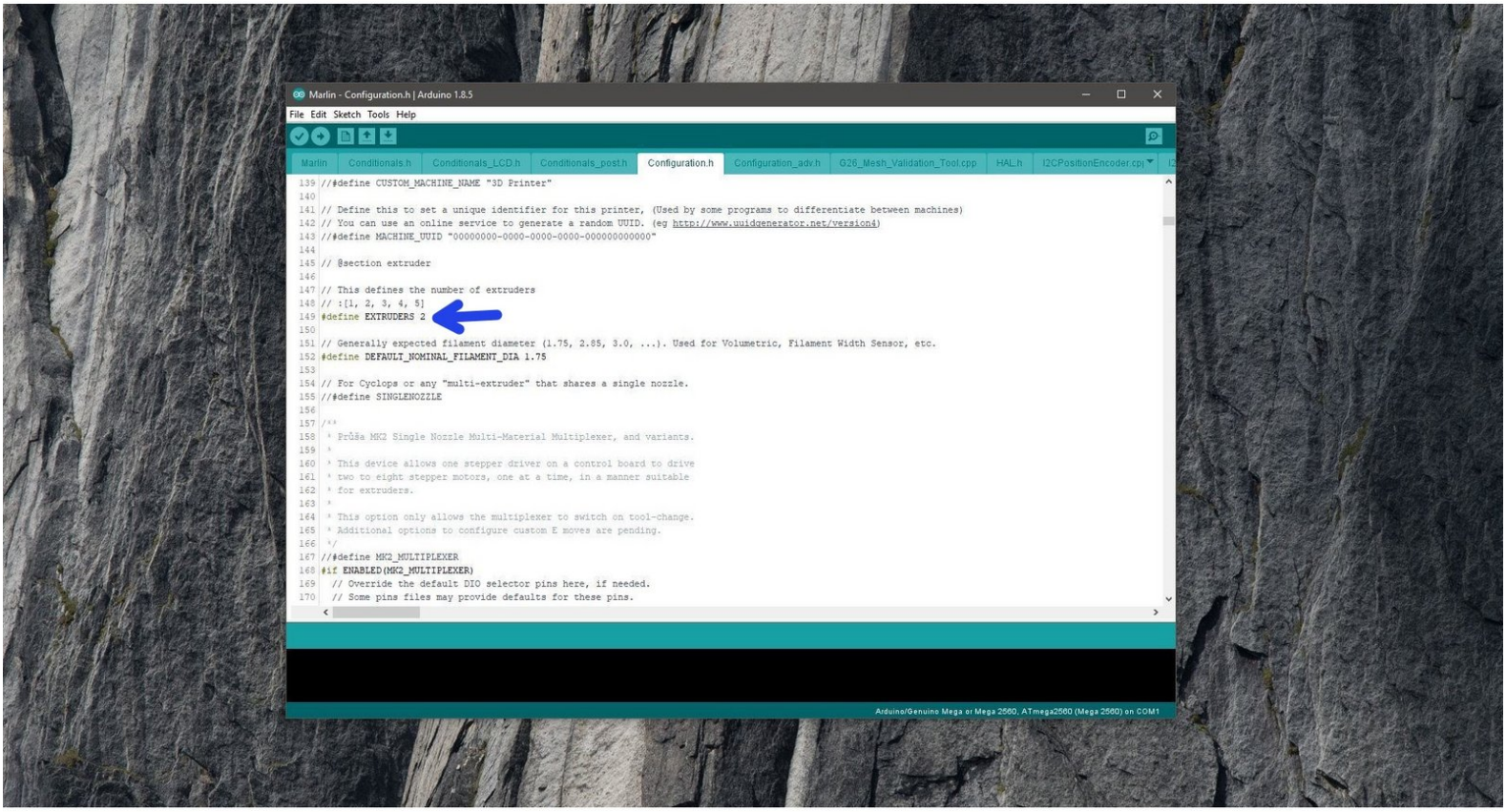
Makertech

DSE Only - Stage 08: Firmware

Written By: Makertech



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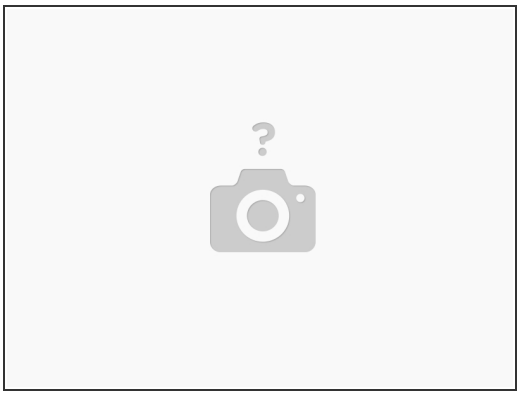
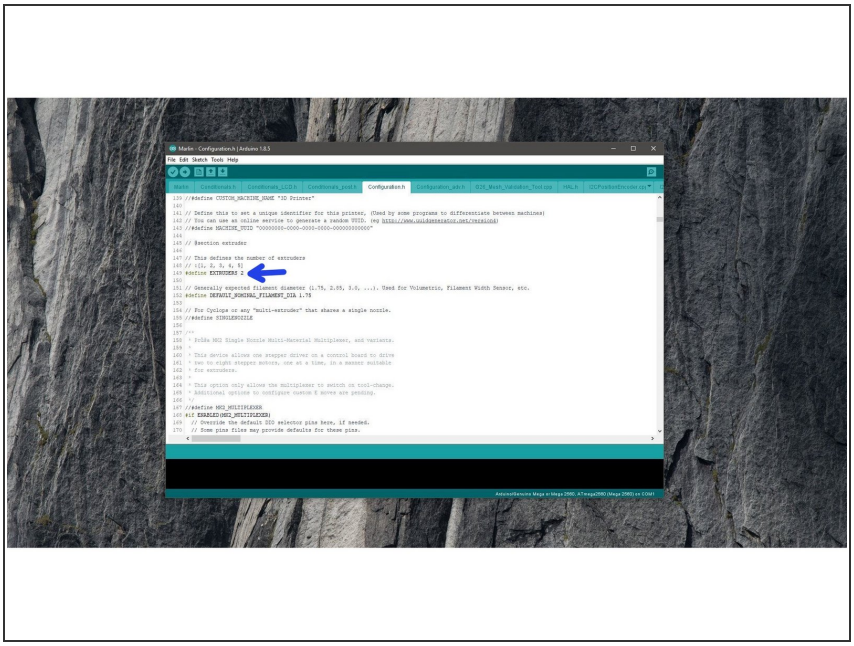
Step 1 — Marlin Firmware



The Dual Switching Extruder has been tested to work with the latest version of the Marlin Firmware.

Other firmwares may be compatible but have not been tested.

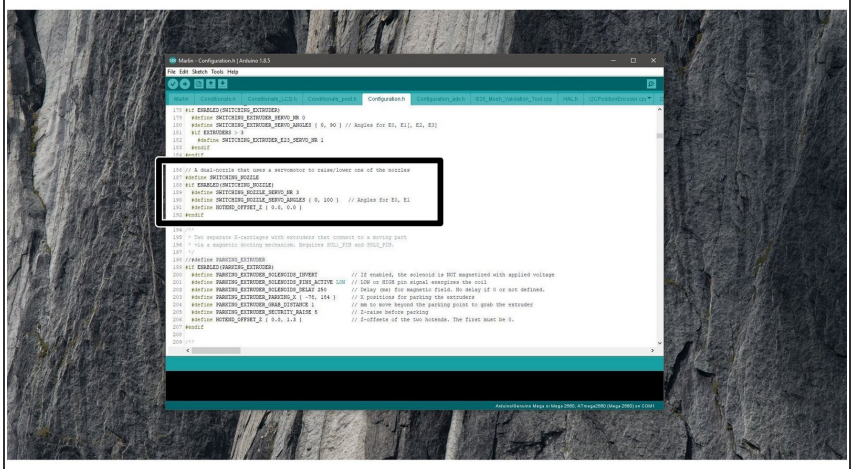
Step 2 — Configuration.h



Changes that need to be done to the marlin firmware are all in the Configuration.h file.

- Line 149:
  - Set Extruders to **2**

Step 3 — SWITCHING_NOZZLE



Line 187:

- #define SWITCHING_NOZZLE

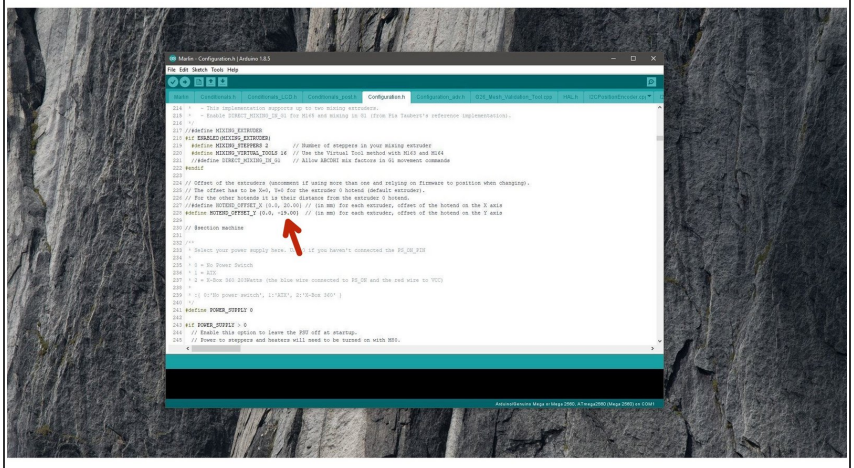
Line 189:

- **3**

Line 190:

- { 0, 100 }

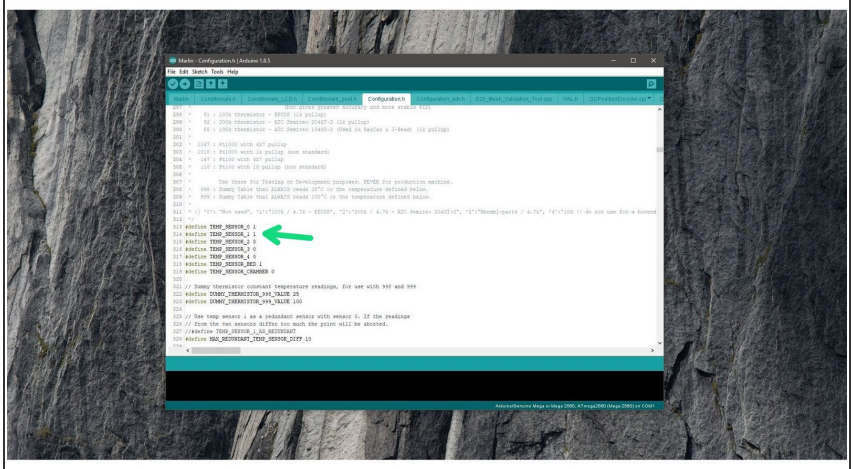
Step 4 — HOTEND_OFFSET_Y or X



Depending on the direction the hotends are switching in on your printer:

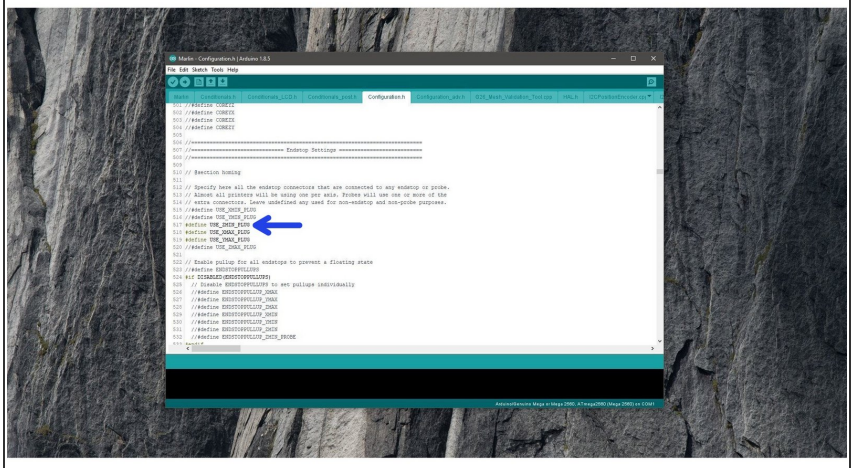
- HOTEND_OFFSET_Y {0.0, **-19.00**}
- HOTEND_OFFSET_X {0.0, **-19.00**}

Step 5 — TEMP_SENSOR_1



- Set the thermistor for the the second hotend.

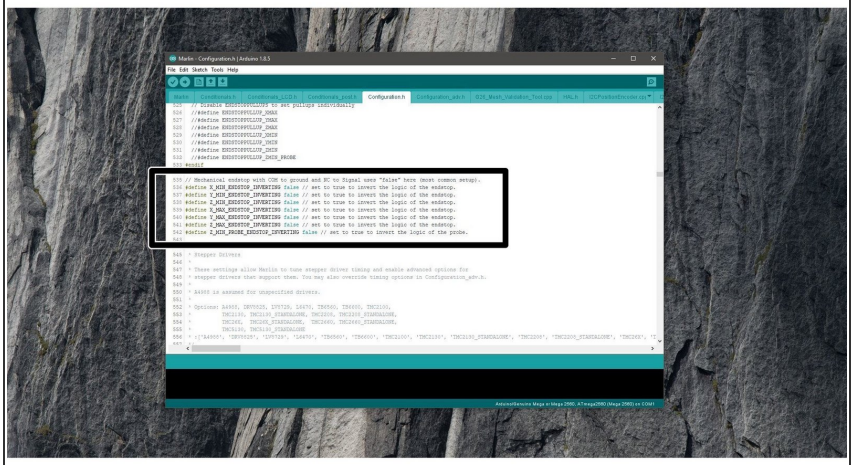
Step 6 — USE_ZMIN_PLUG



- Uncomment USE_ZMIN_PLUG

This is where the Probe signal will go.

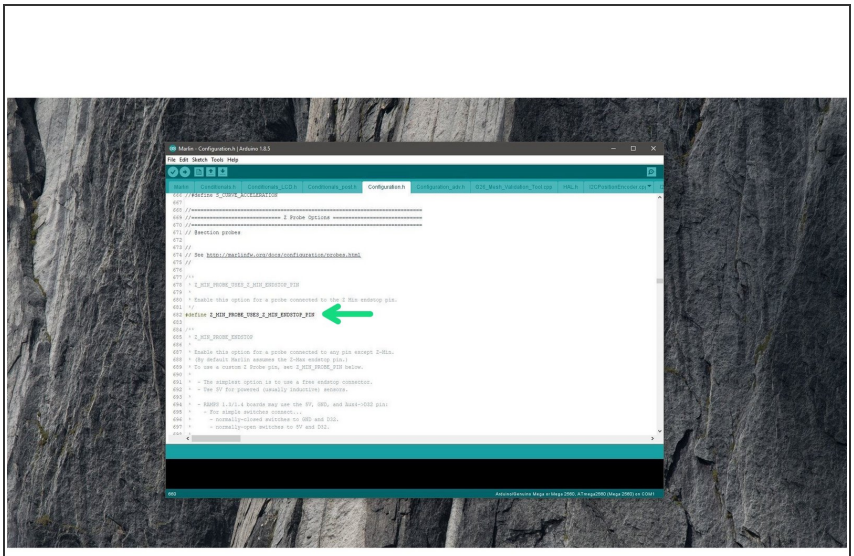
Step 7 — ENDSTOP_INVERTING



Make sure both are set to false:

- Z_MIN_ENDSTOP_INVERTING
- Z_MIN_PROBE_ENDSTOP_INVERTING

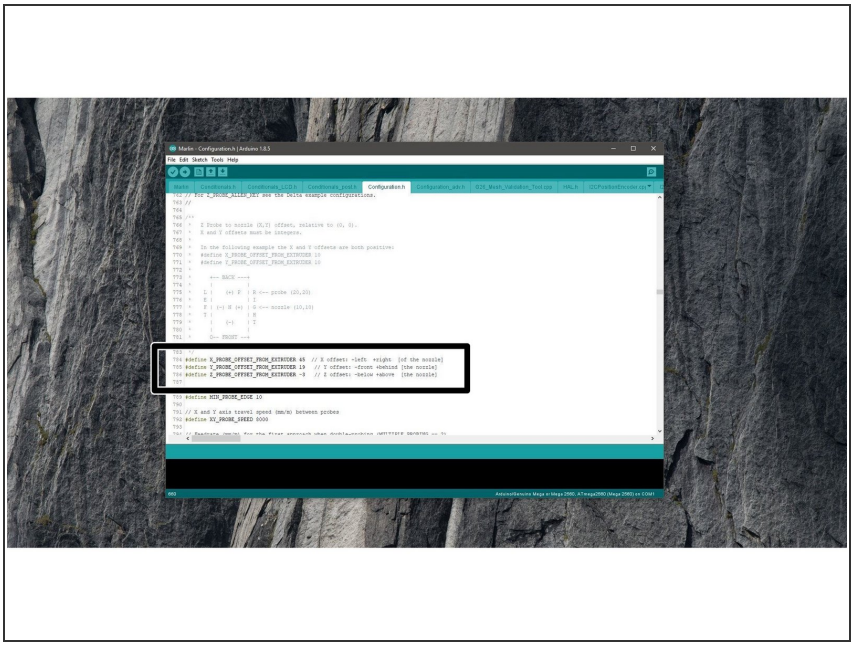
Step 8 — Probe uses Endstop Pin



Uncomment line 682:

- Z_MIN_PROBE_USES_Z_MIN_ENDSTOP_PIN

Step 9 — Probe offsets

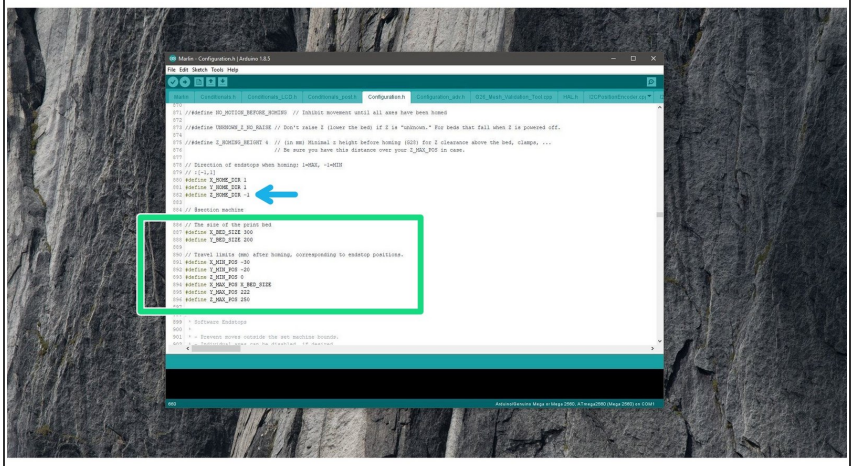


The Probe is offset from Hotend #1 (left Hotend). Lines 784-786.

You may need to swap the X/Y values around if your Hotends switch in the X-direction.

- X Offset: **45**
- Y-Offset: **19**
- Z-Offset: **-3**

Step 10 — Z-Home Direction and Print Dimensions



Line 882:

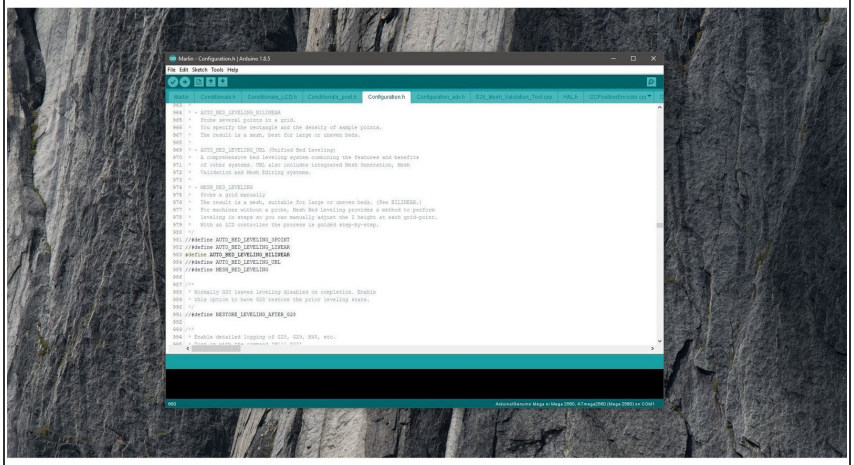
- Make sure the Z-homing direction is set to **-1**

Lines 891-896:

- Adjust your build platform size accordingly to fit the DSE assembly.

Note, the Z-height will be reduced by aprox. 50mm.

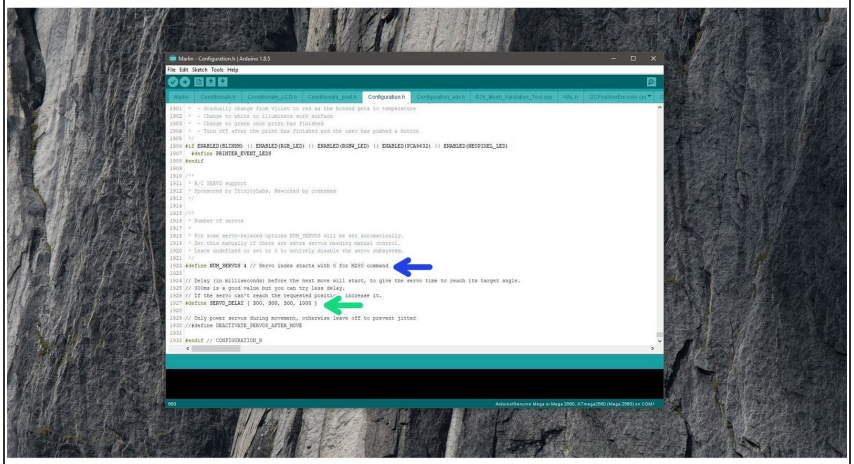
Step 11 — Auto Levelling



Set the auto-leveling to:

- AUTO_BED_LEVELING_BILINEAR

Step 12 — Servo Settings



Because of a bug in the current release of the marlin firmware we're setting the servo settings this way:

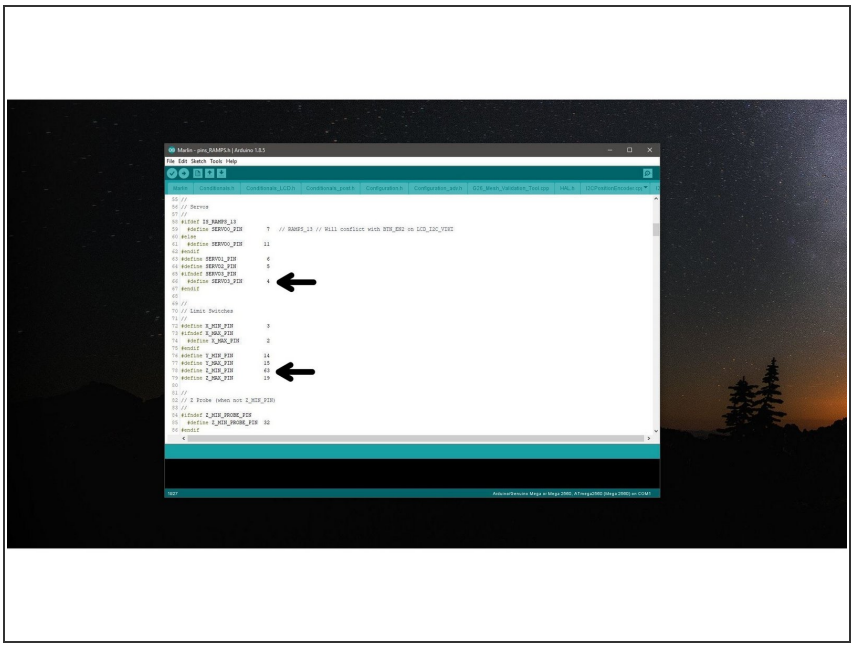
Line 1922:

- NUM_SERVOS **4**

Line 1927:

- SERVO_DELAY { 300, 300, 300, 1000 }

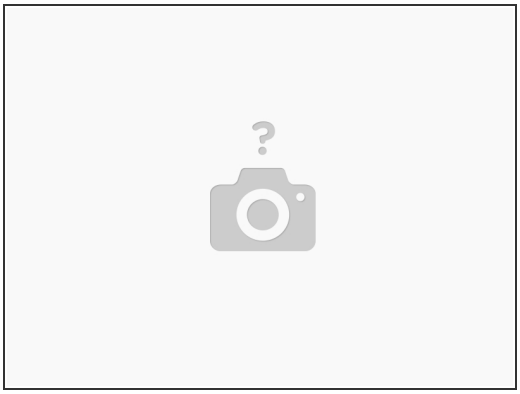
Step 13 — Pins



Make sure to correctly map the pins you have connected signal cables from the servo and probe to pin numbers in your specific board-pins config.

- The image shows the pins_RAMPS.h as an example.

Step 14 — Upload the firmware



- Once happy with the configuration, upload the firmware to your printer.
- Run through motion checks, enstop checks and homing.
- Check that the auto levelling (G28 G29) is working as expected.
- Also check that everything is heating up as it should.