

# Installation Guide

Installation of the CleanScreen takes around 30 minutes from start to finish. Follow these steps in order.

Take your time, and get ready to enjoy your Game Gear in a way you never have before!

## WARNING !



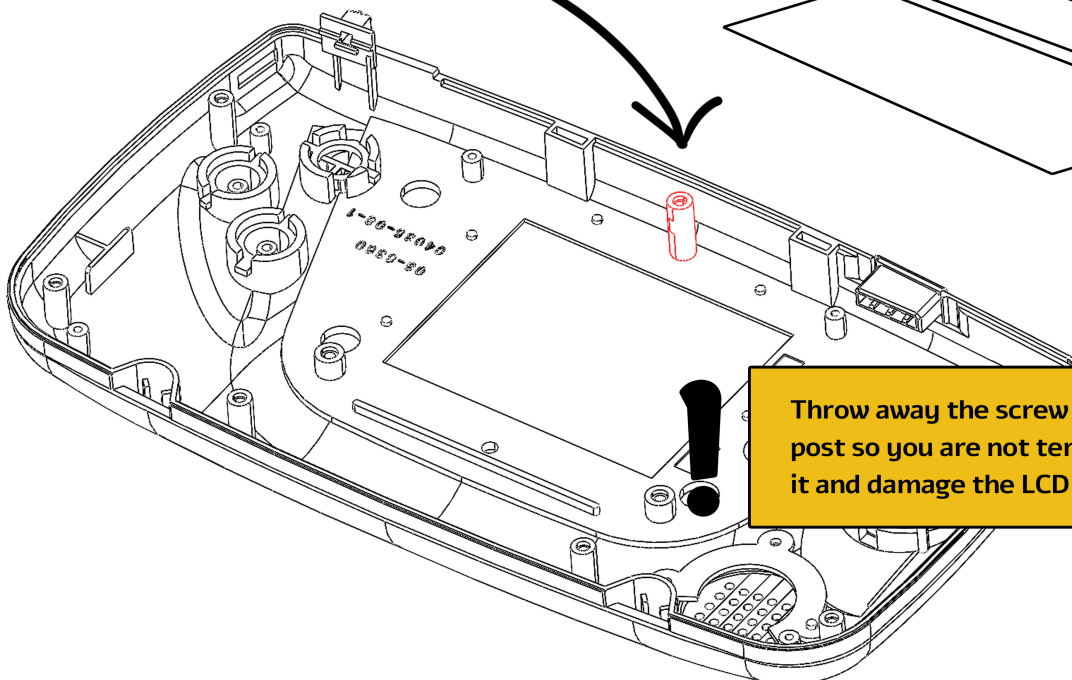
Installation is done at your own risk.  
RetroSix take no responsibility for damage  
resulting from installation.

## What's Needed

- 1x CleanScreen Board
- 1x Wire Free Kit (optional)
- 1x LCD Screen
- 1x Screen Brackets

## 1. Front Shell Stump

Cut the top screw stump from the front shell flush with the surface.



## 2. Trimming Metal Cage

If your metal guard has uprights cut them off with scissors.

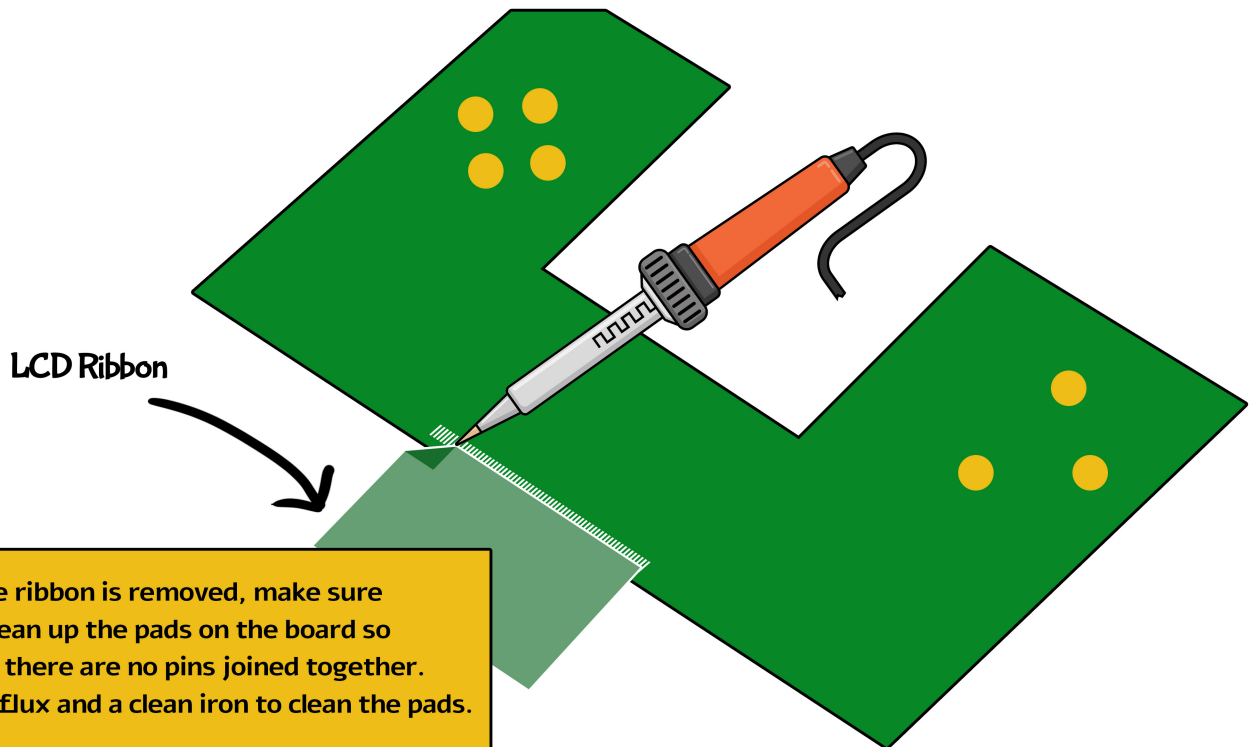


Throw away the screw that went into this post so you are not tempted to reinstall it and damage the LCD ribbon later.

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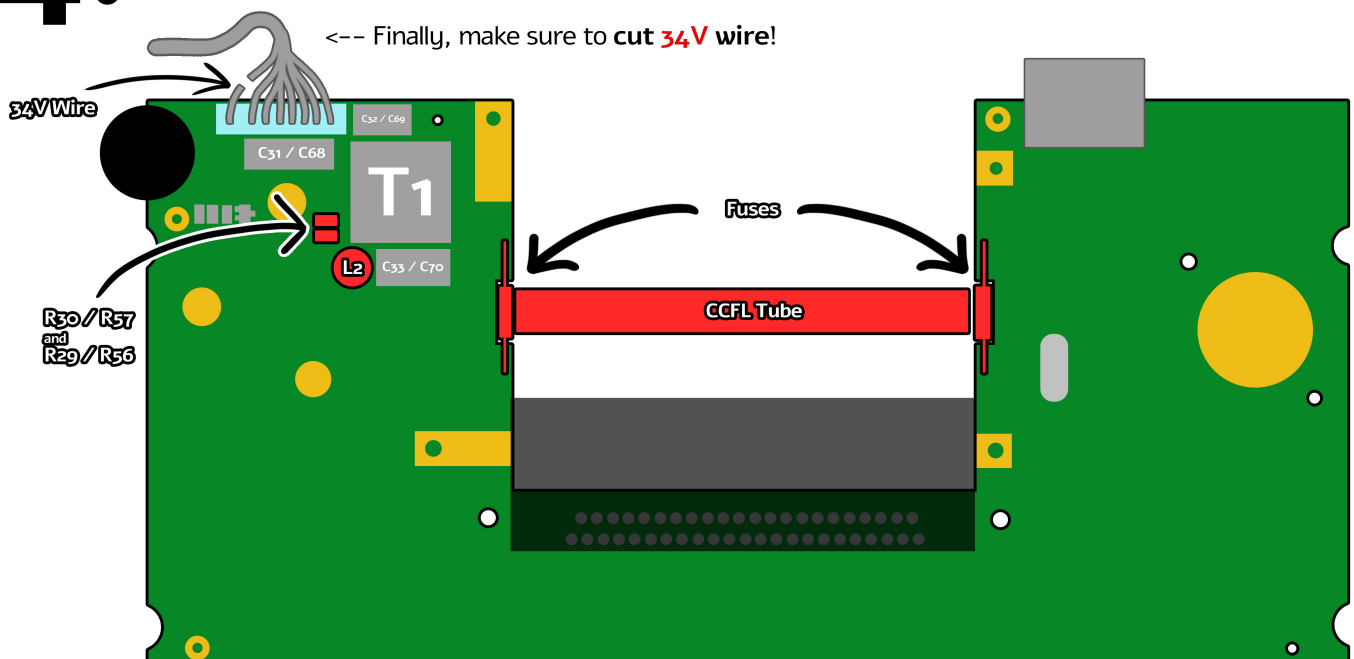
## 3. Remove Old Screen

Remove the tape covering the original screen connector on the motherboard, then flip over the board and using a soldering iron set to around 310 to 360 degrees C, apply flux and solder to the pads of the LCD connector and gently lift the LCD ribbon away from the board.



## 4. Remove Components

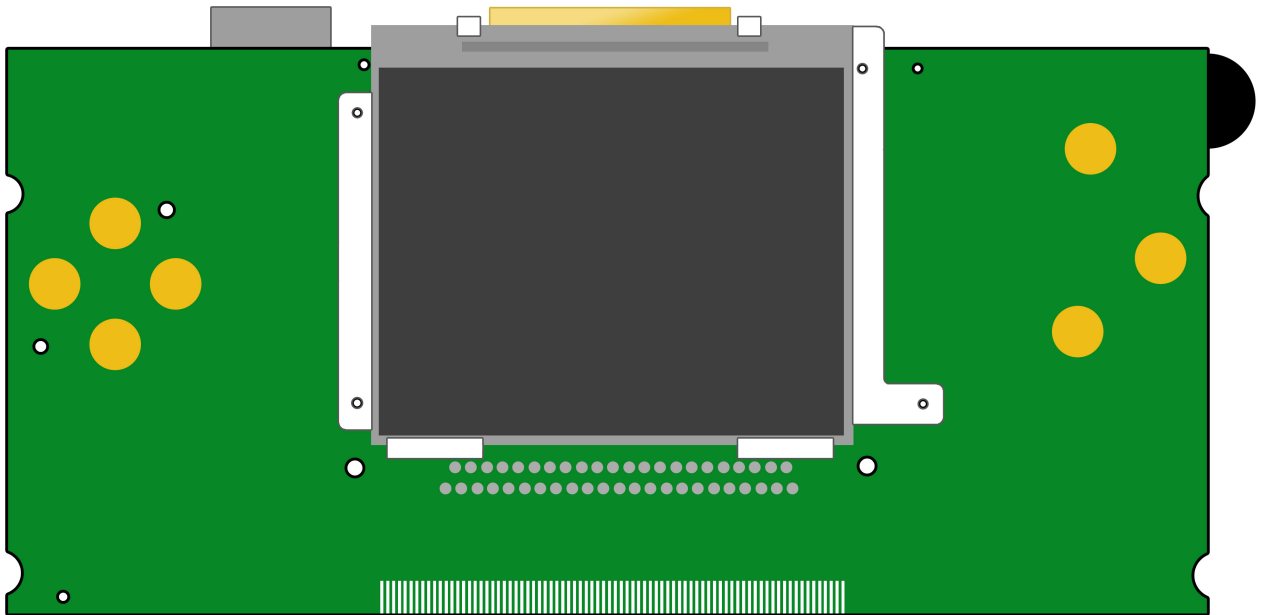
Remove L2 coil, CCFL Backlight Tube, Fuse 1, Fuse 2, R29 (or R56), R30 (or R57) resistors.



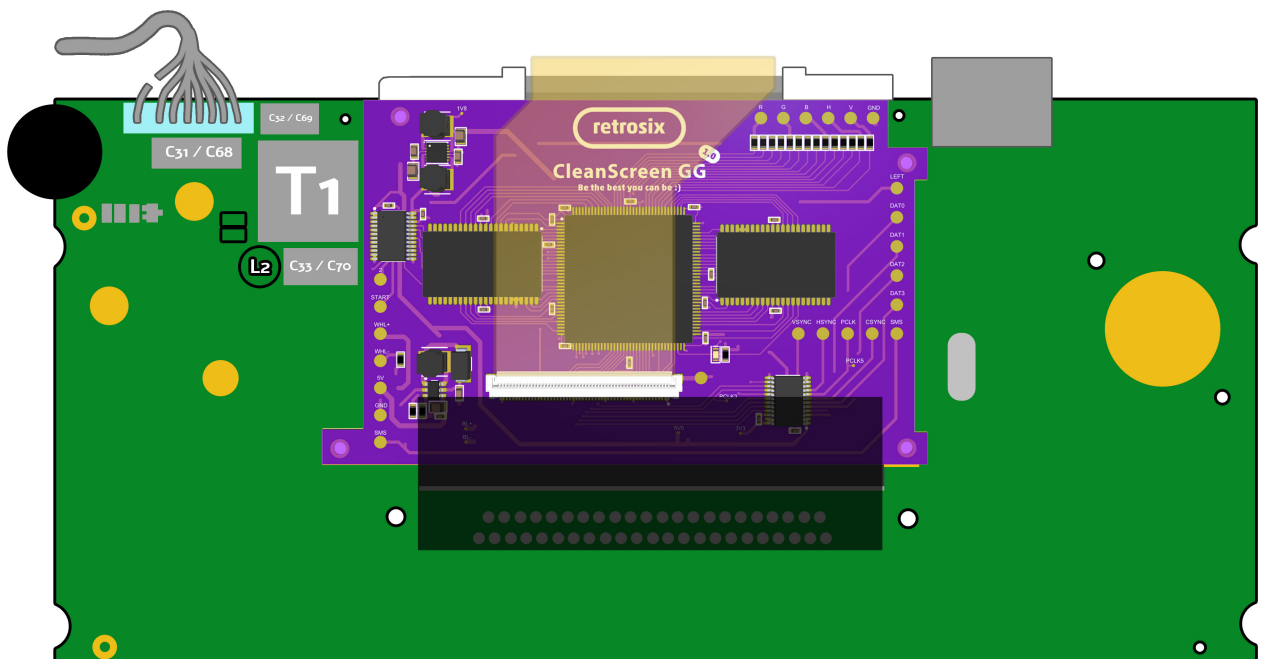
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## Board & Screen Mounting

Slide the brackets over the LCD screen and position it over the 4 holes of the original metal bracket cover. Place the CleanScreen on the opposite side of the board and use the original 4 screws to secure the LCD and CleanScreen to the main board.



Connect the LCD ribbon cable to the CleanScreen by lifting up the plastic tab on the CleanScreen, inserting the ribbon cable in fully, then pushing back down the plastic tab.

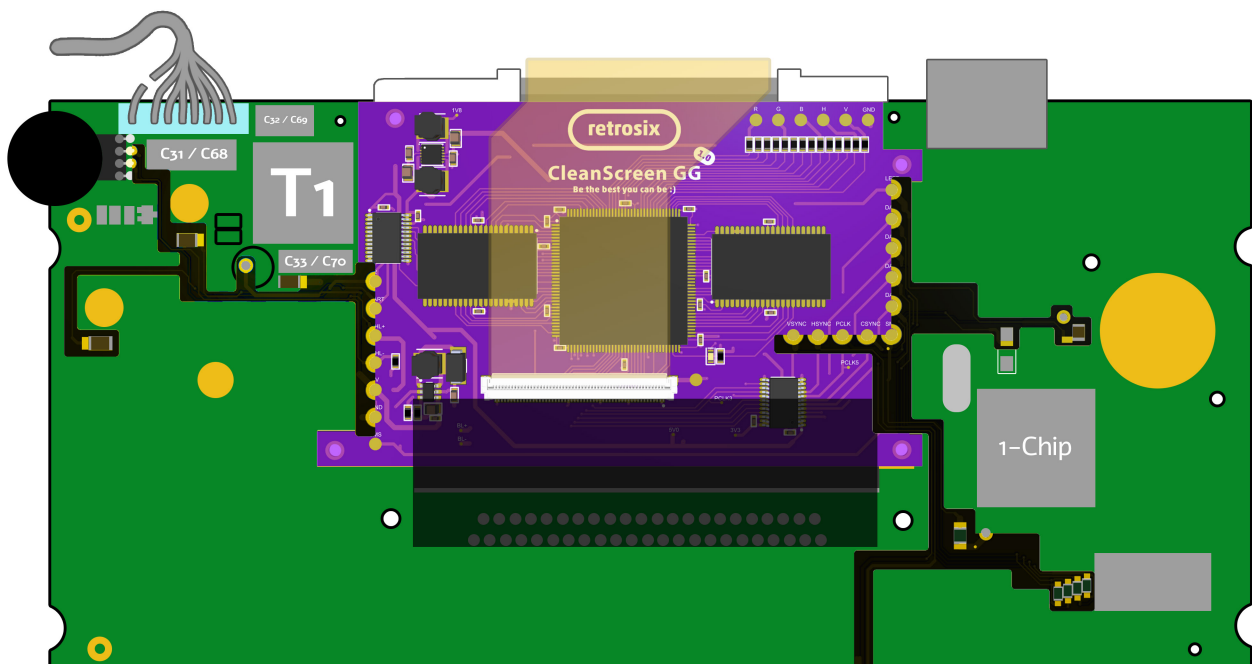


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## 6. 1 Chip (VA1) Wire Free Install Kit

If your board has one large chip in the bottom right corner it is a VA1 board. Simply solder on the 1-chip wire free install board in place, soldering all points to the corresponding pads on the board.

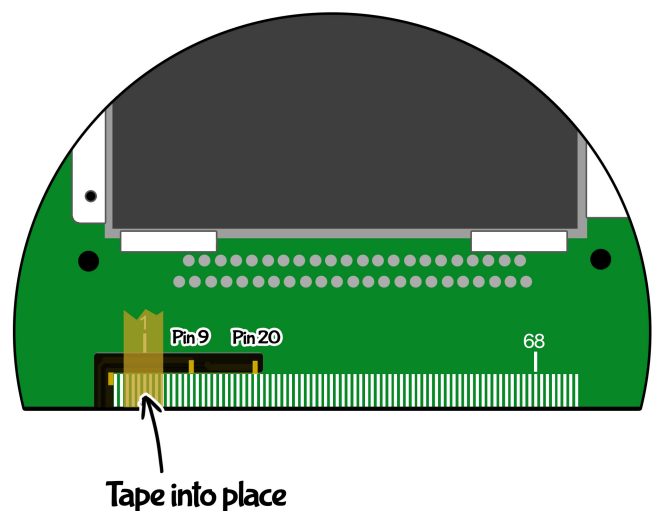
The 2 wires on the back should connect to pin 9 and pin 20. We recommend taping the board down on the LCD side of the board before soldering pins 9 and 20 in place, and using a bit of wire to bridge the pad from the wire-free install kit to the main boards ribbon pads.



### Pin Connections

The following pads get soldered. Use this as a reference if you also want to wire the CleanScreen using wires and not the wire-free install kit.

2	Left edge C37
Start	Right edge C38
BL+/-	Middle pins on wheel
5V	Left of L2
GND	Right of C72
Bottom of R23 to T10 (not needed using Wire-Free kit)	
Left	Bottom of C34
Do/1/2/3	Left to right R16, R15, R14, R13
SMS	Top of R23
CSync	T2
Pclk	FB1
Hsync	Pin 9 of LCD Ribbon Pads
Vsync	Pin 20 of LCD Ribbon Pads



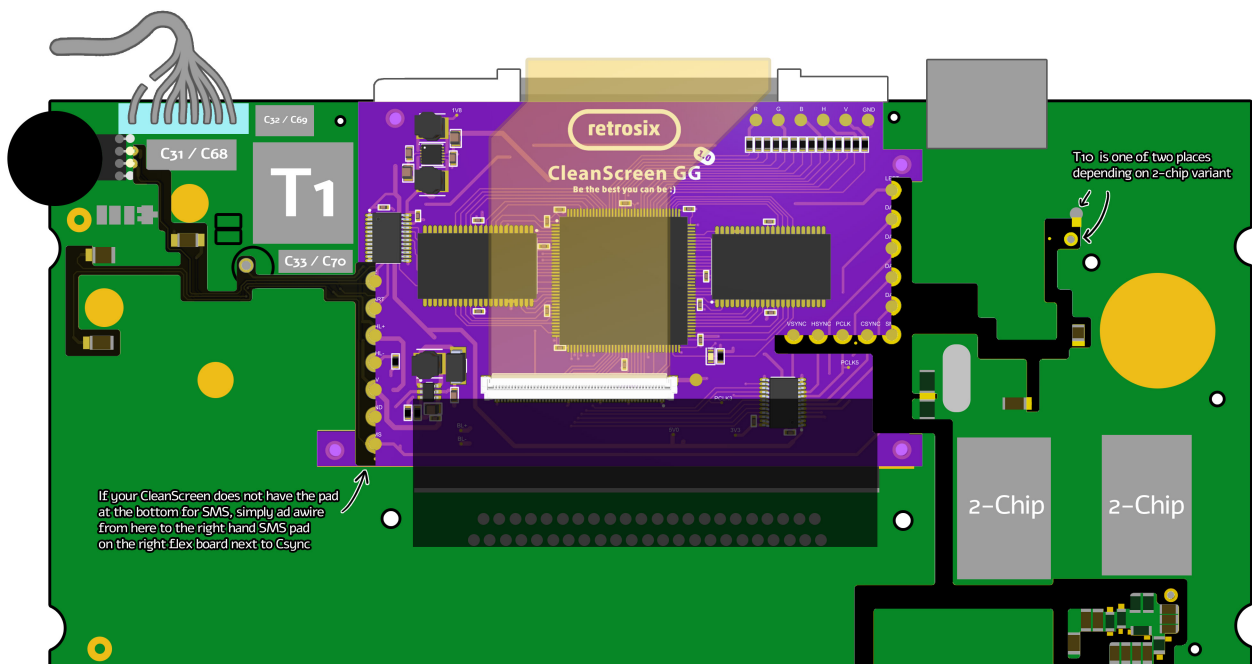


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## 6. 2 Chip (VAO) Wire Free Install Kit

If your board has two large chips in the bottom right corner it is a VAO board. Simply solder on the 2-chip wire free install board in place, soldering all points to the corresponding pads on the board.

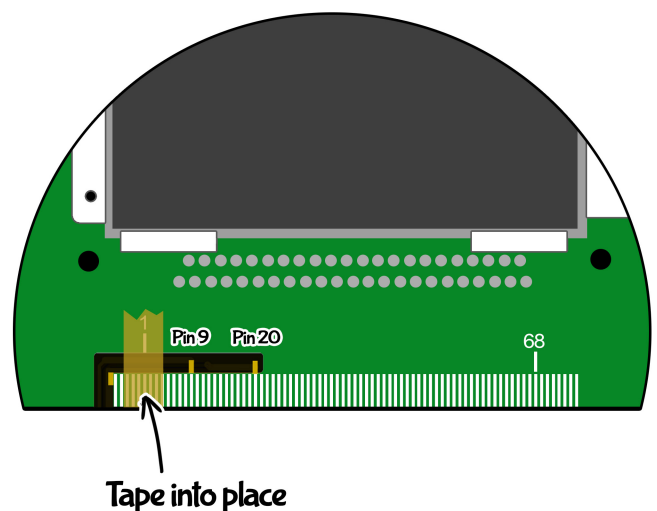
The 2 wires on the back should connect to pin 9 and pin 20. We recommend taping the board down on the LCD side of the board before soldering pins 9 and 20 in place, and using a bit of wire to bridge the pad from the wire-free install kit to the main boards ribbon pads.



### Pin Connections

The following pads get soldered. Use this as a reference if you also want to wire the CleanScreen using wires and not the wire-free install kit.

2	Left edge C29
Start	Right edge C30
BL+/-	Middle pins on wheel
5V	Left of L2
GND	Left of C30
SMS	Left of R31
Wire T10 to T11 (not needed using Wire-Free kit)	
Left	Bottom of C26
Do/1/2/3	Left to right R56, R54, R57, R55
CSync	T2
Pclk	FB1 (or Bottom of R14)
Hsync	Pin 9 of LCD Ribbon Pads
Vsync	Pin 20 of LCD Ribbon Pads



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## 7. Troubleshooting & First Boot

Once installed, insert a game, power up your console and enjoy.

If you get a black screen, double-check your game cartridge is clean, your game works and try inserting and removing the game 20 times in a row. Also check your power supply is good.

If you get fixed static, or horizontal line glitches check your power supply is good and working.

If you get glitches or either of the issues above and have checked the power and game, double check all connections are solid, clean and there are no shorts.

## CleanScreen Features

To change between screen size and effects hold down **Start**, **z** and **Left**.

Mode 1: Stretch to fit

Mode 2: Stretch to fit + Scanlines

Mode 3: Double-resolution

Mode 4: Double-resolution + Scanlines

Mode 5: Native Resolution

Mode 6: Native Resolution + Scanlines

### VGA Output

To toggle on and off output on the VGA for external VGA screen hold **Start** and **Left**.

**Thank you for supporting RetroSix!**

Luke and team

