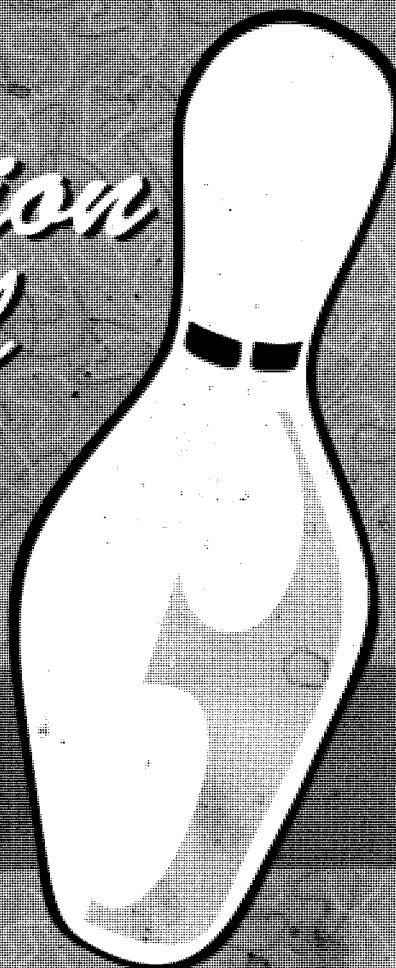


*Instruction
Manual*



EXIT
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BOWL-O-RAMA

Upgrade Kit Contents

- BOWL-O-RAMA *Turbo* board
- Game EPROM—U6
- Sound EPROM—U30
- Cabinet Side Graphic Stickers (2)
- Control Panel Overlay
- Marquee
- Instruction Labels
- Installation Manual

GAME DESCRIPTION

BOWL-O-RAMA is an upgrade for *CAPCOM BOWLING* for one to five players. *BOWL-O-RAMA* has three different bowling games to choose from: *Regulation Bowling*, *Flash-O-Matic*, and *Black Jack*.

In *Regulation Bowling* the rules and scoring are just like real bowling, following the regulations of the American Bowling Congress (ABC). In all three games players can join in at any time during the first frame.

Flash-O-Matic is a variation on the bowling theme. In this game a flashing score value moves back and forth across the alley. The player bowls, and the score value stops when the ball first hits a pin. If the player throws a strike he receives that score value. If he gets a spare he gets half the original value. If he fails to convert the spare then he gets 1 point for each pin that he did knock down. Scores can go up to nearly 10,000 points!

In *Black Jack* each player gets up to three throws to attempt to knock down 21 pins. Each time the full rack of ten pins is set. All pins knocked down by all players in one frame are added to the pot. The player who gets closest to 21 without going over gets all the points in the pot, and the pot is cleared to zero for the next frame. If a player gets 21 exactly then he gets twice the value in the pot. If two or more players tie in a frame they each get the points from the pot (or twice the points if they each have 21). Players who do not get closest to 21 or who bust (go over 21) get no points for the frame. Knocking down one pin scores as an ace, and is worth one or eleven, depending on what the player needs. This game is best played by several players together. The more players, the more points each frame is worth!

INSTALLING THE *BOWL-O-RAMA* UPGRADE KIT

1. Remove GR0, U6, and U30 from the *CAPCOM BOWLING* board.
2. Insert *BOWL-O-RAMA* EPROMs U6 and U30 into sockets at U6 and U30 respectively on the *CAPCOM BOWLING* board. Be sure that they are oriented correctly (notch towards pin 1).
3. Insert the *BOWL-O-RAMA* board into the socket at GR0 on the *CAPCOM BOWLING* board. Be sure all 28 pins are seated properly and securely.
4. Mounting holes are provided in the *BOWL-O-RAMA* board to secure it to the *CAPCOM BOWLING* board using a 13/16" spacer.

NOTE:

If the *CAPCOM BOWLING* board is one which uses a super cap to preserve audits, adjustments, and high scores then the *BOWL-O-RAMA* board may collide with the super cap and not be able to seat properly. This problem can be resolved as follows:

1. Desolder and remove the super cap.
2. Replace U7 with a battery-backed SRAM such as a Dallas Semiconductor DS1220 or SGS MK48Z02B. Any speed (250 ns or faster) should be okay.

This should provide enough room for the *BOWL-O-RAMA* board to be properly mounted to the *CAPCOM BOWLING* board.

The cabinet side graphic stickers are large enough to be installed directly over the original *CAPCOM BOWLING* stickers. Also, the control panel overlay may be adhered over the old one, provided that the old one is still intact and not torn up. Replace the *CAPCOM BOWLING* marquee with the *BOWL-O-RAMA* marquee provided. The marquee may be cut to fit your particular cabinet.

IN CASE OF DIFFICULTY

If after you have followed these instructions your system no longer works, check to make sure both U6 and U30 are oriented and seated properly. Make sure no pins are bent under or out the sides. U6 is the game EPROM, U30 runs the sounds. If one or the other isn't working, check the appropriate EPROM for correct installation. If the graphics look wrong or just appear as boxes then the *BOWL-O-RAMA* turbo board is probably not mounted correctly. Check to make sure it is oriented right and that all 28 pins are seated securely in their correct holes. This is a bit tricky, so be sure it's correct.

If all attempts to get *BOWL-O-RAMA* to run fail, remove the turbo board, U6, and U30 and replace the original *CAPCOM BOWLING* EPROMs. If the board still doesn't work then the problem is in the *CAPCOM BOWLING* board. Return it to *CAPCOM* or your local distributor for service. If, however, the system does work as *CAPCOM BOWLING* then either the upgrade kit was improperly installed or is defective. If this is the case, return the upgrade kit (the turbo board and both U6 and U30) to Exit Entertainment or your local distributor for repair. No returns will be accepted without the serial number sticker on the board intact. Exit Entertainment is located at 4520 West Dickens Avenue, Chicago, Il 60639. The phone number is (312) 292-4540.

SETTING UP THE GAME

After installing the kit, power it up to see if it works. Each time it's turned on, the game runs itself through a series of quick tests to make sure everything is working properly. It tests to make sure that the static RAM (U7), program ROM (U6), video RAM (U15 and U16), and the *BOWL-O-RAMA* turbo board appear to be working correctly. If any of these fail their tests then a message will appear on the screen saying what's wrong and which component is suspect. Note that some kinds of failures will prevent the system from displaying the errors. The test screen will also show if any of the battery-backed information (audits, adjustments, or high scores) have been corrupted. If they have, then a message will appear noting that they have been restored to their factory default conditions.

If both hook buttons are held in as the power is turned on, then the high score lists will be forced to their factory default settings. This allows the high scores to be cleared without having to open up the machine.

The test screen will stay up for about 15 seconds or until a button is pressed. While the test screen is up, a bowling ball will appear on the right half of the screen. Use the trackball to move the ball around on the screen to see if the trackball is working properly. Lastly, as soon as all the tests are finished, the system will begin playing the *BOWL-O-RAMA* theme music to verify that the sounds are working. Even if the attract mode sounds are set to be off, the system will play the theme once through to be sure it is working.

The game keeps audits to help see what games the players are playing and has several adjustments to tailor the game for a particular location.

The set-up screen is accessed by pressing the service switch several times rapidly. The set-up screen can only be accessed while the game is on the test screen (right after power-up) or in attract mode with no credits (or free play). The set-up screen cannot be accessed during a game.

The top portion of the screen shows the audits. These record the number of coins in, the number of each game played (*Regulation*, *Flash-O-Matic*, or *Black Jack*), and the number of tickets awarded (if so equipped). The audits may be cleared by the operator at any time. Also, if the battery-backed memory on the board is corrupted, the audits may be automatically cleared.

The bottom portion of the set-up screen is for adjustments. To change any of the adjustments, use the trackball to highlight an item and press any button to change the setting. The following is a description of each adjustment.

DIFFICULTY:

The difficulty adjustment alters how the pins react to change how easy or hard it is to get a strike. The effect is almost imperceptible but it does affect player's scores. The range of values is *VERY EASY, EASY, MEDIUM DIFFICULTY, DIFFICULT,* and *VERY DIFFICULT.* Default value is *MEDIUM DIFFICULTY.*

TRACKBALL SIZE:

This sets the sensitivity to accommodate various size trackballs. Set this to match the size of the ball on the cabinet. Sizes are 2.0 inches, 2.5 inches (default value), and 4.5 inches.

COINS PER CREDIT:

This selects the number of coins required to award one credit. Possible values are 1 through 5 and *FREE PLAY.* Default is *1 COIN PER CREDIT.*

ATTRACT SOUNDS:

The music played during the attract sequence can be set to half the volume of other sounds or turned off completely. Typically they would be set to *FULL* for arcades, *HALF* for bars, bowling alleys, and such and *OFF* in small locations like convenience stores. Default is *HALF.*

CLEAR AUDITS:

Use this to clear the audits at the top of the set-up screen.

DEFAULT HIGH SCORES:

Use this to reset all the high score tables back to their factory defaults. High scores can also be reset by holding down both hook switches while the power is turned on. This can be done without opening up the cabinet.

DEFAULT ADJUSTMENTS:

Use this to reset all of the adjustments back to their factory default settings.

TICKETS:

The following four audits apply only if the cabinet is equipped with a ticket dispenser. Tickets can be awarded for a variety of accomplishments. The first three adjustments are for *Regulation* and *Flash-O-Matic* only. The first sets the number of tickets awarded if a player reaches 225 in *Regulation* or 5600 in *Flash-O-Matic.* The second adjustment sets the number of additional tickets awarded if a player reaches 275 in *Regulation* or 7200 in *Flash-O-Matic.* The third ticket adjustment sets the number of tickets awarded to a player for getting a strike in the beer frame (frame 5). The fourth ticket adjustment is for *Black Jack* only. It sets the number of tickets awarded to a player for getting black jack (a one and a strike on two throws). All four tickets award adjustments default to 0 (no tickets).

EXIT:

This item allows you to exit from the set-up screen back to game mode.

TICKET DISPENSER

An optional ticket dispenser may be connected. The connector on the *CAPCOM BOWLING* board is a Molex #22-23-2041 which mates with a Molex #22-01-2047. This connector is pinned out as follows:

1	Opto (notch sensor)	3	Motor
2	Ground	4	+12



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