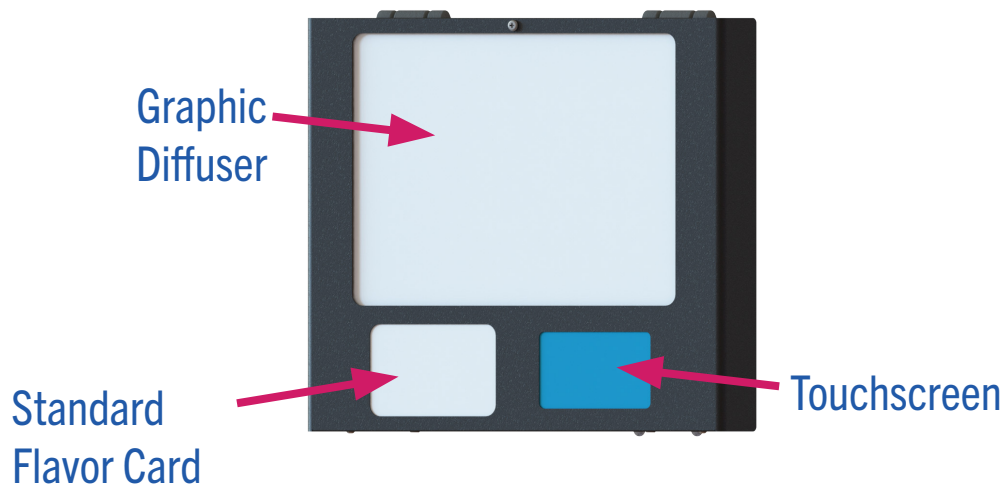
Front View

Angled
Access Cover

Back View

Display Cable
Connections

Touch Control
Cable Connection

SD Card
Slot

Top
of
Door

Communication
with Dispenser

Power from Dispenser
to Board

Power to
Lighting
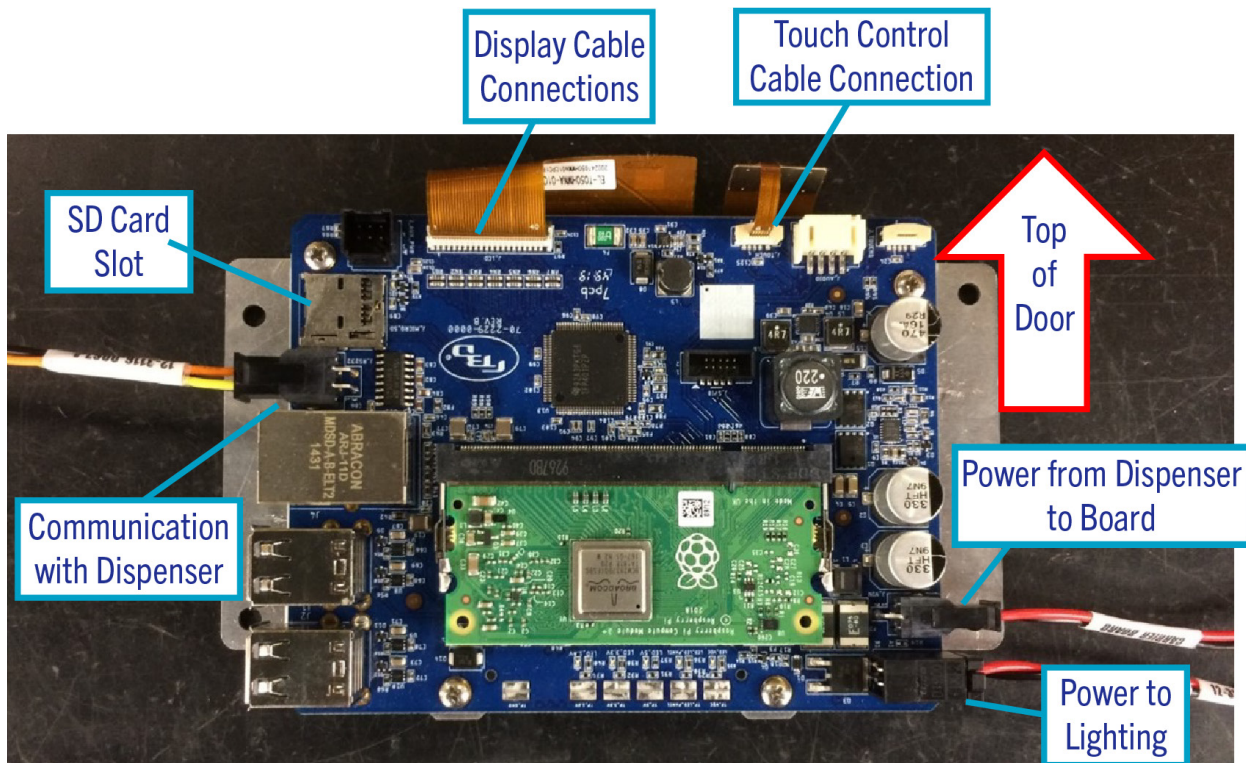
372 MFLV Display Components

8.3 77X Video Door Hardware Overview

The 77X video merchandiser is based on the same core technology, but adds a larger screen to provide the video playback area. The larger display requires a different display adapter board and a separate backlight power supply board; however, the control board is the same across all 77X Muliflavor doors. The auxiliary harness connector on the control board has been revised to support the video door configuration.

Video Area

Touchscreen

Front View

USB Port Access Panel

Hinged Access Panel

Back View
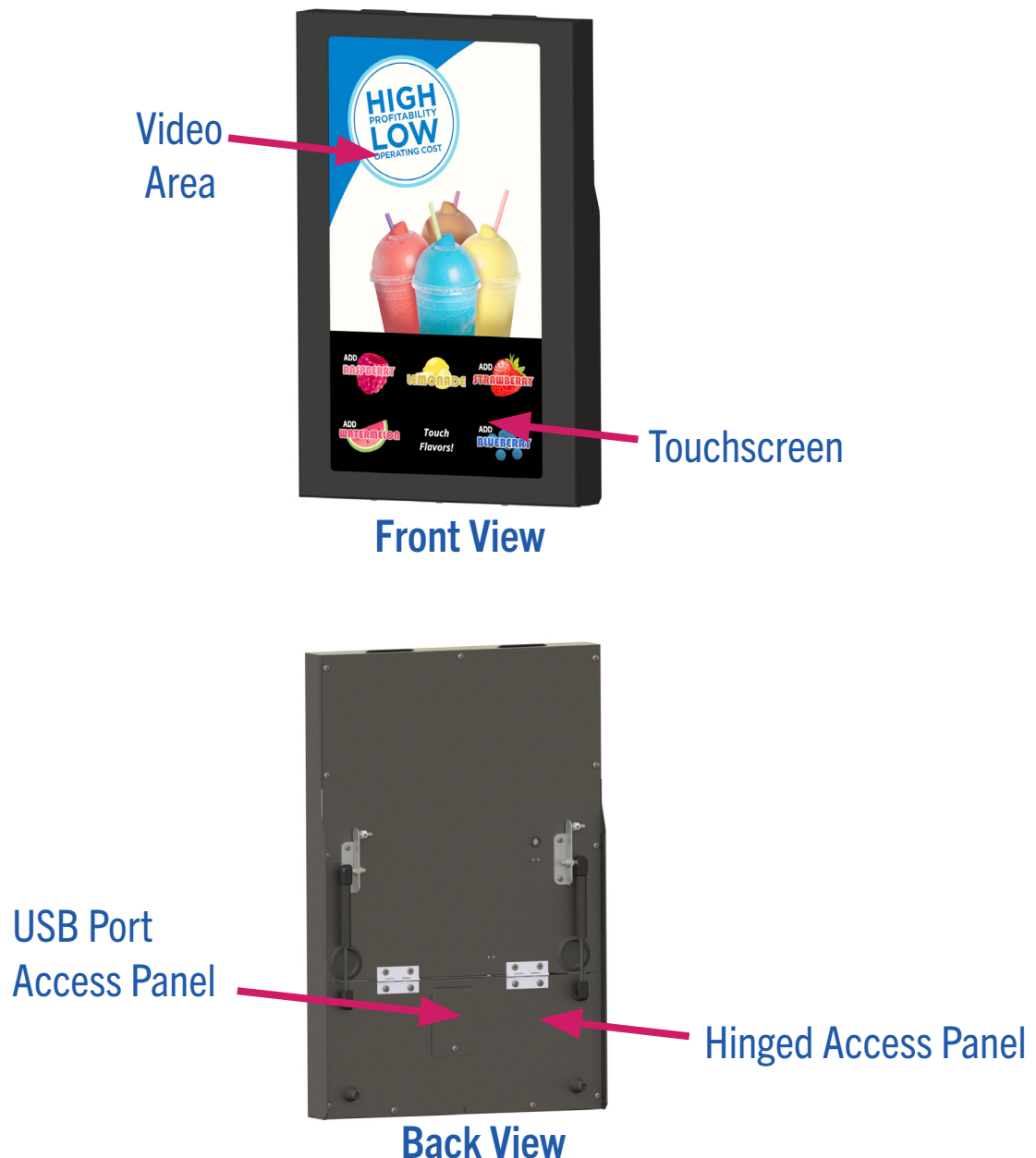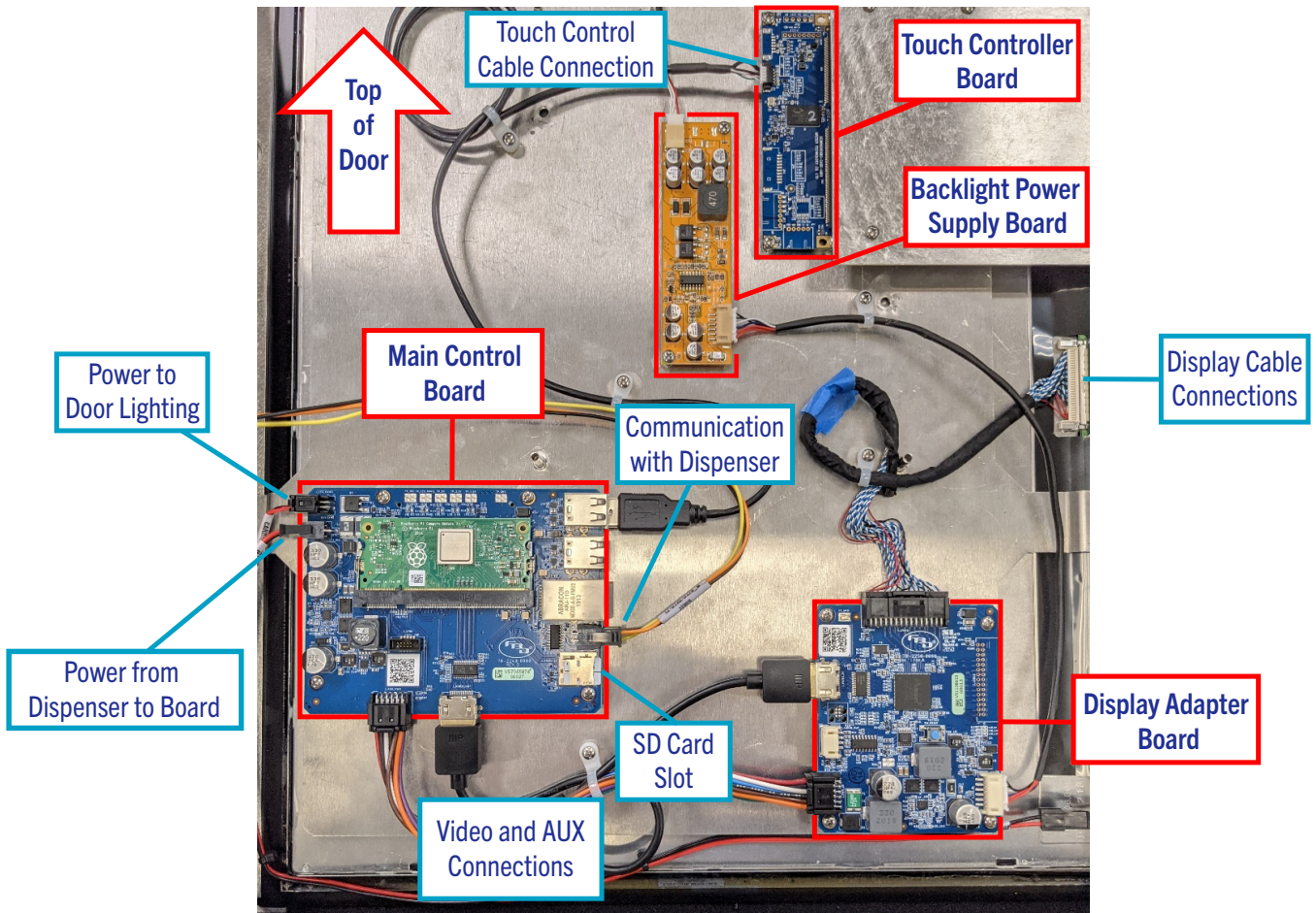
77X MFLV Video Door Display Components

8.4 Merchandiser-to-Dispenser Connections

The power and communication connections between the merchandiser and the dispenser are consistent across the 372, 771, and 772 merchandisers.
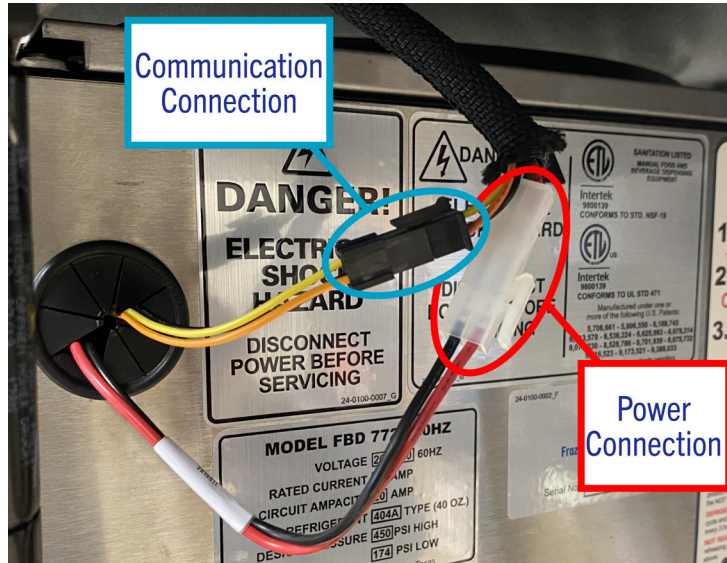
8.5 Status LEDs

There are 6 status LED lights on the main control board (consistent across 372 and 77X)—five green and one red. Four of the green LEDs indicate the merchandiser's power status; the other green LED, labeled LED_PANEL, indicates the status of the merchandiser lighting and will only be lit when the lighting is on, and vice-versa. The red LED located near the micro SD card indicates the status of the micro SD card. It will be on if no micro SD card is installed or if the installed micro SD is not connected properly.
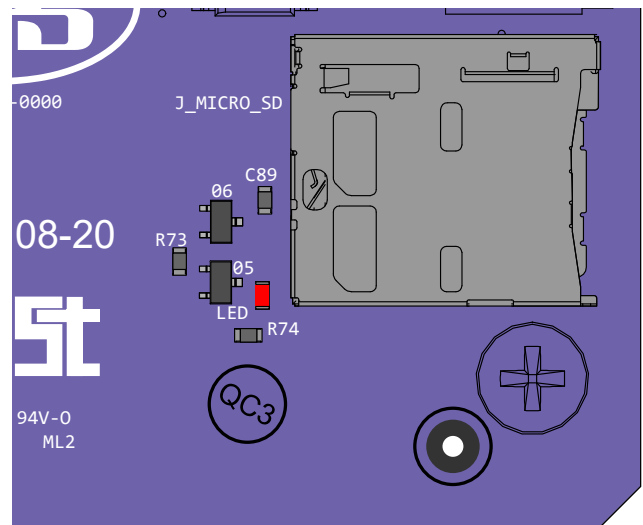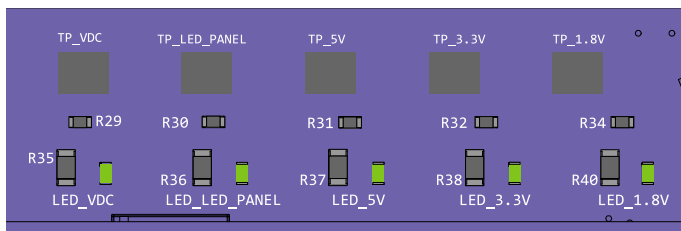
8.6 Troubleshoot Power Issues

The dispenser powers the merchandiser through a 24 VDC connection; as long as the dispenser has power, the merchandiser will remain powered as well. If the dispenser is powered on and the merchandiser is not (display and lighting are off), check the dispenser side of the power connection (shown in Section 8.4) with a multimeter.

If the meter does not read 24 VDC, the problem is with the dispenser.

1	Remove the side panels to access the interior of the dispenser. Locate the merchandiser power supply (on top of the e-box for 77X; on top of the fan shroud for 372).
2	Locate the fused links that are connected to the T1/T2 terminals on main power side of the contactor.
3	Check the connections with a multimeter.
4	Open the fuse holders for each wire and check the fuse inside. Replace if necessary.

If the meter reads 24 VDC, the problem is with the merchandiser.

1	For 77X merchandisers, open the rear hinged access panel to view the control board. For 372 merchandisers, view the control board through the access opening (the back panel will need to be removed if in-depth work is required).
2	Check the Status LEDs on the control board (see Section 8.5 for more information on status LEDs).

8.7 Troubleshoot Communication Issues

Inspect the connections between the merchandiser and dispenser if both are displaying door communication errors.

1	Inspect the four-pin molex connector (shown in Section 8.4) and ensure the connection is secure.
2	Access the e-box to inspect the DB9 connector (labeled P2) on the main control board.
3	Access the merchandiser control board and inspect the "communication to dispenser" connection (shown in Section 8.1 for 77X and 8.2 for 372).

8.8 Troubleshoot Display Issues

Verify display connections, software, and status LEDs if the merchandiser issue persists after checking power and communication connections.

1	For 77X merchandisers, open the rear hinged access panel to view the display adapter board. For 372 merchandisers, view the control board through the access opening (the back panel will need to be removed if in-depth work is required).
2	Inspect the touch and display cable connections (shown in Sections 8.1 and 8.2).

8.9 Critical Error Screen

In rare cases, a "Critical Error Detected" screen may load instead of the user interface. Follow the steps listed on-screen and report the error code number to FBD Technical Support.
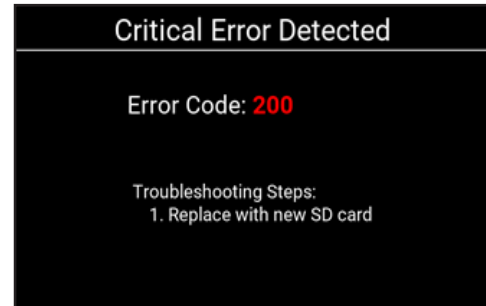
8.10 Troubleshooting Overview

| Symptom	Possible Solution
The dispenser has power, but the merchandiser does not.	Verify connections between door and unit. Test for 24VDC on power connector between door and unit. If power, check connections and status LEDs inside door. If no power, check 24VDC power supply in unit and fused connections to contactor.
There is nothing on the display. The lighting is working correctly. Display backlight may come on.	The merchandiser may need time to complete loading. Inspect the connection between the display and the display adapter board and the connection between the control board and display adapter board. Fix any loose connections.
There is nothing on the display. The lighting is always on or always off, but it does not respond to opening/ closing the door. Display backlight may come on.	Confirm the SD card is correctly installed in the control board. Confirm the green module is correctly inserted into the main control board. There is a latch on each side, and it hinges into the connector.
Touch is not responsive.	The door will not respond to touch other than the unlock sequence if not ready or door comm error. Power the door off and back on. Verify the touch cable connection is secure between the touch controller board and the main control board.
Door Comm Error is persistent.	Verify the yellow/orange/black communication harness connection between the merchandiser control board and the dispenser control board is secure.
Critical Error Detected	Follow the steps on the display and contact FBD Technical Support

9. Appendix

Section 9.1 and 9.2 illustrate how a drink is dispensed when different dispense settings (explained in Section 5.9, items 5-8) are applied.   Section 9.3 illustrates how a drink is dispensed when an alternative flavor is enabled.

9.1 Dispense Function

Multi-Flavor Dispense Function
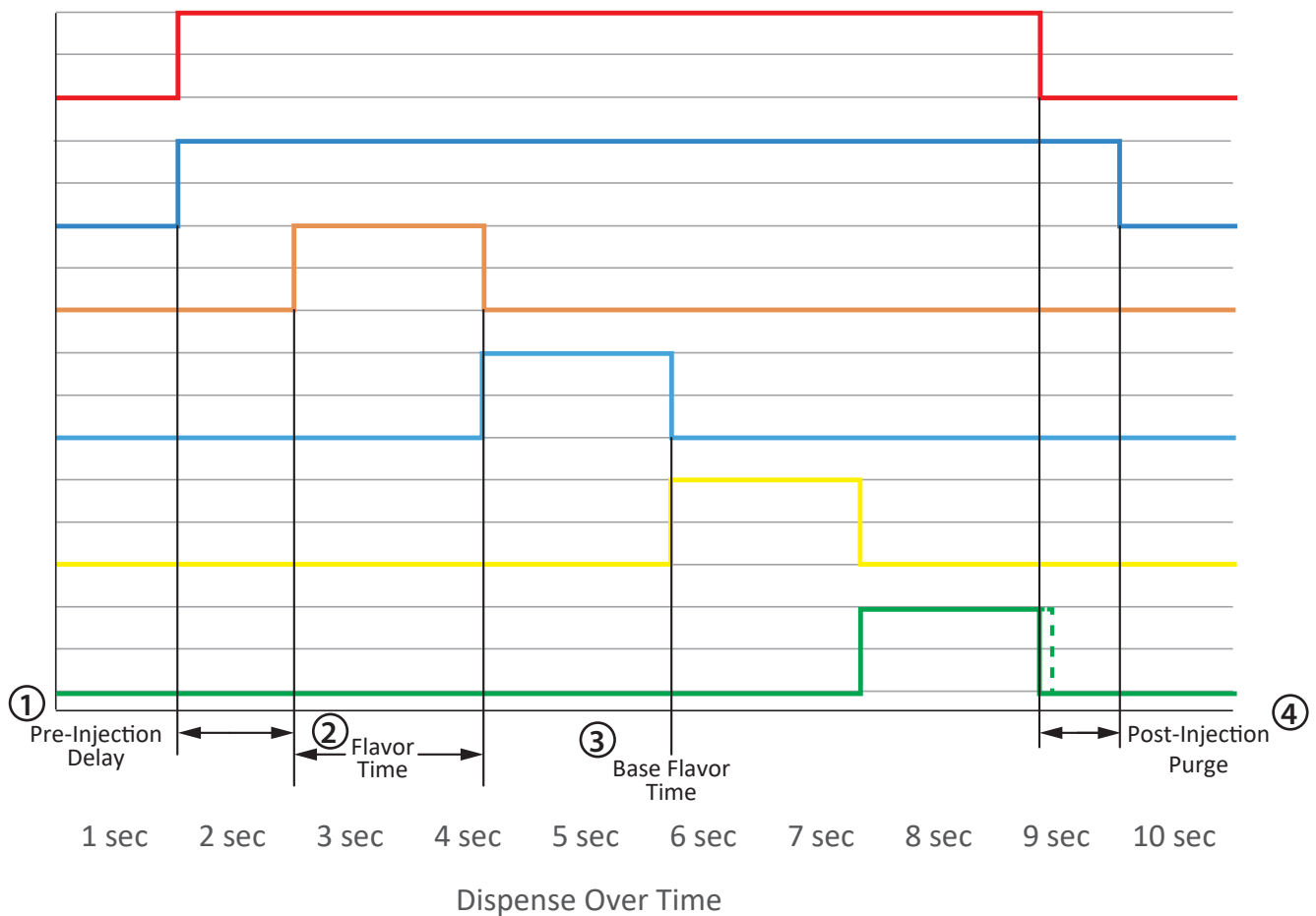
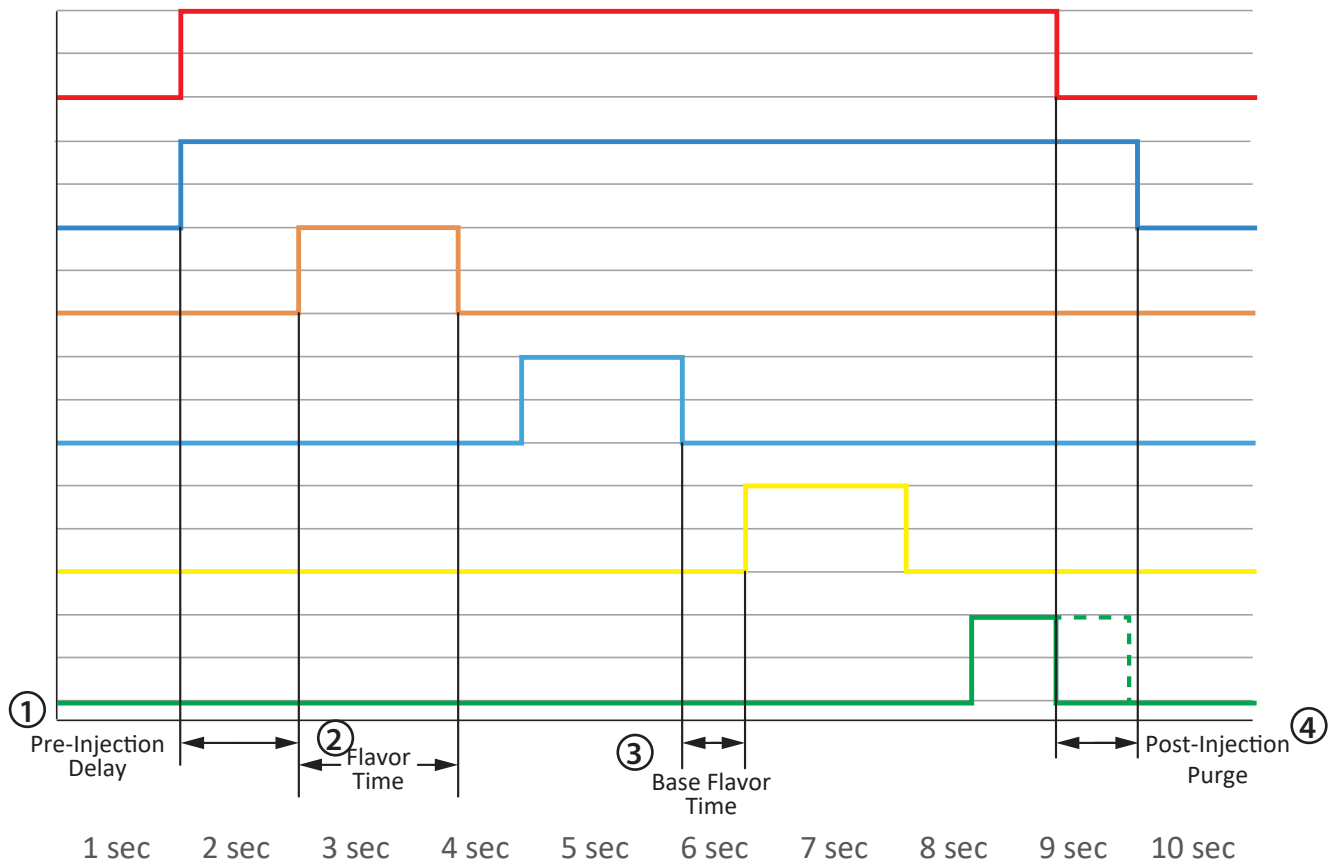| Legend					
Button Press	Base Flavor	Flavor 1	Flavor 2	Flavor 3	Flavor 4

① **Pre-Injection Delay Time**
Delay time before any flavors are injected into drink   5

③ **Base Flavor Time**
Time between flavor injections (0 is None)   0

② **Flavor Time**
Flavor injection time   8

④ **Post Purge Time**
Time that the valve is open at the end of the dispense   5

9.2 Dispense Function (with varied dispense settings)

Multi-Flavor Dispense Function

Dispense Over Time

| ── Button Press | ── Base Flavor | ── Flavor 1 | ── Flavor 2 | ── Flavor 3 | ── Flavor 4 |

① **Pre-Injection Delay Time**
Delay time before any flavors are injected into drink   `5`

③ **Base Flavor Time**
Time between flavor injections (0 is None)   `4`

② **Flavor Time**
Flavor injection time   `6`

④ **Post Purge Time**
Time that the valve is open at the end of the dispense   `5`

9.3 Dispense Function (with alternative flavor)

Multi-Flavor Dispense Function with Alternative Flavor

① Pre-Injection Delay

② Flavor Time

③ Base Flavor Time

④ Post-Injection Purge

1 sec 2 sec 3 sec 4 sec 5 sec 6 sec 7 sec 8 sec 9 sec 10 sec

Dispense Over Time

—— Button Press —— Base Flavor —— Alternative Flavor 1 —— Flavor 2 —— Flavor 3 —— Flavor 4

① **Pre-Injection Delay Time**
Delay time before any flavors are injected into drink — 5

③ **Base Flavor Time**
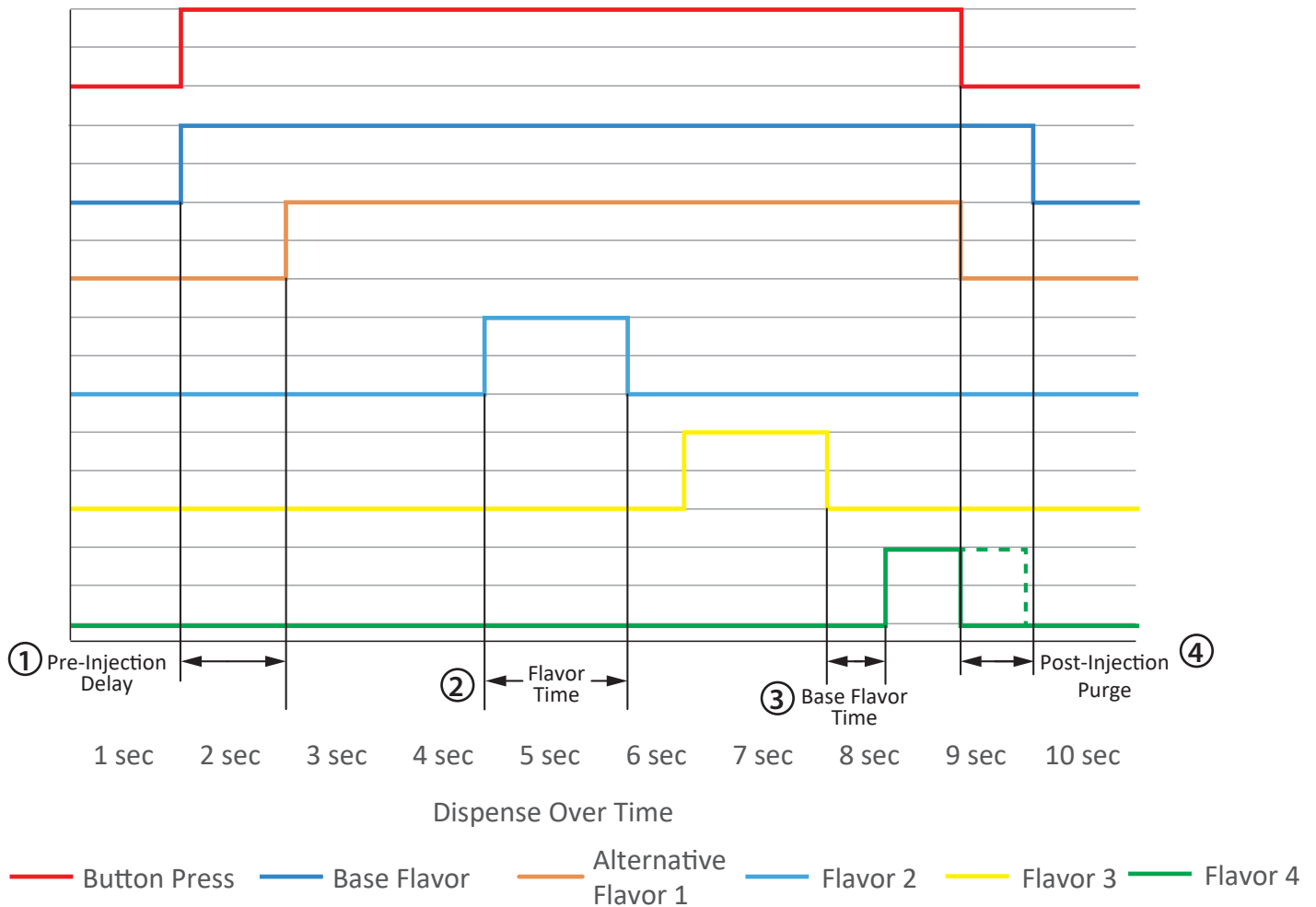*Time between flavor injections (0 is None)* — 4

② **Flavor Time**
Flavor injection time — 8

④ **Post Purge Time**
Time that the valve is open at the end of the dispense — 5

NOTES

FBD TECHNICAL SUPPORT: 866-323-2777 (U.S. & Canada), 852-2369-3998 (International),
1300 551 361 (Australia), or www.fbdfrozen.com

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The disposal of this product must comply with local regulations. Dispenser is not to be disposed of with household waste. Contact the retailer where this dispenser was purchased or recycle by locating an authorized recycler.