Instruction Sheet for BrewZilla Gen 3.1.1 Board (Upgrade Mod)

How to tell if you have a BrewZilla 3.1 or BrewZilla 3.1.1

Both the Gen 3.1 and Gen 3.1.1 circuit boards and screens look identical. The Gen 3.1.1 BrewZilla can be distinguished from the Gen 3.1 BrewZilla by the presence of boil timers for hop additions.

To determine if your circuit board is a Gen 3.1.1 ensure the BrewZilla is paused and then press the TEMP button and increase the temperature to boiling. If HH is shown then this indicates you have a Gen 3.1.1 circuit board, if 100 is shown then this indicates you have a Gen 3.1 circuit board.

The Gen 3.1.1 circuit board is an improvement over the Gen 3.1 circuit board as it won't start a programmed stage until it hits the set the temperature. On the Gen 3.1 circuit board the timer would start counting down prior to hitting the desired temperature. In some cases, following

sparging the timer could be half way through a 60-minute boil timer before even reaching a boil. This allows for a more precise brewing process.

Upgrading from a:

3.0 to 3.1.1 = Both the LCD and Power Boards (PCB) will need to be purchased and installed.
3.1 to 3.1.1 = Only the LCD will need to be purchased and installed.

Upgrading a Gen 3.0 circuit board to a Gen 3.1.1 circuit board

Step 1

Before disconnecting any wires get some masking tape and number the wires on the old board from 1 to 9. (Do not disconnect any wires before you do this).

Step 2

Disconnect the wires using a phillips head screw driver one at a time and taking note of the new wiring position on the new board replace the wires one at a time. Refer to the image below to determine where each of the wires need to be placed.

Gen 3.0 (Old Main PCB)   Gen 3.1 and Gen 3.1.1 (New Main PCB)
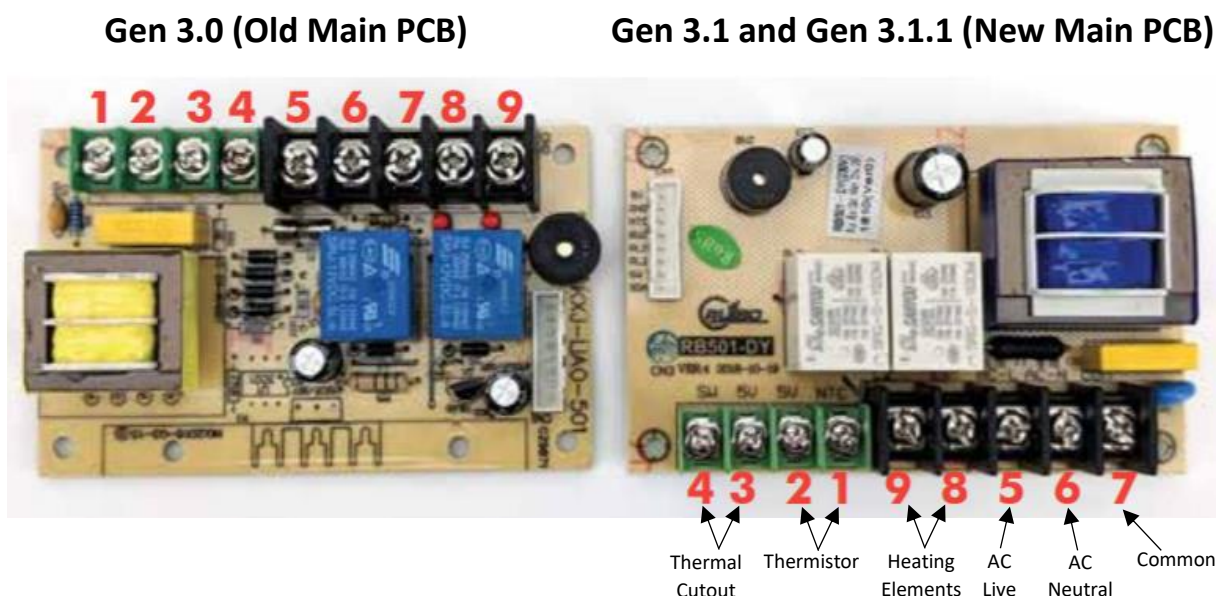
Step 3

Change out the screen board and plug the new ribbon cable from the screen board into the main board.

Upgrading a Gen 3.1 LCD to a Gen 3.1.1 LCD

Unplug the ribbon cable from the Gen 3.1 LCD screen and remove from the housing. Then plug the ribbon cable into the Gen 3.1.1 LCD screen and install in the housing.

Setting a Boil on the BrewZilla 3.1.1

Press the TEMP button and increase the set temperature until HH is shown under the current temperature. HH indicates that the BrewZilla is set to boil and will provide 100% power to all elements which are turned on.

Programming stages on the BrewZilla 3.1.1

The BrewZilla 3.1.1 has 6 different stages at which you can preset a time and temperature. Press the S1 – S6 button to cycle through the stages. Press the S1 – S6 button until the stage you want to change is flashing. Adjust the temperature of this stage by pressing the TEMP button and pressing the + or - buttons to set the desired temperature for this stage. Then press the TIME button and press the + or - buttons to set the time that this temperature will be held for. Repeat this for all stages. If you set 00:00 in the time for a particular stage that stage will be skipped.

Example: To set a 30-minute boil hop addition if you are performing a 60-minute boil. Set the TEMP as HH and then set the time as 30:00.

To then set a 45-minute hop addition after a 30-minute hop addition if you are performing a 60-minute boil. Select the stage after the 30-minute hop addition stage and then set the TEMP as HH and set the time as 15:00.

Note: When a stage is completed on the BrewZilla 3.1.1 and the next stage is set as HH it will hold the temperature, beep continuously and will not proceed onto the next stage until the play button is pressed.

Calibrating the BrewZilla 3.1.1 at high altitudes

If you live at high altitudes (higher than 300m) it is important to calibrate temperature sensor of the BrewZilla 3.1.1.

As altitude increases the boiling point of water decreases. At sea level water has a boiling point of 100°C, however, for every 150m increase in altitude the boiling point of water decreases by 0.5°C. This means that at an elevation of 300m the boiling point of water will be 99°C, not 100°C.

As the BrewZilla program only starts the boil timer once it hits 100°C, if you are at an elevation of 300m or above it will never start the boil timer unless you calibrate the temperature sensor.

To adjust the calibration setting follow the instructions below:

1. Power up the BrewZilla and press the pause button.
2. Press and hold down the time button until the calibration number is displayed.
3. Adjust the calibration number between -10 and +10. A positive figure will increase the displayed temperature and a negative figure will decrease the displayed temperature. For instance, if your BrewZilla is reading 20°C on the display but it should be reading 25°C then use a calibration figure of positive 5.
4. Press the time button again to return to the home screen.

Note: The calibration figure must be set in Celsius, but it will affect the displayed temperature in both Celsius and Fahrenheit.

If you are at an elevation of 300m you will need to set the calibration as negative one to correct for the boiling temperature of water being 99°C, not 100°C.

You should also note that adjusting the calibration for high altitudes will affect your mash temperature. This is due to the temperature of the water not changing with increased altitude despite the boiling point changing.

Hence, if you are living at an elevation of 300m and you adjust the calibration to negative 1 to compensate for the lower boiling point of water the temperature reading will be 1°C below the actual temperature of the water. Therefore, for example if you set a mash temperature of 65°C the temperature of the water will actually be 66°C.

To correct this, you should always set your mash temperature on the BrewZilla to be less than your desired mash temperature if you are at an elevation of above 300m. Hence, if you have set the calibration to be negative 1 and you desire a mash temperature of 65°C then you should set the temperature as 64°C. If you are at an elevation of 600m and have set the calibration to negative 2 then to achieve a mash temperature of 65°C you should set the temperature as 63°C etc.

Lastly, it is important to note that at higher elevations hop utilisation is decreased and this will need to be factored into recipe development.