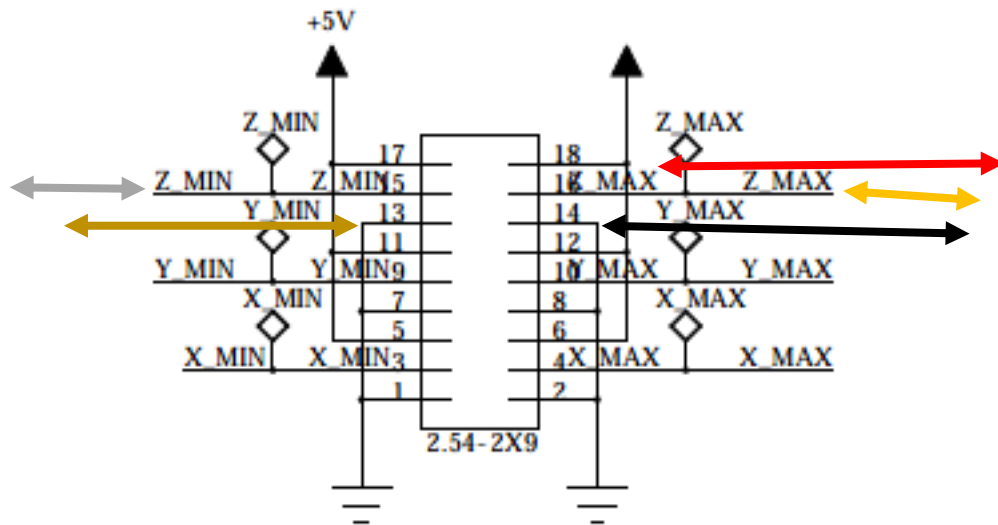


Add BL Touch Sensor to Geeetech - A10

Marlin 1.1.9

Connector on Control Board

LIMIT SWITCHES

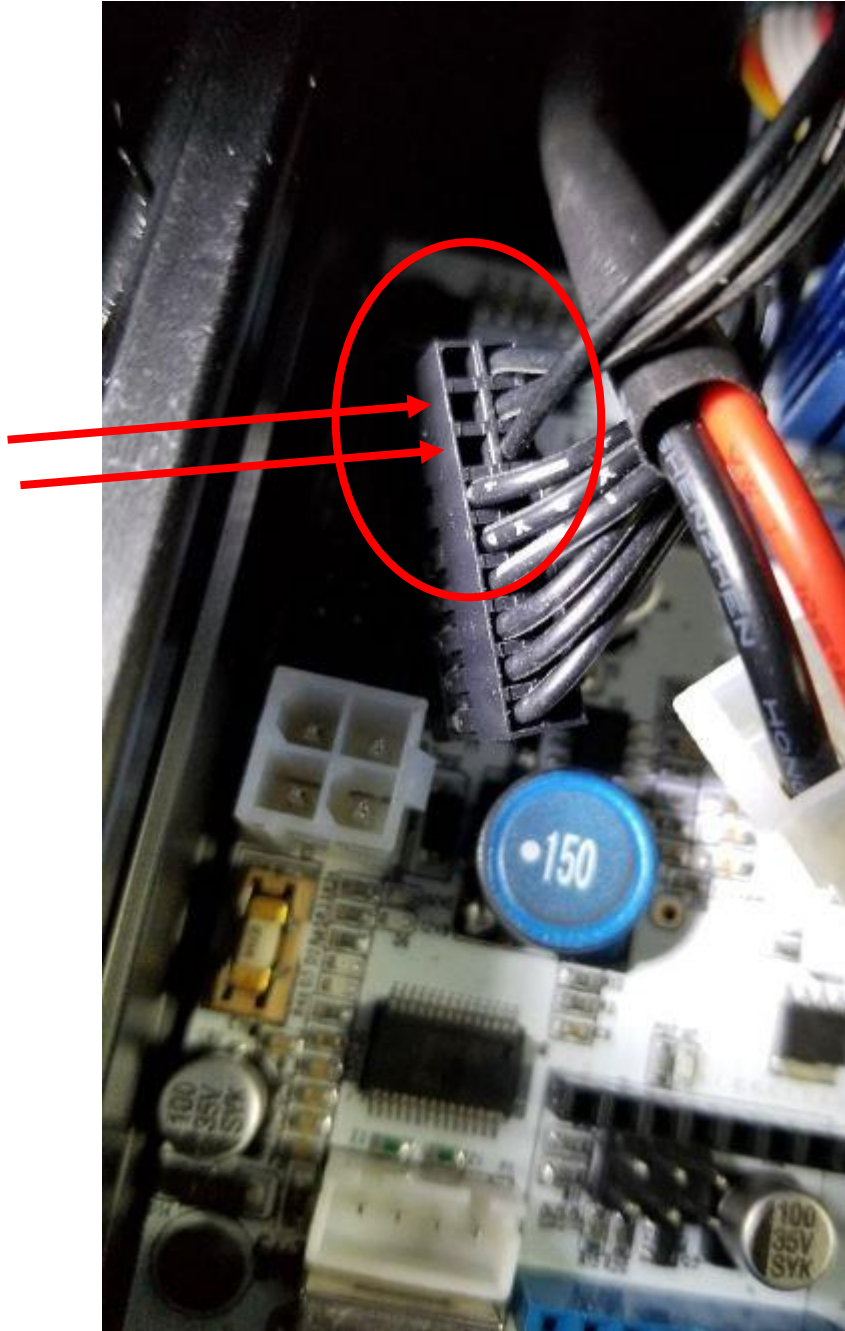


A10 Control Board GT2560 **Rev B**

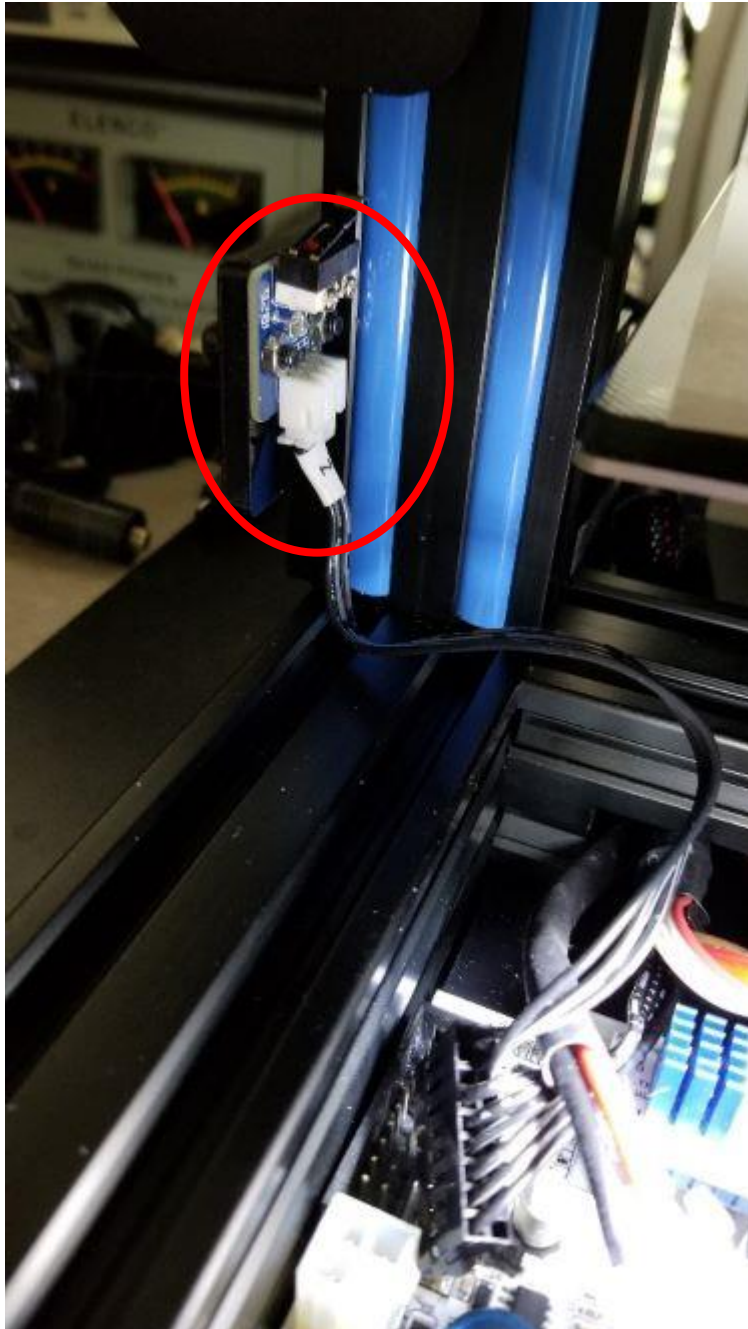
BT-Touch Pinouts

Red on 18	= +5V
White/Gray on 16	= Z (Min)
Black on 14	= GND
Brown on 13	= GND
Orange on 15	= Z (Max) (Control Signal) (Pins 16 & 15 reversed)

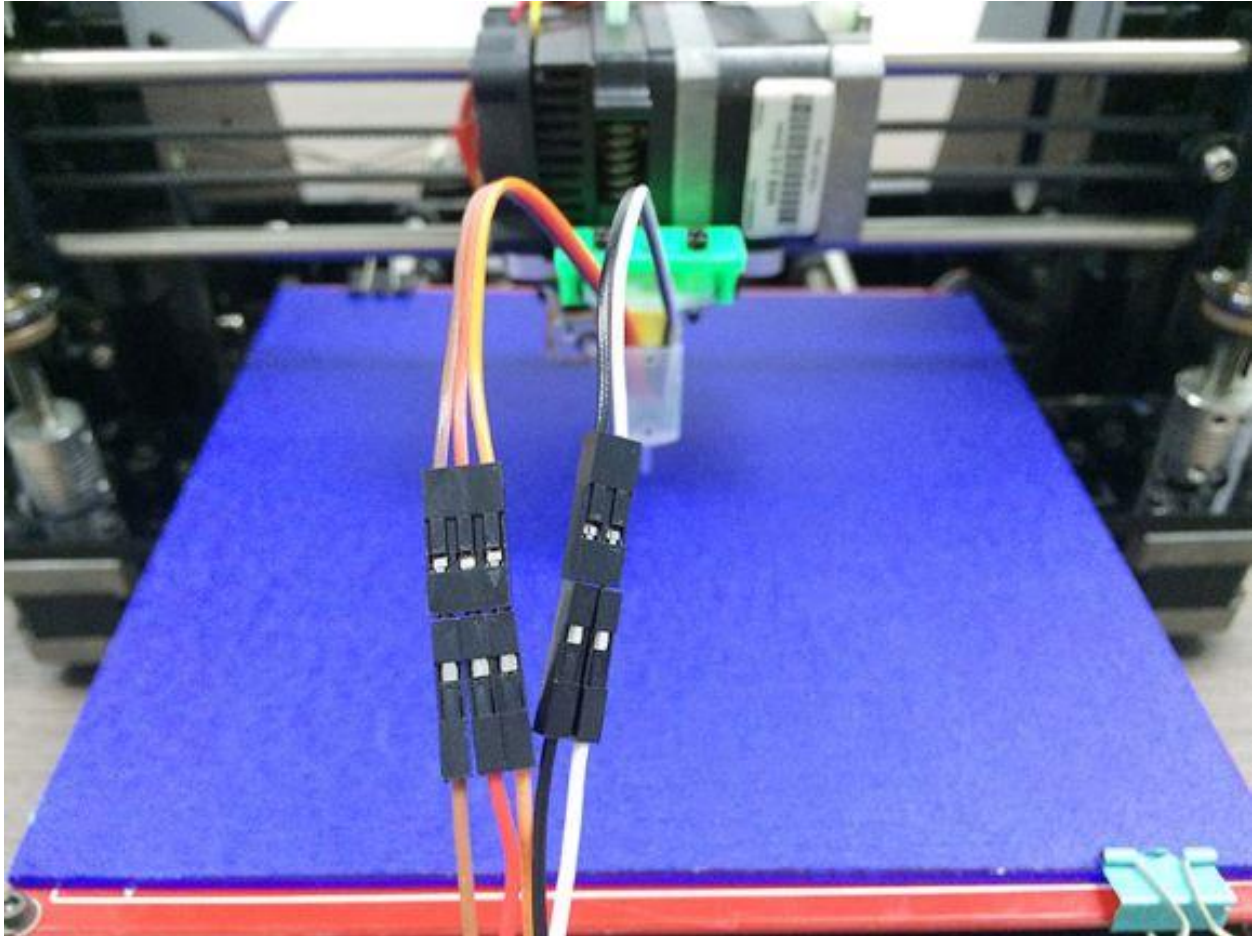
Note: un-used pin 17 (Not Used), pins 15,13 on the board connector will be used. Those are the pins you will use to connect the probe. You will need to make up cable with the correct size pins to connect here to un-used connector pins and to the probe.



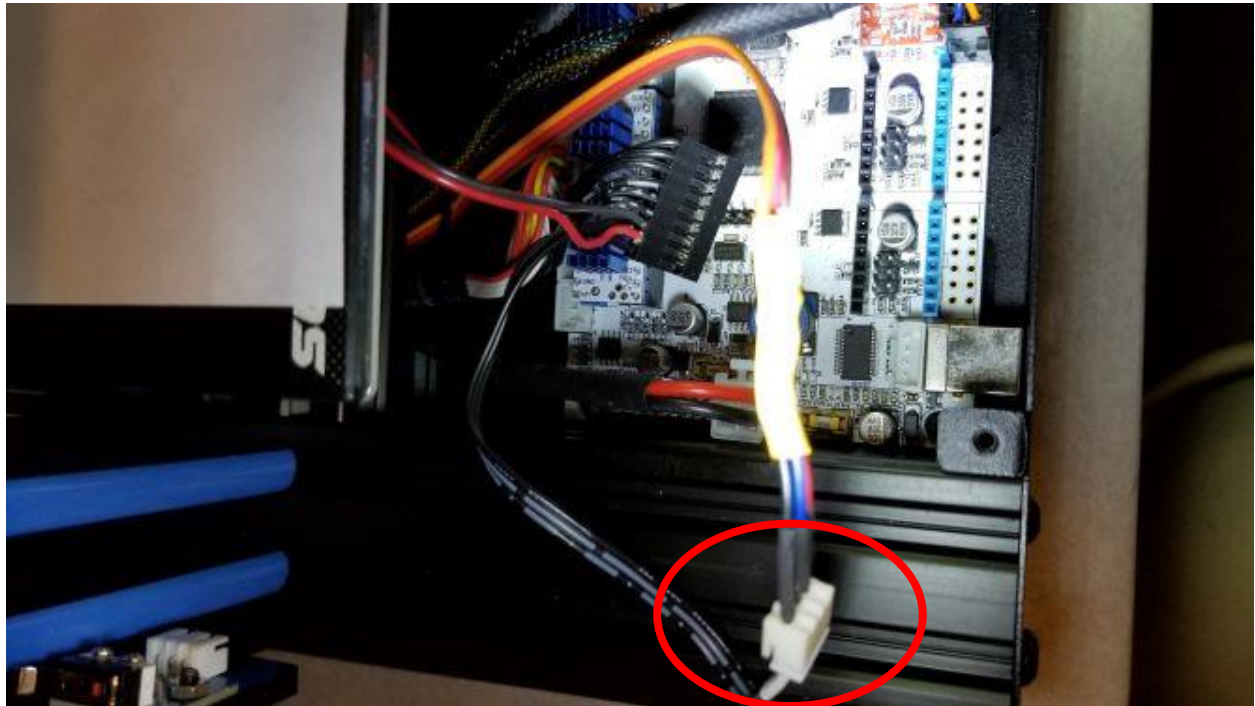
Disconnect the "Z" endstop switch cable. It is not needed.
You will connect this cable using a modified prepared extension cable to the three (3) wire cable from the probe.



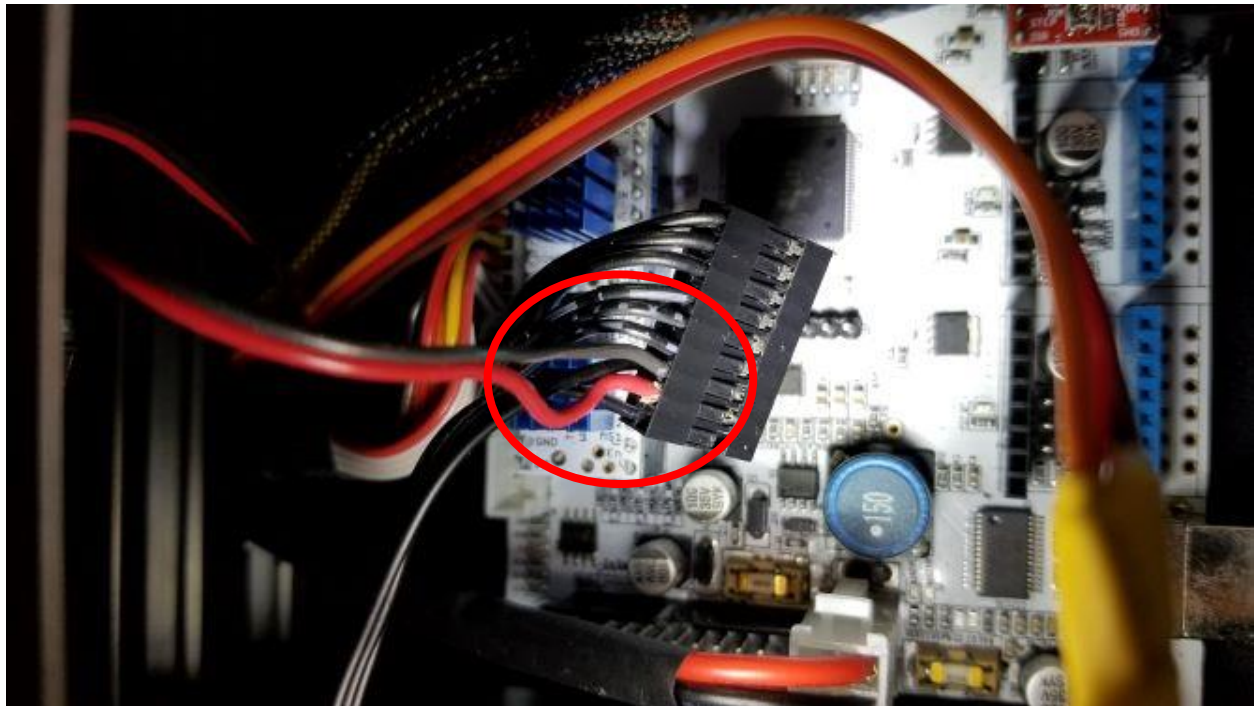
Made up extension cables with slip on connectors for the probe and covered them with shrink tubing so they won't pull apart by accident.



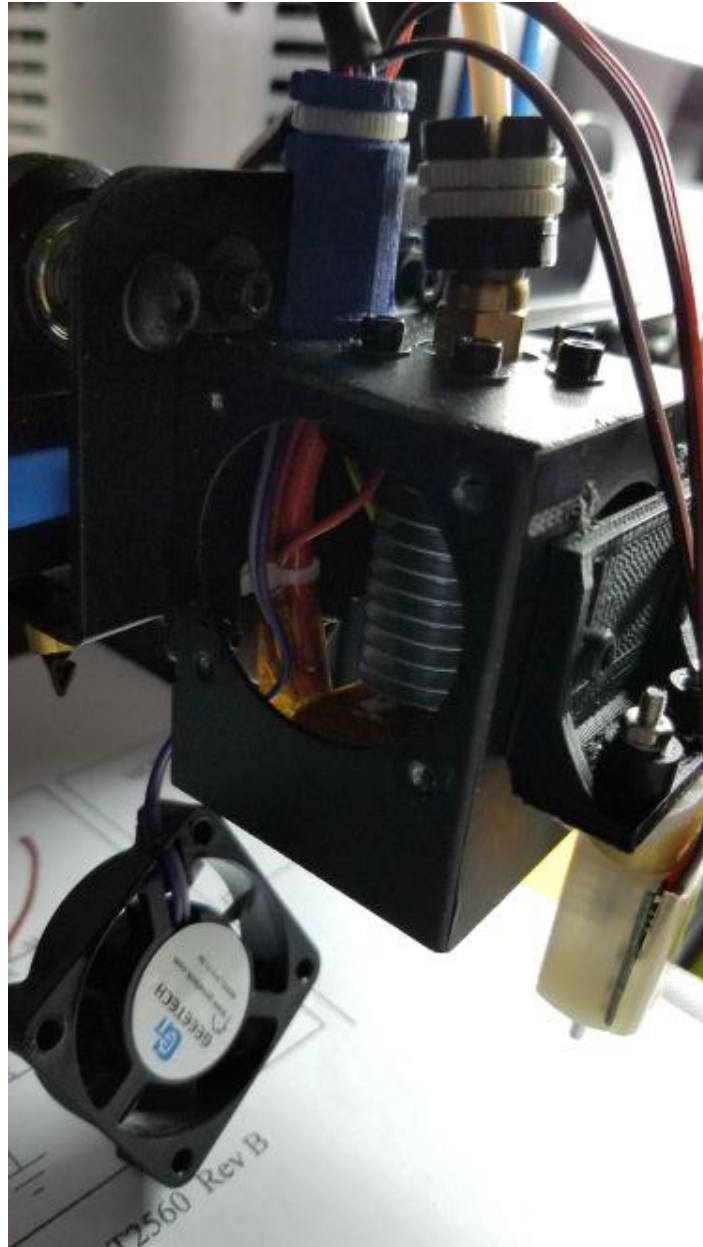
Connect "Z" endstop three (3) wires coming from control board connector pins 18, 16 (Z- MAX), 14 to probe (3) wires. I added a connector so that I could disconnect and replace or remove the probe.



The wires from the probe WHITE & Black I added pins to the wires and plugged them into the board connector using an extension cable colors were BLACK connected to Pins 13 = GND and RED to Pin 15 = Z (MIN)

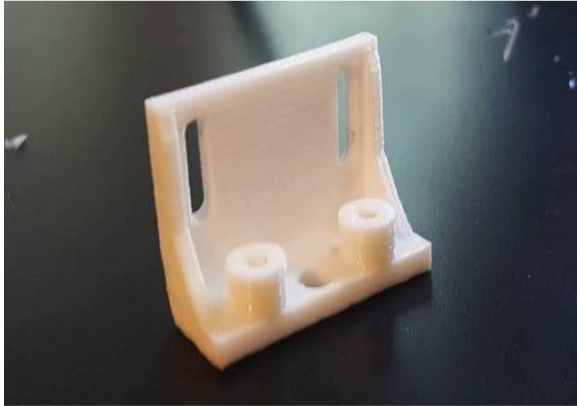


Mounting the probe to the front of the hotend assembly. Remove fan on left side to gain access to mounting screws and nuts for mount.



I had to drill holes because I needed to get the probe at a higher distance from the bed using my adjustable mount. I used 3mm screws and nuts.



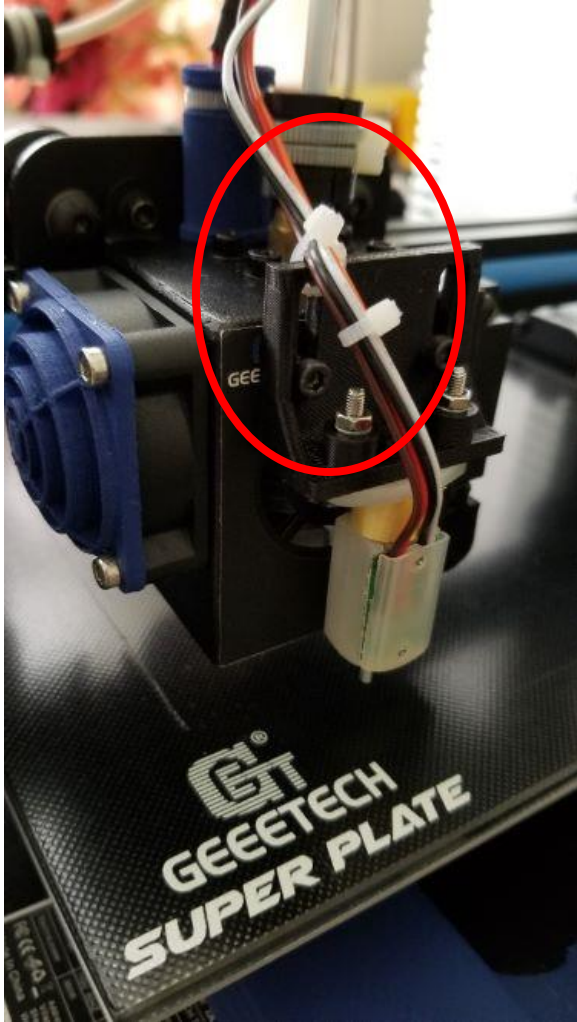


This is my printed mount for the probe. Features variable height adjustment

Use screws provided with BT-Touch

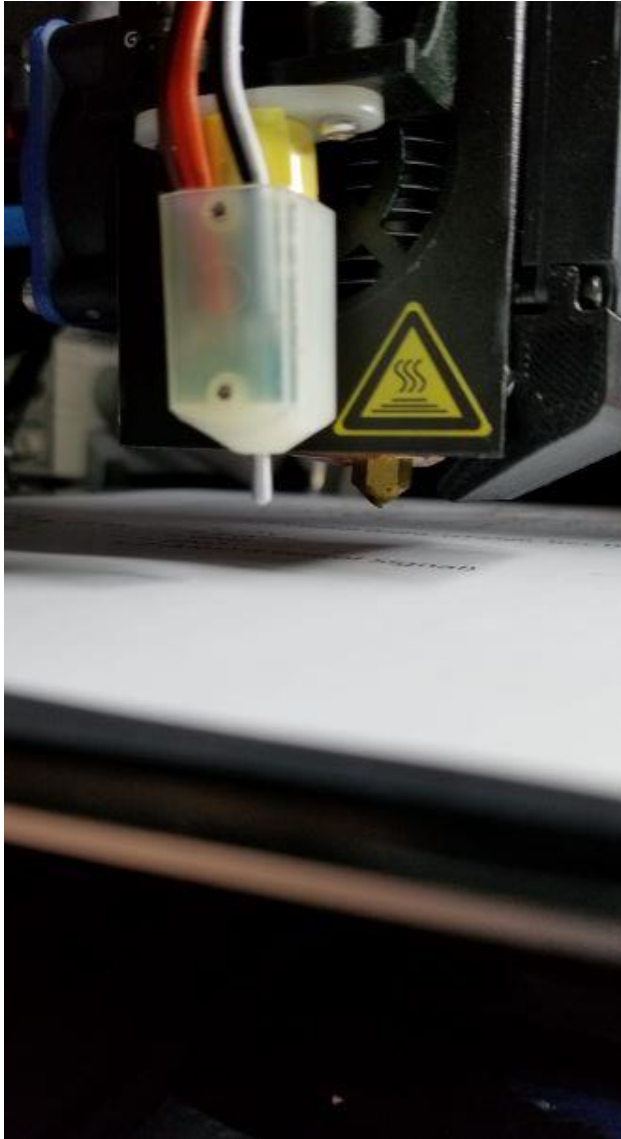
You can find this on Thingiverse:

[Geeetech_3d_touch_auto_leveling_sensor_adjustable_mount](#)



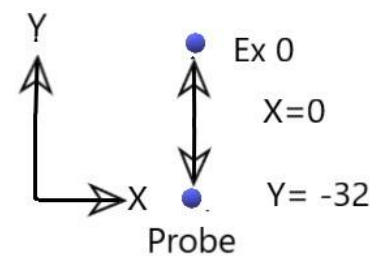
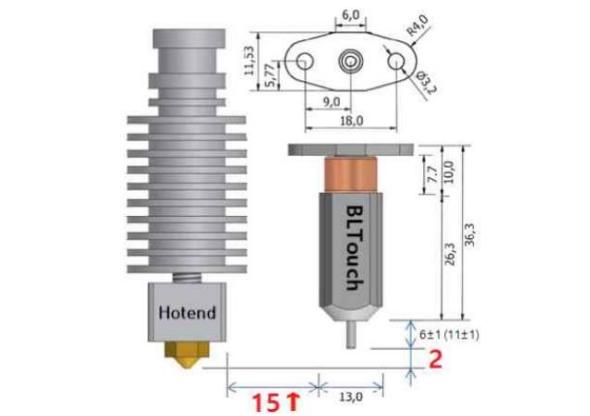
Learned something important!! My wires from the probe stretched up along the main cable were so tight that when doing bed leveling the probe was pulled just enough to cause mis measurement.

When the print started the nozzle dug right into the bed and jammed. What a lesson learned! I now have to replace the nozzle and possibly the bed. Note: Loosened wires on cables and I added tie wraps near probe.



Adjustment of probe height in relation to nozzle and bed.

Example ONLY! This is a critical measurement! If this is not set correctly the sensor probe tip may come in contact with print.



Example of my measurements

Marlin 1.1.9 modifications – Geeetech – A10

Huge thankyou to **Akos Wonerth** for all the technical assistance and especially in making code changes.

Configuration. H

enable **BLTOUCH**

```
/**
 * The BLTouch probe uses a Hall effect sensor and emulates a servo.
 */
#define BLTOUCH //AkosABL
#if ENABLED(BLTOUCH)
  //#define BLTOUCH_DELAY 375 // (ms) Enable and increase if needed
#endif
```

enable **Z_MIN_PROBE_REPEATABILITY_TEST**

```
// Enable the M48 repeatability test to test probe accuracy
#define Z_MIN_PROBE_REPEATABILITY_TEST //AkosABL
```

enable **AUTO_BED_LEVELING_BILINEAR**

```
//#define AUTO_BED_LEVELING_3POINT
//#define AUTO_BED_LEVELING_LINEAR
#define AUTO_BED_LEVELING_BILINEAR //AkosABL
//#define AUTO_BED_LEVELING_UBL
//#define MESH_BED_LEVELING
```

enable **Z_SAFE_HOMING**

```
// - Allow Z homing only after X and Y homing AND stepper drivers still enabled.
// - If stepper drivers time out, it will need X and Y homing again before Z homing.
// - Move the Z probe (or nozzle) to a defined XY point before Z Homing when homing all axes (G28).
// - Prevent Z homing when the Z probe is outside bed area.
//
#define Z_SAFE_HOMING //AkosABL

#if ENABLED(Z_SAFE_HOMING)
  #define Z_SAFE_HOMING_X_POINT ((X_BED_SIZE) / 2) // X point for Z homing when homing all axes (G28).
  #define Z_SAFE_HOMING_Y_POINT ((Y_BED_SIZE) / 2) // Y point for Z homing when homing all axes (G28).
#endif
```

change **X_PROBE_OFFSET_FROM_EXTRUDER**
change **Y_PROBE_OFFSET_FROM_EXTRUDER**
change **Z_PROBE_OFFSET_FROM_EXTRUDER**

```
/**
 * Z Probe to nozzle (X,Y) offset, relative to (0, 0).
 * X and Y offsets must be integers.
 *
 * In the following example the X and Y offsets are both positive:
 * #define X_PROBE_OFFSET_FROM_EXTRUDER 10
 * #define Y_PROBE_OFFSET_FROM_EXTRUDER 10
 *
 *      +-- BACK ---+
 *      |             |
 * L  |      (+) P    | R <-- probe (20,20)
 * E  |             | I
 * F  |  (-) N (+)   | G <-- nozzle (10,10)
 * T  |             | H
 *      |      (-)   | T
 *      |             |
 *      0-- FRONT --+
 *      (0,0)
 */
#define X_PROBE_OFFSET_FROM_EXTRUDER 0      // X offset: -left +right [of the nozzle]
#define Y_PROBE_OFFSET_FROM_EXTRUDER -33    // Y offset: -front +behind [the nozzle]
#define Z_PROBE_OFFSET_FROM_EXTRUDER -2     // Z offset: -below +above [the nozzle]
```

```
=====
```

pins_GT2560_REV_B.h

set **Z_MIN_PIN** 32
set **Z_MAX_PIN** 30

```
#define DEFAULT_MACHINE_NAME "Geeetech A10"
//Pins based on Mecreator2 board.
//Tested and configured by redangel1984

//
// Limit Switches
//
#define X_MIN_PIN 24
#define X_MAX_PIN 22
#define Y_MIN_PIN 28
#define Y_MAX_PIN 26
#define Z_MIN_PIN 32 // was 30
#define Z_MAX_PIN 30 // was 32
```


Example ONLY of how to determine and set “Z” Offset

HOT NOZZLE MEASUREMENT NO FILAMENT

Recommended Hot measurement as cold will distort actual measurement.

1. Issue a G28 command – should hold at last position – not rise up
2. Move the nozzle over point where probe tip touched down
3. Issue a G92 Z10 command – this allows ability to lower past set Z0 point
4. Using the LCD locate “Z” movement and adjust down in 0.1mm steps using paper to set nozzle where paper just starts to stick between nozzle and bed.
5. Issue a M114 command and note the “Z” value – example 7.60
6. Subtract the noted value from 10 and that’s your “Z” offset value 2.4
7. Issue a M851 Z-2.45 (whatever your calculated value was from above.
8. Issue a M851 command and it will Echo back set “Z” value
9. Issue a M500 command to save settings.
10. Re-Issue a G28 command – re-home all axis.
11. Issue a G1 Z0 command and it sets nozzle too new “Z” offset level.