

## **Arcade Legends Service Procedures**

Arcade legends machines as well as the original Ultimate Arcade machines are all based on 'off the shelf' Pentium 3 computer components. With this in mind most problems with these machines can be fixed by troubleshooting the machine as if it was a home computer. These procedures do NOT apply to the Ultimate arcade 2 or Arcade Legends 2 series machines.

### ***Tools needed:***

1 #2 Phillips screwdriver

1 VGA monitor (A standard computer monitor)

1 ps/2 style keyboard (a computer keyboard with the small round connector that plugs into the computer)

### **PROBLEM #1**

The machine starts up and only white dots are displayed on the screen

-OR-

The lights on the machine turn on but nothing is displayed on the screen-

Please open the coin door and look for a lit power indicator on the front of the computer. If no light press the large top button on the front of the computer (Computer -1/ white tower style case), a silver bar with 4 raised bumps near the front right corner of the computer (beige computer-2 desktop style case, and black computer -3 desktop style case), or the red button on the unfinished metal desktop style case. Once the computer powers up you see dots scrolling diagonally across the screen or a blank screen...

This is normally caused by BIOS settings that are incorrect for various reasons. What you're actually seeing are error messages that are intended to be displayed on a VGA computer monitor, but as this cabinet has an CGA monitor the error messages cannot be displayed correctly.

These settings control how the computer is configured when it is turned on. The settings can be corrupted by a dead battery on the motherboard, static electricity discharged to the computer by a defeated ground connection to the outlet, or power surges going into the machine from the wall outlet. It is strongly suggested that you plug this machine into an adequate surge suppressor, not just a power strip.

If your machine is 2 years old or older, go buy a CR-2032 battery and replace the battery inside the computer. (instructions to follow shortly)

### ***SERVICE Procedure:***

1. Unplug the machine from the wall outlet.
2. Remove the access panel from the rear of the cabinet.
3. Unplug the keyboard cable that's currently plugged into the computer, and plug your keyboard in there. Do NOT use the mouse port as it has no function. The keyboard port is the lower port on the desktop style cases, and the leftmost port on the upright style cases. Later production machines do not use any keyboard cable at all to communicate to the interface board, all the communication between the computer and interface is done through the USB cable.
4. Unplug the monitor cable that's currently plugged into the computer, and plug your VGA monitor in there.

Note: There's a very good diagram of the cable connection on the inside back cover of the instruction manual. If your is missing you can download it from our website in the manuals section.

5. Turn on your VGA monitor.
6. Turn on the cabinet power switch (on the top of the Arcade Machine)
7. Press the power button on the front of the computer.

Note: The power button is the large top button on the front of the computer (Computer -1/ white tower style case), a silver bar with 4 raised bumps near the front right corner of the computer (beige computer-2 desktop style case, and black computer -3 desktop style case), or the red button on the unfinished metal desktop style case.

8. Once the computer powers up, tap the appropriate key on the keyboard until the BIOS setup utility menu appears.

Note: The BIOS setup sheets are located in the service bulletins section and detail what keyboard key you need to press to get into the BIOS setup utility.

9. Follow the appropriate BIOS setup sheet for your computer only changing those items on your computer that don't match the settings listed on the document.
10. Save the settings and exit the setup utility.

Note: When the computer powers up the next time you will see (on your computer monitor) a small blue message saying 'Joshua kernel loading', then your monitor will display something like 'out of range' or it will 'go to sleep'- this is NORMAL.

11. Again turn off your machine and unplug the cabinet power cord, disconnect your keyboard and monitor, then reconnect the game controller cable and game video cable.
12. Plug in the machine, turn it on, and verify that everything works like it should.
13. Re-install the rear access panel.

That's all there is to it ! This should be done every 4 years or so depending on the quality of the replacement battery.

## **PROBLEM #2**

Buttons and joysticks are not functional, ONLY the trackball works

-OR-

The joysticks and buttons are slow to respond, and eventually the game 'freezes'

-OR-

The machine takes an unusually long time to start up

-OR-

The machine constantly displays a 'black screen'

This problem can occur immediately after delivery of a new machine, or after a machine has been moved from it's previous location. There is a small external board inside your machine that interprets the joystick position, button presses, and trackball movements and translates those signals into signals that the computer can understand then 'feeds' those signals into the computer through the keyboard and USB ports of the computer. All control signals except the trackball signal use the keyboard port and the trackball uses the USB port. What usually happens in this scenario is the keyboard cable going into the computer has partially pulled out of the keyboard port of the computer or there was a stuck button when the computer was turned on.

When the computer inside the machine turns on it does a series of self tests and would normally display an error message if an error is found, but we disable the error reporting system in BIOS (because you can't read them anyway with the game monitor). So if a

keyboard error is present the computer 'disables' the keyboard port so nothing but the trackball works. If by chance the computer passes the power on self test but loses communication to the interface board through the keyboard cable after the game software is loaded you may have a machine the 'freezes' at one of the screens, the monitor goes completely black, or the controls become sluggish just before the machine does either of the previous nasties.

***SERVICE Procedure:***

1. Unplug the machine from the wall outlet.
2. Remove the access panel from the rear of the cabinet.
3. Remove the Phillips screw than holds the plastic anchor wrapped around the end of the keyboard cable that's plugged into the back of the computer.

Note: Refer to the inside back cover of the instruction manual for a good diagram of the cable connections.

4. GENTLY unplug the keyboard cable then plug it back in.
5. Plug in the machine and turn it on, then wait for the game selection menu to appear then try your controls.
6. If all is good, reinstall the back panel onto the cabinet and start playing, If not go to the next step.
7. Turn off the machine and check your buttons:
  - a. Gently depress each button and listen for it to 'click'.
  - b. Gently release each button and listen for it to 'click'.

NOTE: If you didn't hear a click both ways you may have a defective switch which will require removal of the controls panel.

- Remove the Phillips screw (4) from each corner of the panel (where the trackball and joysticks are mounted).
- Firmly grasp both joysticks and pull upwards- the panel should come out of the cabinet.
- Turn the panel up-side down and observe the operation of the switch on the rear of the offending button.
  - Make sure there are no wires between the white switch and the colored button assembly.

- Make sure there are only 2 wires connected to the switch (the third terminal is unused).
- Make sure the switch is properly seated in the button assembly (it should not move around).
- Make sure to check the service button behind the coin door.
- Ensure that a red 'button' is sticking out of the top of the switch (the small white box on the back of the button).

If any of the above are not as observed on your machine, please correct and retest.

12. Check your joysticks:

- a. Move one of the joysticks up and listen for a 'click'.
- b. Release the joystick and listen for a 'click'
- c. Repeat above for each of the 4 directions on BOTH joysticks.

If any of the above are not as observed on your machine, please correct and retest.

13. With the back panel removed from the cabinet turn ON the machine and look for 2 BRIGHT lights on the interface board.

14. If all the above are OK, turn off the power and disconnect the keyboard cable plugged into the computer and plug a known good keyboard into it and turn on the power again. If the machine appears to work again, press the up and down arrows on the keyboard to see if the game selection menu moves. If it now moves you may have a defective keyboard cable between the computer and interface board, a defective interface, a defective button or joystick switch. If the menu does NOT move check the BIOS settings from the above procedure then test again. If ALL else fails to resolve the problem try reloading the CD that came with the machine. If after all this the machine still doesn't start working properly contact Chicago Gaming Company Tech support department for further instructions.

### **PROBLEM #3**

The machine starts normally then shows a screen asking for an 'unlock code'.

This occurs when the machine is started up with the recovery CD installed in the CD drive. These machines have the operating software installed at the factory so installation of the game CD is not necessary, it's provided in case the computer requires service and the game software needs to be reinstalled to the hard drive.

***SERVICE Procedure:***

Simply remove the CD from the CD drive and restart the machine.

**PROBLEM #4**

The machine starts normally then occasionally crashes to a black or grey screen when a button is pressed (mostly the exit game button).

This could happen because of corrupt software on the hard drive due to a failing hard drive, a recently installed game pack that has a corrupt image, or data on the hard drive that has changed because of power spikes including removing the power cord while the machine is operating or quickly cycling the power switch on and off or improper grounding of the machine.

***SERVICE Procedure:***

Start by locating your recovery CD and note the serial number on the CD case. Also start the machine and go to the service menu and note the MCID number located on the lower left of the main service menu screen. If your machine will not operate long enough to get to the service menu you can insert the recovery CD into the CD drive and restart the machine, select 'install' from the menu and note the MCID number from the install code screen. If the computer won't boot from the CD check your BIOS settings as shown in problem #1- specifically the boot sequence. We have noticed during repair of these machines that reinstalling the software from the recovery CD doesn't always correct the integrity of the hard drive so we HIGHLY recommend obtaining a copy of the drive manufacturers diagnostic tools. All newer machines (serial number above aprox. 2000 use Western Digital hard drives, and their diagnostic tools disk image can be found here:

<http://support.wdc.com/download/?cxml=n&pid=999&swid=30>

Download the ISO file using the save option and when finished burn it to a CD. Please follow the directions on download page for directions about how to do this. We then connect a keyboard and VGA monitor to the game computer and start the computer with this newly created CD in the drive. We normally run the drive diagnostic first to ensure the drive actually works correctly using the extensive test. Once the drive passes the diagnostic test we then 'write zeros' to the hard drive using the full option. Once this is done you need to exit the diagnostic tools, remove the CD and replace it with the game restore CD then turn off the power.

With the power off unplug your keyboard and monitor and replug the game monitor and game controller cables and restart the machine. The game should take you to the install menu and you should then select 'install' and call GlobalVR at (408)597-3435 for an install code. They WILL ask you for the CD serial number as well as the MCID code so they have to be EXACT or the install code will be wrong.