

Chapter 3. Adjustments, Audits & Diagnostics

Menu System

Special software in your game machine provides a method for tailoring the customer experience and improving your bottom line. You can temporarily shut down the game machine and adjust operation or audit play statistics. Or you can diagnose problems. To help you, an operator menu system displays. Over two dozen menus give you point-and-click access to every software-controlled aspect of the game experience. The menus allow you to find and resolve game issues.

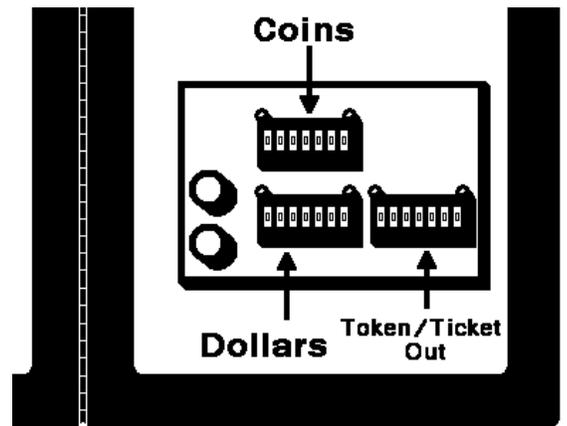
The menu system is accessible from Attract Mode or even during a game. (If you enter Diagnostic Mode during a game, the game aborts. Despite this fact, the player doesn't lose his tickets. After you exit Diagnostic Mode, the game machine dispenses the player's tickets.)

Diagnostic Button Panel

Bracket. Locate the *Diagnostic Button Panel*. (See the drawing, right.) The button panel mounts to a bracket inside the coin door, on top of the cash box vault.

To launch Diagnostic Mode, press the upper or lower diagnostic button.

Your meters are to the right of the buttons. The top left meter counts the total coins inserted into coin chutes 1 and 2. The bottom left meter counts the total dollars inserted into the Dollar Bill Validator (DBV) if installed. The right meter counts the total number of "tokens/tickets out" awarded.



Diagnostic buttons in coin door

Navigating Through Menus

| Function | Control |
|-----------------------------|-------------------|
| Move up through menu rows | TOP DIAGNOSTIC |
| Move down through menu rows | BOTTOM DIAGNOSTIC |
| Make the selected change | SERVE BALL |

To move down through menu rows, press the BOTTOM DIAGNOSTIC button. To move *up* through menu rows, press the TOP DIAGNOSTIC button. The type in the selected row turns yellow. To activate a menu option, press the SERVE BALL button.

To return to the previous menu, activate the BACK option. Exiting from the Main Menu causes the game machine to enter Game Mode.

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Fishbowl Frenzy™ - Main Menu

In the table below, each line represents a submenu under the Main Menu. We've numbered the lines to indicate accessibility. You can use the numbers to find which menu takes you to which submenu. Here's how the numbers work...

- Let's say that you're looking at the main menu, 1.0.0.0. The first number ("1") indicates the main menu. The trailing zeros indicate that you're on the top level for menu number 1. The main menu takes you to submenus that begin with "1." (*That's all of them!*)
- If the second number is greater than zero ("1.1.0.0," etc.), it indicates a submenu. If the desired submenu is 1.1.0.0, you can reach it from the main menu "1.0.0.0."
- A nonzero third number ("1.1.1.0," etc.) indicates a sub-submenu. If the desired sub-submenu is 1.1.1.0, you can reach it from submenu "1.1.0.0."
- A nonzero fourth number ("1.1.1.0," etc.) indicates a sub-sub-submenu. Submenu rules apply.

| 1.0.0.0 Fishbowl Frenzy - Main Menu | |
|---|--|
| 1.1.0.0 Coin Adjustments 1.1.1.0 Coin 1 1.1.2.0 Coin 2 (Dollar Bill Validator) 1.1.3.0 Price Per Play 1.1.4.0 Swipe Card Mode 1.1.5.0 Reset Adjustables to Factory Defaults | 1.5.0.0 Diagnostics 1.5.1.0 Standard Switch Tests 1.5.2.0 Bowl Opto Switch Tests 1.5.3.0 Coin Meter Tests 1.5.4.0 Ticket Dispenser Tests 1.5.5.0 Blower and Gantry Tests 1.5.6.0 Audio Test 1.5.7.0 Button Light Test 1.5.8.0 Coin 1 Lockout on/off Test 1.5.9.0 Coin 2 (Dollar Bill Validator) Lockout on/off Test 1.5.A.0 Reboot Game 1.5.B.0 Shut Down Game 1.5.C.0 Show FPS: off 1.5.D.0 Auto Drop Ball: off |
| 1.2.0.0 Coin Audits 1.3.0.0 Game Audits 1.3.1.0 Clear Current Audits | 1.6.0.0 Software Update 1.7.0.0 Sound Volume 1.8.0.0 System Information 1.9.0.0 Set Date – Game will Restart |
| 1.4.0.0 Game Adjustments 1.4.1.0 Attract Sounds 1.4.2.0 # of Multiballs 1.4.3.0 Top Bowl Ticket Spin 1.4.4.0 Ticket Value 1.4.5.0 Ticket Amount Per Ticket 1.4.6.0 Remember Tickets Owed 1.4.7.0 Bowl/Drain Ticket Adjustments 1.4.8.0 Top Bowl Ticket Adjustments 1.4.8.1 Top Bowl 1 Tickets | |

Main Menu

When you press either diagnostic button, the Main Menu appears. The Main Menu presents a number of selections that you can choose. As you can see in the figure below, these options cover game adjustments, audits and diagnostics.



Features on the Main Menu

| Feature | What It Does |
|--------------------|---|
| Coin Adjustments | Enter a menu that allows you to set pricing for coin acceptors. You'll also find a swipe-card option. |
| Coin Audits | Enter the Coin Audit Menu. Check or clear collection records for the Coin 1 (coin chutes) or Coin 2 (Dollar Bill Validator). |
| Game Audits | Enter the Game Audits Menu. Audit totals for ball and fishbowl statistics, plays, play time, and tickets. |
| Game Adjustments | Enter the Game Adjustments Menu. Set adjustable game features: Attract sounds, Multiball Mode, ticket value, etc. |
| Diagnostics | Enter the Diagnostics Menu. As you desire, test each peripheral device: Switches, meters, ball-server solenoids, motors, audio, and more. Check the frame rate (FPS) of the liquid crystal monitor. |
| Software Update | Enter a menu that allows you to update system software for the game machine. |
| Sound Volume | Enter the Sound Volume Menu: Default 85. Custom settings from 0 to 100. |
| System Information | Enter a menu that provides the current system and OS version, etc. |
| Set Date | Enter a menu that allows you to set the date and time. |
| Exit | Leave the menu system and enter Attract Mode. |

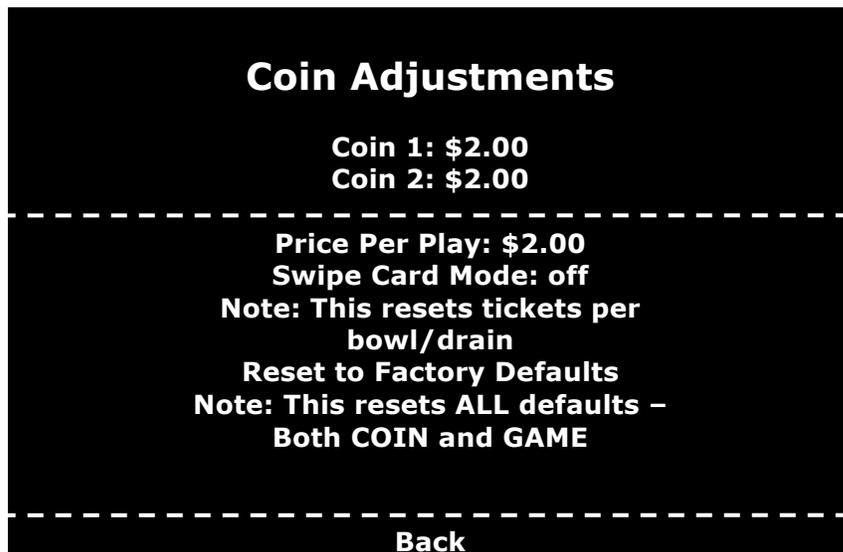
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(This replaces Page 3-5)

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|-------------------|---|--|--|
| Main Menu→ | 1.1.0.0, Coin Adjustments, Submenu | | |
|-------------------|---|--|--|

Coin Adjustments

From the Main Menu, pick Coin Adjustments. The Coin Adjustments Menu opens. From here, you can pick gameplay, coinage or sound adjustments. Then go to the selected menu and tailor the game to your installation.



Features on the Coin Adjustments Menu

| Feature | What It Does |
|---------------------------|--|
| Coin 1 | Sets the value of a switch closure at Coin Chute 1 (dollar fraction). |
| Coin 2 | Sets the value of input from the Dollar Bill Validator. |
| Price Per Play | Sets the charge for one round of the game. |
| Swipe Card Mode | On (<i>default</i>): Accept swipe cards. Off: Ignore swipe cards. |
| Reset to Factory Defaults | Enter a menu that allows you to reset software to restore original settings. |
| Back | Returns the system to the Main Menu. |

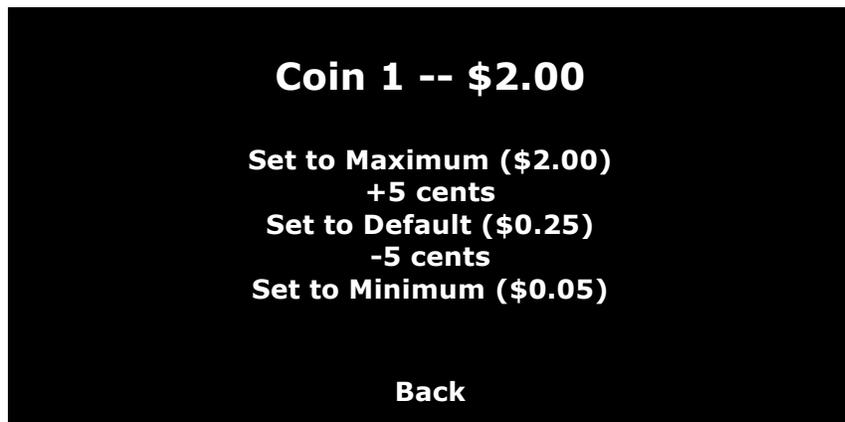
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| | | | |
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| Main Menu→ | Coin Adjustments, Submenu→ | 1.1.1.0, Coin 1, Sub- Submenu | |
|-------------------|---------------------------------------|--|--|

Coin 1

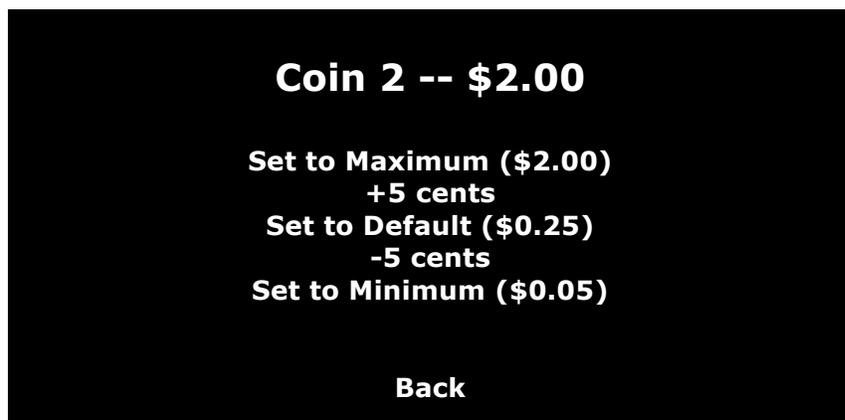
From the Coin Adjustments Menu, pick Coin 1. The Coin 1 Menu opens. From this screen, you can adjust the value of a switch closure at the Coin 1 chute. The maximum value is \$2.00 and the minimum is five cents. You can raise or reduce the value in five cent increments. The default setting is 25 cents. A line option allows you to pick this default.



| | | | |
|-------------------|---------------------------------------|--|--|
| Main Menu→ | Coin Adjustments, Submenu→ | 1.1.2.0, Coin 2, Sub- Submenu | |
|-------------------|---------------------------------------|--|--|

Coin 2

From the Coin Adjustment Menu, pick Coin 2. The Coin 2 Menu opens. From this screen, you can adjust the value of the output pulse information from the Dollar Bill Validator (if installed). The maximum value is \$2.00 and the minimum value is five cents. You can raise or reduce the value in five cent increments. The default setting is \$1.00. A line option allows you to pick this default.



Diagnostics

From the Main Menu, pick Diagnostics. The Diagnostics Menu opens. From this menu, you can check electromechanical features of your *Fishbowl Frenzy* game machine.



Features on the Diagnostics Menu

| Feature | What It Does |
|----------------------------------|--|
| 1.5.1.0, Standard Switch Tests | Access the Standard Switch Tests Menu. You can make a switch and watch for a state change. No state change means a bad device. |
| 1.5.2.0, Bowl Opto Switch Tests | Access to the Bowl Opto Switch Tests Menu. You can make a switch and watch for a state change. No state change means a bad device. |
| 1.5.3.0, Coin Meter Tests | Access the Coin / Ticket Meter Tests Menu. Send a meter an increment command. Check to see if the meter advances. |
| 1.5.4.0, Ticket Dispenser Tests | Access the Ticket Dispenser Tests Menu. Verify that a ticket dispenser responds to a vend command. |
| 1.5.5.0, Blower and Gantry Tests | Access the Blower and Gantry Tests Menu. Operate the blower, gantry motors and solenoids to check for malfunctions. |
| 1.5.6.0, Audio Test | Pick this option to sound a chime. Verify speaker and amplifier operation. |

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|---|---|
| 1.5.7.0, Button Light Test | Pick this option to light the player button lamp. To turn off the lamp, press the button. Helps you to check the lamp and cables. |
| 1.5.8.0, Coin 1 Lockout on/off Test, | If you have a New Jersey lockout mechanism, this test activates the Coin 1 coil. If the mech is good, it refuses coins. |
| 1.5.9.0, Coin 2 (Dollar Bill Validator) Lockout on/off Test | If you have a New Jersey lockout mechanism, this test activates the Coin 1 (Dollar Bill Validator) lockout signal. If the Dollar Bill Validator is good, it refuses to accept any dollar bills. |
| 1.5.A.0, Reboot Game | Reboots the game. After several moments, game software reboots and restarts in Game Mode. |
| 1.5.B.0, Shutdown Game | Shuts down the game computer. The peripherals are still active. To start the machine up again, turn the main power off and on. |
| 1.5.C.0, Show FPS: off | <i>Strictly for diagnostic use!</i> Access the Show FPS Menu. During a game, you can display the monitor frame rate. (Also other game code.) The character mode display appears sideways and superimposes over game video. |
| 1.5.D.0, Auto Drop Ball: off | <i>Strictly for diagnostic use!</i> Access the Auto Drop Ball Menu. When active, this feature causes balls to drop randomly in Game Mode. Use Auto Drop Ball to test the blower, gantry, trolley and server mech. Then reset the feature for normal gameplay. |

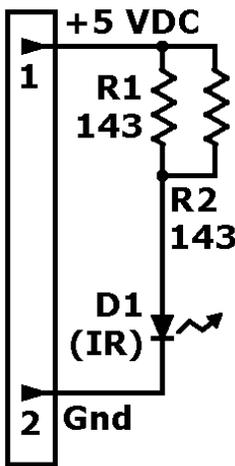
⊙ CAUTION

Show FPS. Before putting the game into service, disable this feature. Otherwise, code will overwrite game graphics and spoil gameplay.

⊙ CAUTION

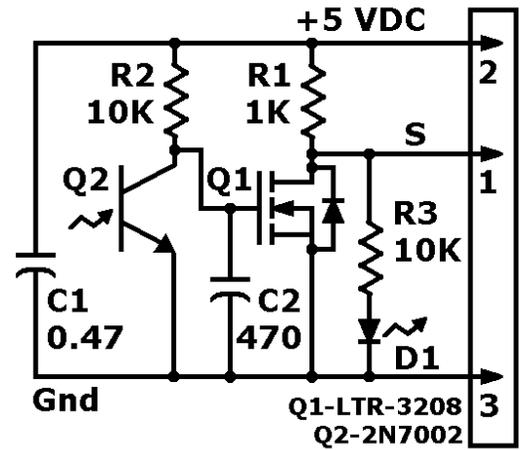
Auto Drop Ball serves balls randomly. While a technician may use this feature to diagnose blower and gantry problems, normal gameplay is impossible. Before restoring the game machine to service, disable this feature.

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Schematics. In the left schematic, LED D1 transmits an infrared beam. Right, phototransistor Q2 receives the beam. MOSFET Q1 buffers the output signal S. Visible indicator D1 changes state.

The ball as trigger. If this circuit is a bowl switch, Q2 remains on until a ball passes between D1 and Q2. The ball breaks the beam, causing the Q2 collector to rise high. This logic level change triggers Q1. Its drain clamps and sends low pulse S to the PS2 port. When the drain clamps, indicator D1 winks out.



Optos on the gantry trolley operate differently. With four balls in the trolley, you'll see four bars at the top of the screen (*above Bowl 13*). Each bar indicates one of the balls. That is, each bar shows that a ball is blocking one infrared beam. When the ball serves, the infrared beam again excites the opto receiver and the bar disappears. Unlike bowl optos, gantry optos connect directly to the I-O Board.

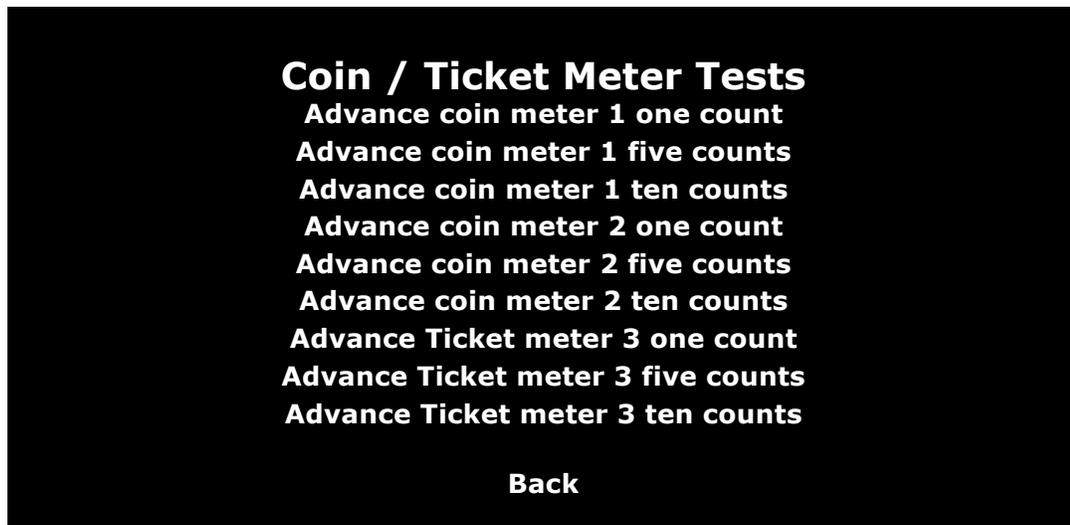
To review: Bowl switches that behave normally have no bar until something interrupts the beam. If something interrupts the beam, the bar should appear. When the state changes, you also hear a sound effect. Any other behavior indicates a problem. You can test switches by putting fingers in the bowls during this test. Watch for a change in state. Gantry trolley switches cause bars to appear at the top-center of the screen. Each bar indicates that the trolley is carrying one ball. Any other behavior indicates a problem. Here's an example failure mode: Two bars despite four balls riding in the trolley.

The procedure for opto finger tests appears in *Chapter 3, Maintenance, Troubleshooting & Wiring*.

| | | | |
|--------------------|-------------------------------|---|--|
| Main Menu → | Diagnostics, Submenu → | 1.5.3.0, Coin Meter Tests, Sub-Submenu | |
|--------------------|-------------------------------|---|--|

Coin / Ticket Meter Tests

From the Diagnostics Menu, pick Coin/Ticket Meter Tests. The Coin/Ticket Meter Tests menu opens.



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Watch the Meter. You'll find three coin/ticket meters on the switch bracket behind the coin door. The top left one is Coin Meter 1. The bottom left one is Coin Meter 2. The bottom right meter is the Tokens/Tickets Out Meter 3. With this test, you can test each one in turn. Watch one of your game machine's mechanical coin meters. Select the desired number of meter increments (one to ten). If you can increment by one or several counts, the meter and drive circuit are okay. If the meter doesn't click, then it probably isn't receiving a pulse from the game machine. You might have a broken cable or a bad driver. The driver would be on the I-O Board. Troubleshoot the problem. If the meter clicks, but doesn't increment, replace the meter.

| | | | |
|-------------------|----------------------------------|---|--|
| Main Menu→ | Diagnostics, Submenu→ | 1.5.4.0, Ticket Dispenser Tests, Sub-Submenu | |
|-------------------|----------------------------------|---|--|

Ticket Dispenser Tests

From the Diagnostics Menu, pick Ticket Dispenser Tests. The Ticket Dispenser Tests Menu opens. Use this menu to set up or check your game machine's two ticket dispensers. For example, you can verify the operation of either ticket mechanism by dispensing one, five or 10 tickets.

Or if you want to continuously dispense tickets, pick Test Ticket Dispenser 1 (or 2). The dispenser will feed tickets as long as you hold down the SERVE BALL button.

