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WORLD'S PREMIER GAMES

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POP IT FOR GOLD

MANUAL

PLEASE READ FIRST BEFORE PLUGGING IN MACHINE

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AMERICAN AMUSEMENT MACHINE ASSOCIATION

Amusement & Music Operators Association

INTERNATIONAL ASSOCIATION OF AMUSEMENT PARKS AND ATTRACTIONS MEMBER

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General Game Play

The main object of the game is to pop the balloon which awards the Jackpot value.

The game consists of a rotating pointer, a stop button, and an inflating balloon. The player uses the stop button to stop the pointer. The pointer rotates over a dial that contains values such as tickets, add air, and a Jackpot Zone. When the pointer stops over a zone representing a ticket value, the corresponding number of tickets is awarded. Every time the pointer is stopped within the "Add Air" zone, a shot of air is added to the balloon. When the "Double Air" zone is hit, a double shot of air is added. If the Jackpot zone is hit, an instant win is awarded, and the balloon continues to inflate until it pops. Therefore, a player can win by either a single Jackpot hit, or by an accumulation of air.

Loading Balloons

1. Press the load button① to disengage the air connection so that the balloon wheel② can be turned freely.
2. Stretch the balloons over the air nipples③ on the balloon wheel.
3. Pull the balloon so that the rolled end of the balloon seats against the barb on the air nipple.
4. Rotate the balloon wheel by hand as necessary in order to easily access all of the balloon nipples.
5. Press the load button again to reengage the air connection.
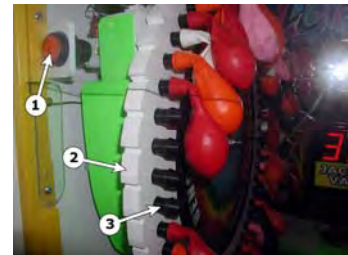
Note: If the load button is not pressed to reengage the air connection after loading, the machine will automatically do it when a credit is purchased so that the game is always ready to play.

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Technical Description

Pointer Operation

The pointer① is driven by a stepper motor②. There is a hub attached to the shaft of the stepper motor that contains a pin③. The pin passes through an opto sensor④ once per revolution. Since we know how many stepper motor steps there are per revolution, and we know when the pin passes through the opto (home position) we know the dial location when it stops. Calibration is possible to align the pointer positions exactly on the dial (see programming options).
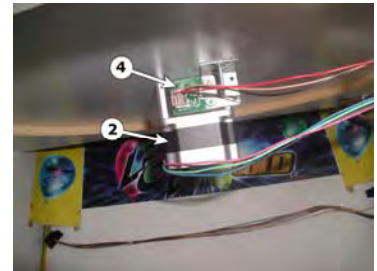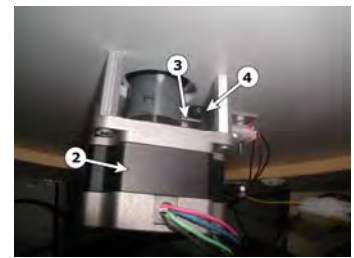
Balloon Inflation

The balloon wheel① contains 50 air nipples② that each hold one balloon. The outer edge of the wheel is shaped to act as a ratchet. A pawl③, driven by a dc motor, increments the balloon wheel into position. There is a cam④ with a roller switch⑤ which determines the pawl position. To rotate the balloon wheel, the motor is momentarily activated by the controller pcb until the switch closes. The switch then provides power to the motor until it reaches the detent in the cam and opens.
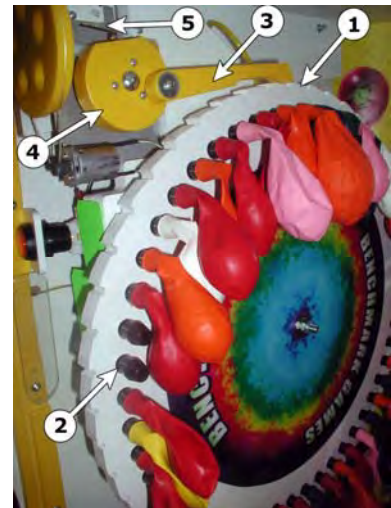
A linear stepper motor is located behind the balloon wheel. The linear stepper disengages the air connection before the wheel increments, and reengages the air connection when the wheel is in position.

An air hose is connected between the air connection and an air pump located at the bottom of the game.

There is no reservoir; each blast of air is accomplished by simply turning the pump on.

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Balloon Sensor Operation

An opto transmitter① located in the balloon support arm② emits upward toward an opto receiver③ located at the top of the cabinet.

When a balloon is preloaded with air, the balloon opto senses the inflation level and the pump stops running. The balloon opto also senses the absence of a balloon when it pops. There is a sensitivity adjustment preset at the factory.
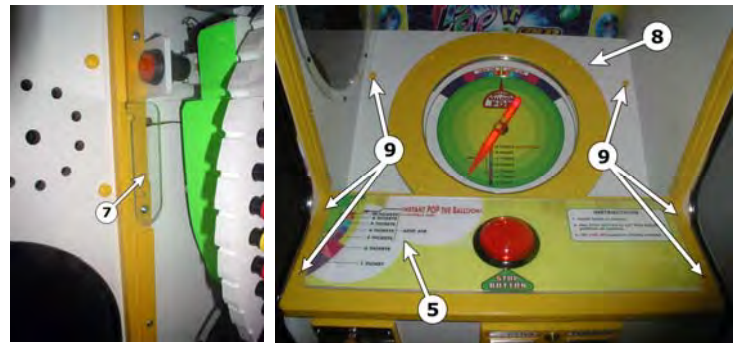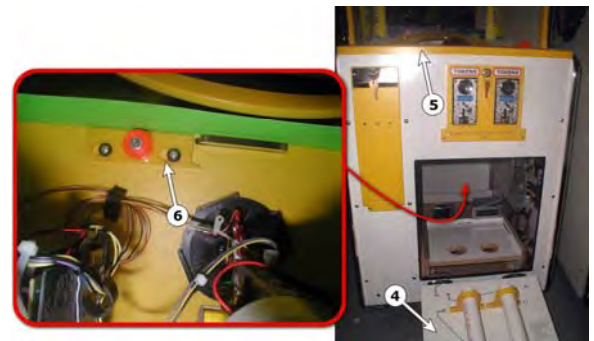
Accessing the Inside of the Game

The lift glass slides up to provide access to the balloon ratchet wheel and playfield area. To open the front glass:

1. Open the front door④
2. Reach under the control panel⑤ and slide the lock bar⑥ to the unlocked position
3. Slide glass up until it passes the glass clips⑦ where it will rest without needing to be held

Press glass clips⑦ toward outside of cabinet to release glass and close.

Further access to the bottom inside of the game can be accomplished by removing the control panel and the playfield. Each the control panel⑤ and the playfield⑧ attach with easily accessible screws⑨. Remove decorative caps to access screw heads.

Note: All lighting in the Pop It Machine is provided by maintenance free LED's.

Balloon Sensor Adjustment

The balloon sensor adjustment is used to set the opto transmitter power so that the balloon can be accurately sensed without false triggering.
Note: If you are experiencing false jackpots, make sure you are using Benchmark balloons that say Pop-It on them. The balloons provided by Benchmark have been chosen for their consistent opaque properties. Consistent operation can not be guaranteed with any other balloons.
To adjust the balloon sensor:

1. Power the machine off.
2. Gently turn the adjustment potentiometer① fully counterclockwise. Be careful not to overturn.
3. Power the machine on and wait for the machine to go through its boot cycle.
4. Very slowly, turn the adjustment potentiometer clockwise while watching the air valve shaft② located behind the balloon wheel③. Stop turning the potentiometer immediately when the air valve shaft begins to move toward the wheel (to the right). Sensitivity adjustment is now complete.
5. Power the machine off and back on again. Observe the air valve shaft. The air valve shaft should back out toward the side of the cabinet (left) and then reverse toward the balloon wheel (right) and stop. The game should then inflate a balloon and play normally.
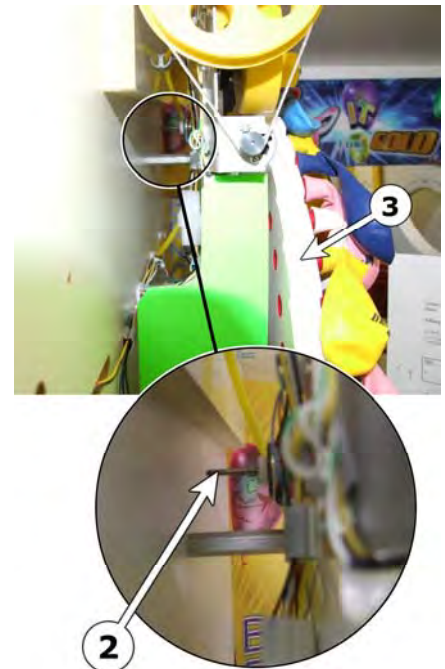
Programming Options

1.) Entering Programming Mode

To enter program mode, press and hold the left button located on the Power Distribution Board (the lower button). After 2 seconds, "TOTALS" will appear on the LCD Display. At this time, release the button. "COINS IN" with the number of coins received will be displayed. The game is now in Program Mode**. PLEASE NOTE** that from this point forward, the lower button on the Power Distribution Board and the upper button on the Power Distribution Board are the buttons used. Each programming option is displayed on the LCD Display (located in the lower cabinet at the rear of the cashbox enclosure), with the functions shown for Buttons 1 and 2.

2.) COINS IN

The total coins received through the coin mechanism are displayed. The total will rollover to zero when it reaches 1,000,000,000. Depressing button 2 will display "TICKETS OUT".

3.) TICKETS OUT

The total tickets dispensed are displayed. The total will rollover to zero when it reaches 1,000,000,000. Depressing button 2 will display one of two options:
If there are tickets that have not been dispensed, the Display will show "CLEAR TICKETS OWED?", otherwise it will display "ENTER PROGRAM MODE?"

4.) "CLEAR TICKETS OWED?"

This option is displayed if there are tickets that are owed that have not been dispensed, and will show the number of tickets. Depressing Button 1 will clear these tickets from the system, and "TICKETS CLEARED" will be displayed. Depressing Button 2 will display "ENTER PROGRAM MODE?"

5.) "ENTER PROGRAM MODE?"

Depressing Button 1 at this time will enter the area of Program Mode where parameters may be changed. Depressing Button 2 will return the game to Run Mode.

6.) "ENTER PASSCODE"

To be able to change programming parameters or reset the counters, a 4-digit passcode must be entered. The default passcode is 0000. To enter the passcode, Depress Button 1 to change the digit from 0 to 9, then press Button 2 to move to the next digit. After all digits have been entered correctly, depressing button 2 will Display the first programming option, "CHANGE PASSCODE?".

7.) "CHANGE PASSCODE?"

Depressing Button 1 will allow for changing the passcode. Depressing Button 2 will move to "DISPLAY CONTRAST".

IMPORTANT!!! ONCE THE PASSCODE IS CHANGED, THE DEFAULT OF 0000 WILL NO LONGER WORK! BE SURE TO SAVE THE PASSCODE IN A SAFE PLACE!
Entering the new passcode is accomplished in the same way that entering the passcode is done, as explained in **6.)** .

8.) DISPLAY CONTRAST
This option sets the contrast for the LCD Display. Depress and hold Button 1 until the desired contrast is reached, then release Button 1. Depressing Button 2 will move to the next option, "PLAY MODE VOLUME".

9.) PLAY MODE VOLUME
This option sets the speaker volume during game play. When this option is entered, the game's background music will play continuously. Depressing Button 1 will increase/decrease the volume. As long as Button 1 is depressed, the volume will increase until the maximum is reached, then decrease until the volume is off. Depress and hold Button 1 until the desired volume is reached. Depressing Button 2 will display the next option, "ATTRACTION MODE VOLUME".

10.) ATTRACTION MODE VOLUME
This option sets the speaker volume during Attraction Mode. When this option is entered, the game's background music will play continuously. Depressing Button 1 will increase/decrease the volume. As long as Button 1 is depressed, the volume will increase until the maximum is reached, then decrease until the volume is off. Depress and hold Button 1 until the desired volume is reached. Depressing Button 2 will display the next option, "JACKPOT MODE VOLUME".

11.) JACKPOT MODE VOLUME
This option sets the speaker volume during a Jackpot Event. When this option is entered, the game's background music will play continuously. Depressing Button 1 will increase/decrease the volume. As long as Button 1 is depressed, the volume will increase until the maximum is reached, then decrease until the volume is off. Depress and hold Button 1 until the desired volume is reached. Depressing Button 2 will display the next option, "ATTRACTION FREQUENCY".

12.) ATTRACTION FREQUENCY
This option sets the frequency at which the attraction mode occurs. The settings are from OFF to every 30 minutes. Depressing Button 1 will change the settings in 1-minute increments from OFF to 30 minutes, then back to OFF. Depressing Button 2 displays the next option, "COINS PER CREDIT".

13.) COINS PER CREDIT
This option sets the number of coins required for a credit. The settings are from 1 to 4 coins per credit. Depressing Button 1 will change the setting from 1 to 4, then back to 1. Depressing Button 2 displays the next option, "MERCY TICKET"

14.) MERCY TICKET

This option sets the default number of tickets paid. The settings are from OFF to 3 tickets. Depressing Button 1 will change the setting from OFF to 3, then back to OFF. Depressing Button 2 displays the next option, "JACKPOT START VALUE"

15.) JACKPOT START VALUE

This option sets the starting value of the jackpot after it has been won. The settings are from 50 to 300 in increments of 50. Depressing Button 1 will change the setting from 50 to 300, then back to 50. Depressing Button 2 displays the next option, "JACKPOT MAX VALUE"

16.) JACKPOT MAX VALUE

This option sets the maximum value of the jackpot. The settings are from 300 to 999 in increments of 50. Depressing Button 1 will change the setting from 300 to 999, then back to 300. Depressing Button 2 displays the next option, "JACKPOT INCREMENT"

17.) JACKPOT INCREMENT

Every time a coin is inserted into the game, the jackpot value is incremented by this amount. The setting is from an increment of 1 to 10. Depressing Button 1 will change this setting from 1 to 10, and then revert back to 1. Depressing Button 2 will display the next option, "AIR BLAST TIME".

18.) AIR BLAST TIME

This option sets the duration for the air blast every time "Add Air" is hit. The settings are from 0.90 seconds to 6.00 seconds in increments of 0.05 seconds. Depressing Button 1 will change the setting. The direction of the air blast duration (increasing/decreasing) changes every time the button is released and depressed again. Note that the setting is for a single "Add Air" event. If "Double Air" is hit, then the air blast duration will be double this setting. Depressing Button 2 displays the next option, "CALIBRATE SPINNER?"

19.) CALIBRATE SPINNER

This option calibrates the spinner for accuracy. Depressing button 1 will enter the calibration mode. Depressing Button 2 displays the next option, resetting the total for COINS IN. If Calibration Mode is entered, "CALIBRATION" will be displayed along with the current calibration setting. The procedure for calibration is as follows: Depress the Play Button once. The spinner should stop at the center of the jackpot area on the dial. The calibration range is from –127 to +127. If the spinner does not stop in the center, adjust the calibration using Button 1. A more positive Calibration Number will move the spinner to the right, and a more negative number will move it to the left. Change the number in small increments, then depress the Play Button so that the spinner spins and then stops again. Repeat this procedure until the spinner is

centered in the Jackpot Area. Depressing and holding Button 1 will change the number as long as the button is depressed. The direction of the calibration number (increasing/decreasing) changes every time the button is released and depressed again. Depress Button 2 when finished, which will advance to the next option, "COINS IN".

20.) RESETTING TOTALS
The totals displayed at the beginning of Program Mode(COINS IN, TICKETS OUT) may be reset to zero here. The total number for each will be displayed. Depressing Button 1 will clear the total, and zero will be displayed, confirming that the count has been cleared. Depressing Button 2 will display the next total. Depressing Button 2 after all of the totals have been displayed will display the next option, "ENTER PROGRAM MODE?"

21.) "ENTER PROGRAM MODE?"
This option gives the opportunity to re-enter program mode if it is necessary to change any options again. Depressing Button 2 leaves Program Mode and the game returns to normal, Run Mode.

DEFAULT SETTINGS

PASSCODE	0000
PLAY MODE VOLUME	20
ATTRACTION MODE VOLUME	42
JACKPOT MODE VOLUME	MAX
ATTRACTION FREQUENCY	5 Minutes
COINS PER CREDIT	1 Coin
MERCY TICKET	OFF
JACKPOT START VALUE	300
JACKPOT MAX VALUE	999
JACKPOT INCREMENT	5
AIR BLAST DURATION	1.8 Seconds
CALIBRATION FACTOR	0

FAULT CODES

E-1	Out of Tickets
E-2	Balloon Reload Fault

Descriptions of the Faults are also shown on the LCD Display.

Troubleshooting Guide

It is helpful to read the Technical Description section of this manual before attempting to troubleshoot.

Symptom	Problem	Action
Pointer stops on dial, but does not pay tickets, blow balloon, or activate sound	Pointer opto signal is not being seen by controller	An led light should illuminate on the opto pcb every rotation when the pin in the motor hub passes through the horseshoe shaped sensor mounted on the board. If the light does not go on: 1. Check to make sure the pin is actually passing through the sensor. 2. Check power to the board 3. Replace board if above troubleshooting fails. If the light does come on: Check the signal and connection back the stepper pcb. The output of the opto board should transition low when the opto sensor is blocked (led is on). If continuity is good back to the controller board and the output does not transition low, replace opto board.
Pointer stops on dial, but awards the wrong value	Pointer is out of calibration	Recalibrate the pointer. See programming options.
Balloon pops, but game does not award Jackpot	Balloon opto sensor is dirty.	Clean opto transmitter① located in balloon support arm② and opto receiver③ located in the top of the machine.

	Opto transmitter or receiver has no power or or is not working.	The light on the <u>opto receiver</u>③ should be on when the opto beam is interrupted and off when uninterrupted. If light is always off: • check power to the receiver • If power is OK, replace receiver board If light is always on: • check power to the transmitter. • If power to the transmitter is OK, replace transmitter and receiver.
Balloon does not fill properly	Balloon opto is blocked or not working	Opon power up, if the balloon opto is blocked or not working, the linear stepper motor will back away from the balloon without running forward again to seal the air connection. Make sure nothing is blocking the balloon optos. Follow the steps under the "Balloon pops, but game does not award Jackpot" symptom in this troubleshooting section.
	Pump is not running	Check pump relay for power and to see if it is operating. You can manually activate the relay and turn the pump on by connecting the control side of the relay to ground. Check AC voltage at the pump when relay is activated. The pump is an AC motor.
	Air connection driven by linear stepper at back of balloon ratchet wheel is leaking	Check that o-ring is properly seated and in good condition. Check to see if balloon ratchet wheel is properly positioned over the air connection on the linear stepper. Linear stepper may not be moving. Make sure the linear stepper moves forward to engage the air connection after an automatic wheel increment cycle.
	Disconnected air line or air line leak	Check hose connections and hose between pump and air connection.
Game jackpots prematurely without popping a balloon Or When the balloon is	Balloon opto is shooting through balloon making the machine think the balloon has popped or not	1. Use Benchmark recommended balloons that will adequately block the opto beam. 2. Check balloon sensor sensitivity adjustment.

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preloaded with air at power-up, the balloon reaches the balloon opto, but deflates, rotates and tries again.	reached the sensor.	