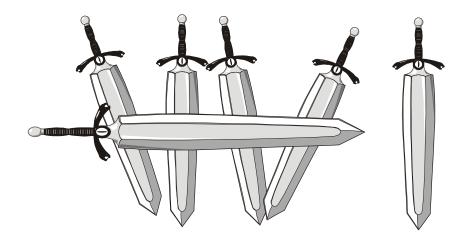


CHAPTER



Troubleshooting



WARNING: Do not remove or install any connector when power is turned on. Doing so will damage the CPU Board Assembly or the hard disk drive and void the warranty.

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Game Does Not Start

Symptom	Problem	Suggested Solution
Machine appears non-functional No audio	Lack of electricity	Check that Power Switch has been turned on Verify that line cord is plugged fully into receptacle and into power supply. Try another power outlet.
No Illumination No video display	Wrong voltage	 Ensure power supply line voltage switch matches local line voltage. Using voltage meter, correctly adjust +5V output on power supply using adjustment knob.
	Faulty line cord	 Test line cord, power plug, and IEC connector for breaks or damage. Replace if necessary. Verify continuity of each wire in cord.
	Poor connection	 Ensure cabinet wiring harness connectors are fully seated in corresponding power supply and board connectors. Inspect wiring for breaks or damage.
Machine appears non-functional. Currency acceptor price indicator is illuminated	CPU Board Assembly not operational	 Inspect board assemblies under low light level conditions. A glow will be seen from the Light Emitting Diodes if there is voltage in the processor circuits. This does not mean that voltages or signals are as they should be, but it indicates that boards are receiving some DC power from power supply. The power supply fan should also be operating. Turn AC power off. Inspect board assemblies. Ensure JAMMA wire harness connector is attached and fully seated onto mating board connector. Check other wiring harness connectors in same way. Verify game switches and jumpers are set correctly. Refer to Board Configuration Chart for variables and default settings.
	Power supply out of voltage tolerance.	 Turn AC power on. Using 20V DC setting on digital voltmeter, measure voltages at power connector pins. Adjust +5V source if necessary. Refer to Cabinet Wiring Diagram for specific wiring information and voltage limits. Using 2V AC setting on digital voltmeter, measure same DC voltages as above. A reading indicates that supply voltages are unstable and may contain ripple or noise.

Game cannot be played

Symptom	Problem	Suggested Solution
Game does not accept currency or tokens. Game does not start. Audio present Video present	Blocked coin path.	 Unlock and open cash door. Empty cash box and inspect revenue for counterfeit currency. Remove items that block path from coin mechanism. Ensure proper mounting of each mechanism. Clear currency path. Reinstall and latch mechanism.
	Poor leveling	Verify mechanisms are level when doors are closed. Repair or replace bent or damaged coin door. Adjust cabinet leg levelers to keep mechanisms vertical.
	Incorrect software setting	Enter Menu System by pressing TEST MODE switch. From SELF TEST menu, choose COIN OPTIONS. Confirm pricing and setup of each mechanism. Choose CONTROL TESTS to check operation of each coin or bill mechanism.
Game accepts currency or tokens. Game does not start. Audio present Video present.		 Ensure proper mounting of each mechanism. Verify each release latch is closed and locked. Test acceptance and rejection functions with known good and bad coins. Ensure no loose parts or wires are caught in hinges, latches, or switch contacts. Inspect illumination of external coin door indicators (i.e., pricing, flashing arrows). Check wiring continuity of connectors and cables from CPU Board to coin mechs. Enter Menu System by pressing TEST MODE switch. From SELF TEST menu, choose COIN OPTIONS. Use tests to confirm pricing and setup of each mechanism. Check for continuity in each suspect switch connection (Common to Normally Open or Common to Normally Closed) Replace faulty switches (bent levers, broken actuators, etc.) Place coin mechs in known good unit to verify operation.
 Bill validator fails after field installation. Coin mechanisms operate properly. 		Enter Menu System by pressing TEST MODE switch. From SELF TEST menu, choose COIN OPTIONS. Confirm pricing and setup of each mechanism. Check validator switch settings against manufacturer's instructions. Check illumination of external coin door indicators (i.e., pricing, flashing arrows). Free parts or wires caught in hinges, latches, or switch contacts. Verify seating of harness connectors. Check validator cable continuity. Place bill validator in known good unit to verify operation.
 Coin indicators do not light. Game operates normally.	Bad fuse.	Check coin light fuse and wiring harness. Replace bad fuse.

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Audio Problems

Symptom	Problem	Suggested Solution
 Audio non-functional. Video present. Game operates normally. 	Volume set too low	Press TEST MODE switch to enter Menu System. From SELECT TEST menu, choose ADJUST VOLUME. Verify that attract and game volume levels are not set to zero. Change to appropriate levels. Return to previous menu and choose SOUND TESTS. Verify operation of each speaker.
	Faulty hardware	Turn off AC power. Remove grills and inspect speakers. Ensure no loose parts or wires are caught in speaker cones, terminals, mounting screws, or stuck to magnets.
	Poor voltage	 Turn AC power on. Using 20 V DC setting on digital voltmeter, measure voltages at power connector pins. Verify +5V, -5V, and +12V sources. Refer to Cabinet Wiring Diagram for specific wiring information and voltage limits. Using 2 volt AC setting on digital voltmeter, measure voltages at speaker terminals. Any reading here indicates supply voltages are unstable and may contain ripple or noise. Place speaker in good machine to verify operation.
Audio muffled, distorted, or missing frequencies. Constant, low hum.	Faulty speaker	 Press TEST MODE switch to enter Menu System. From SELECT TEST menu, choose SOUND TESTS. These verify some audio functions. Using 2 volt AC setting on digital voltmeter, measure voltages at speaker terminals. Any reading here indicates supply voltages are unstable and may contain ripple or noise. Place speaker in good machine to verify operation.
	Wrong speaker	Turn AC power off. Remove grills and inspect speakers. Ensure each coaxial speaker is full range (100 to 10,000 Hz response) and rated for at least 10 watts.
	Faulty wiring	 Check cabinet wiring is correct for game. Verify all cabinet wiring provides separate wires (not a common return) for each speaker. Ensure all ground wires are connected. Refer to Cabinet Wiring Diagram for specific wiring information.
Weak, low frequencies. Thin or hollow sound quality	Incorrectly phased speakers	Inspect speaker wiring and reverse back to correct position. See Cabinet Wiring Diagram.
Monaural audio	Faulty wiring	Verify cabinet wiring is correct. Check for shorted wires. Refer to Cabinet Wiring Diagram.



Symptom	Problem	Suggested Solution
 Monitor appears non-functional. Audio present Controls operate normally. 	Poor signal	 Verify AC power is connected to video monitor. Inspect neck of CRT under low light level conditions. If there is voltage in filament circuits, you will see a glow near the CRT base. This indicates monitor circuits are receiving power, not that voltages or signals are proper. Turn AC power off. Verify video signal and remote adjustment board connectors are fully seated on video monitor board assembly. Check other monitor connections in the same way. Examine AC line fuse on video monitor. If faulty, replace with fuse of proper voltage and current rating. Ensure no loose parts or wires are caught on chassis or mounting brackets.
	Bad settings	Ensure brightness and contrast are not at minimum levels.
 Power-up self test runs. Game does not appear. No audio. 	Error message	Record error messages. Press TEST switch to enter menu system. From SELECT TESTS menu, choose DISK TESTS. These tests verify hard disk drive functions.
	Faulty hard disk drive	Turn off AC power. Unlock and open front door. Ensure hard disk cable connector is fully seated on CPU Board. Ensure all hard drive mounting screws are installed. Ensure hard disk, ROM set and CPU Board Assembly are correct part for game. Each component is labeled with the assembly number and software or hardware version.
	Poor voltage	 Turn AC power on. Use 20V DC setting on digital voltmeter to measure voltages at power connector pins. Verify +5V source. Using 2V AC setting on digital voltmeter, measure same DC voltages as above. A reading indicates that supply voltages are unstable and may contain ripple or noise. Compare LED states with indicator charts.
 Monitor fails to lock onto signal and provide stable picture. Colors missing, etc. 	Poor sync	 Check connectors and cables for wiring continuity from CPU Board Assembly to monitor. Verify jumpers are set correctly for monitor. Ensure monitor is correct for game. Incorrect resolution results in horizontal tearing or complete loss of sync. Place monitor in working machine to verify operation.
Game operates normally. Picture wavers or rolls, has dark bars, uneven colors, etc.	Faulty wiring	Check connectors and cables for wiring continuity from CPU Board Assembly to monitor. Ensure all cabinet ground wires are connected, especially at monitor chassis. Place monitor in good machine to verify operation.
	Interference from other equipment	Move cabinet away from machines, appliances, other games, etc. Very strong electrical or magnetic fields are emitted from some equipment when operating normally.

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Miscellaneous

Symptom	Problem	Suggested Solution
Indicator lamps intermittent or non-functional. Game starts and plays normally.		 Open marquee. Remove fluorescent tube from holders. Install new lamp if cracks or darkened ends are found. Clean tube. Verify that lamp and starter pins make good connection with socket contacts. Measure Fluorescent Lamp Assembly AC voltages. Check wiring and connector continuity from Power Supply connector to lamp assembly. Ensure Fluorescent Lamp Ballast is rated for local AC line voltage and frequency. Check for continuity of both fluorescent lamp filaments, starter, and ballast. One at a time, verify that lamp, starter, and ballast operate by placing each in a known good unit. Examine DC fuse on Electronics Assembly shelf. If any fuse is faulty, replace with identical fuse from spare parts bag. Replace spare fuse when repairs are complete.
 Game operates normally. Fan noisy.		 Check bottom and rear of cabinet for blocked air flow. Move game away from heat sources. Turn AC power off. Remove dust from vent holes with high power vacuum cleaner. Unlock and remove rear door. Ensure fan is connected to wiring harness.
Game resets randomly.		Check fan assemblies on CPU Board Assembly. Ensure fans are connected to power sources. Check cabinet and Electronics Assembly ventilation holes for obstructions. Clear obstructions and allow ventilation holes access to fresh air.
 Error messages appear. Game does not start. No audio.		Check any assembly identified in error message. Call your authorized distributor for help with unresolved screen messages.