

Replacement Instructions For CCFL's on WMS Kristel Monitor

- In this Presentation we'll go through dis-assembly of the Monitor, Panel, Cleaning & Safety Precautions.
- This Power Point has been put together by Ray Holdren, Service Manager of Kristel Nevada in Las Vegas. He is also a **Sencore** Instructor, Teaching CRT & LCD Monitor Repair.
- Most of the pictures were taken by Jerry Langley / Slot Tech at Aladdin Casino, Las Vegas, NV.

Replacing the CCFL – Sharp LQ18E1LW31 LCD Panel

The Sharp & LG Phillips LCD panel contains 6 CCFLs. (3 top, 3 bottom – inside panel)

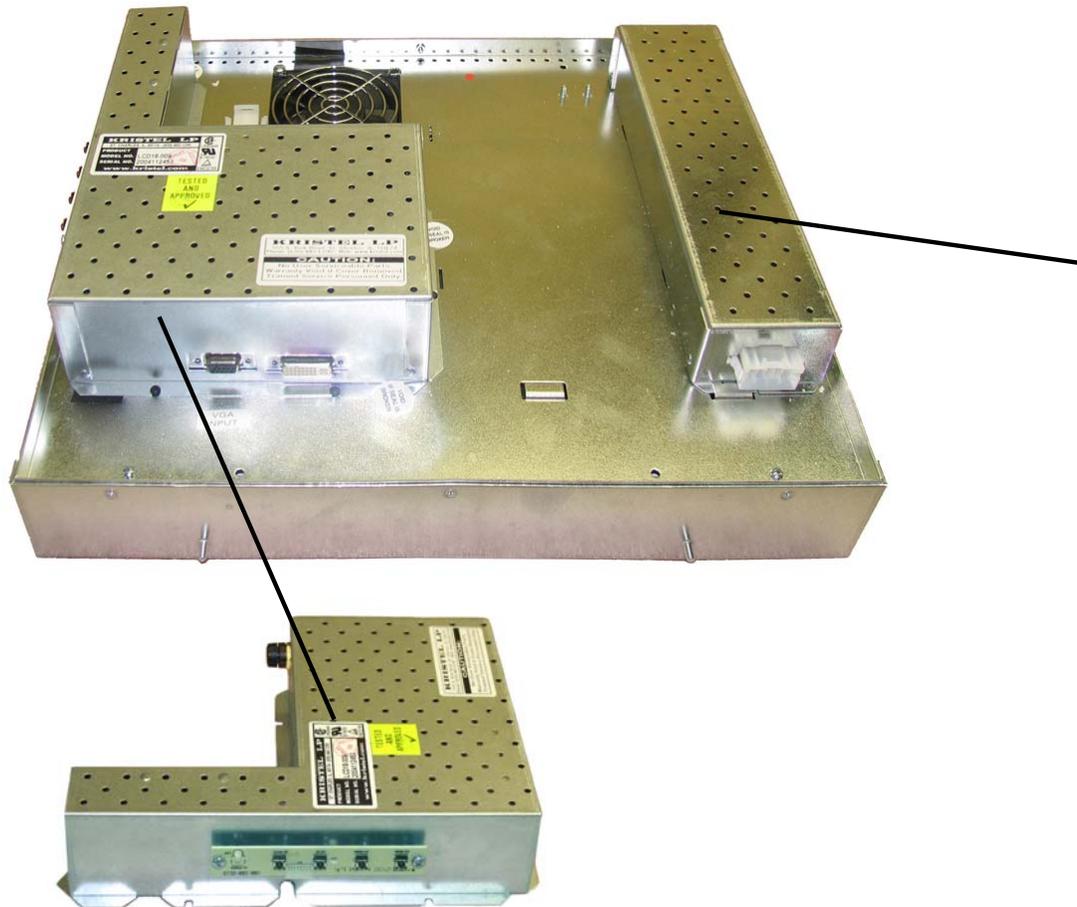
1. CCFL removal and replacement requires that the LCD panel be first removed from the monitor.
2. Secondly the LCD panel itself must be disassembled to gain entry inside the panel.
3. Finally the CCFL assembly can be removed.



- Make sure you have a flat surface and lots of room.
- Create a padded surface so as not to scratch or damage the front of the display.
- Lay the display face down on the surface.
- Be sure to have some screw holders so you don't lose the screws.
- Be sure to wear a static wrist band as electrostatic potentials can damage components on the main circuit board and in the LCD panel itself.

Replacing the CCF- Sharp L18E1LW31LCD Panel

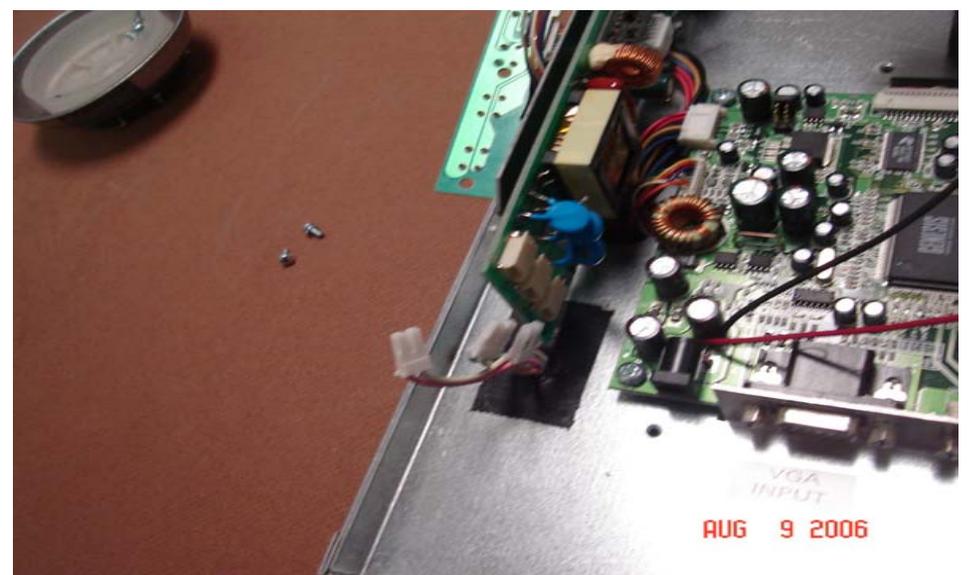
1. Remove the panel over the main board. You will need a special security bit for this. It requires a 3/32 Allen Security bit or a #10 Torx Security bit. (It is similar to an Allen wrench but with a hollow center). It can be purchased from a good hardware store or supplier.
2. Unscrew the user pushbutton board.



3. Remove the metal shield that covers the Touch Screen Board at the right of the display. This requires a Philips head screw driver. Remove and place to the side.

After the Covers are removed,
Disconnect the Ribbon Cable for the Touch Screen Controller
and the 6 Connectors on the Inverter for the CCFL's.

Both Covers Removed

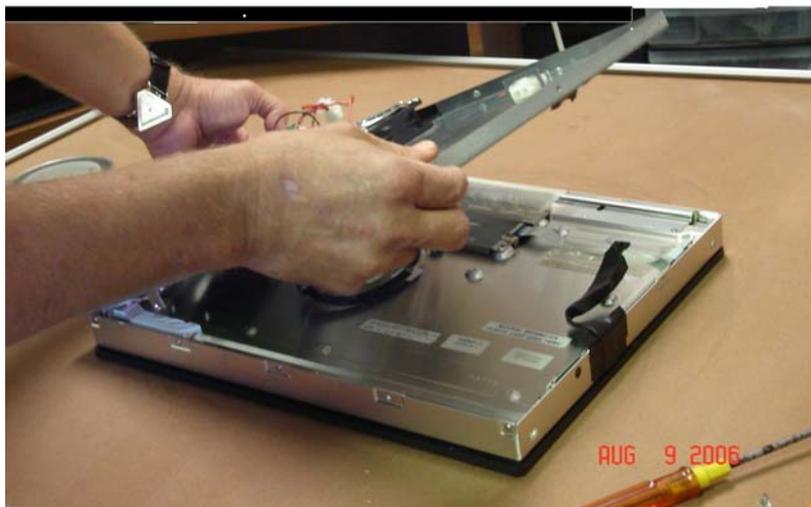


Replacement of CCFL's on Sharp LCD Panel

Remove the 6 Flat head screws and the 2 security screws on the sides.

Flip the panel face up and Remove the outside Bezel or Frame.

Before flipping it back onto its face , place a piece of foam under the panel's face to protect it.



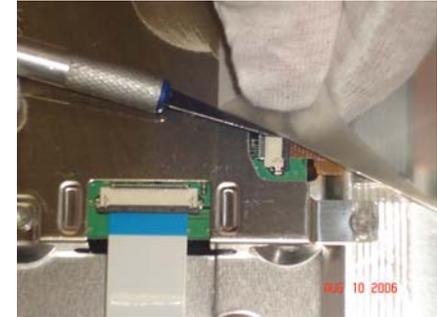
Replacing CCFL's on the Sharp LCD Panel

- Now you have access to the Main LVDS Signal Cable.
- Please Note the WAY the cable is plugged into the socket BEFORE YOU UN-PLUG IT...
- You will need to plug it back in the SAME WAY. If you reassemble it & plug it in backwards you'll blow the LVDS Receiver PCB and that's the end of the Panel.



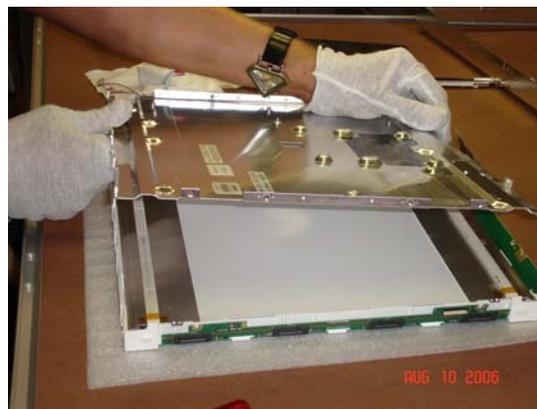
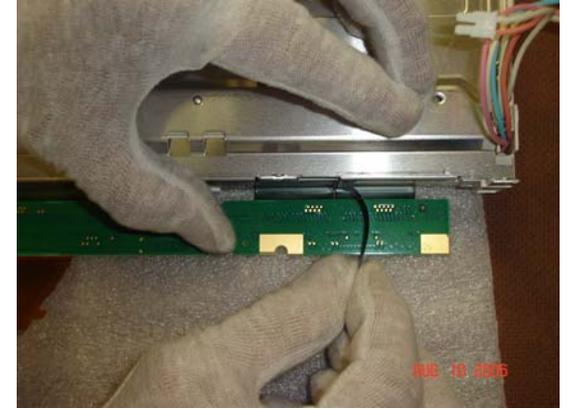
CCFL Replacement of the Sharp LCD Panel

- Put on Soft Cotton Gloves to protect the panel from the Oils on your hands.
- Remove the 6 outer screws.
- Remove the insulating and Metal Covers.
- Disconnect the Ribbon Cables from the LVDS Receiver Card.
- Remove the LVDS Receiver Card and put it in a Anti-static bag. Then remove the Last Cover on the Back Panel.
- Pop the Plastic lock tabs in and Stand the Panel on its side and remove the Panel's outer frame.



CCFL Lamp Replacement

- Remove the screws holding the Source and Gate PCB's.
- After removing the screws on the Source PCB, also remove the Insulator. When re-assembling the panel do not forget to put the insulating tape back before screwing the Source PCB down.
- Remove the 6 Brass Screws holding the Back Panel onto the Panel's plastic support frame.
- Pop the Retaining Tabs on the bottom of the panel and remove the Back Panel of the LCD Panel.
- Now we can Access the CCFL's. Be Very Careful removing the Lamp Assemblies. The lamps contain small amounts of Mercury and can be a health hazard if broken.



Replacing CCFL's on the Sharp LCD Panel

Now the fun part starts.

- After Carefully removing the upper & lower Lamp Assemblies, look Closely at the Defuser. You'll notice some burned sections or discolorations, and also a pillar of Acrylic used to hold the lamps in place.
- Scrape the burned sections and remove the Acrylic so the new lamps will fit properly.
- Clean all the Debris from the Layers of Film and the Defuser.
- Look at the old Lamp Assembly and the new one. You may have to do a little carving on the rubber to make sure the Lamps will fit properly.
- Once Replaced, you can Re-assemble the unit and Test it. Make sure to Re-calibrate the Touch Screen. It may have lost its calibration while being disconnected from its control PCB.

