3D printer

Resources

- hotend change
  - mount heatbreak and nozzle touching toghether and with **0.5mm gap** between head and nozzle
  - preheat hotend at ABS temp
  - fix nozzle with 1nm torque
- E3D V6 assembly
- temperature tower
  - set combing mode to off

z offset: subtract 0.25 to A4 paper without friction and without warm up

Printing tips

- Initial Layer Speed: 20mm/s
- Combing mode: not in skin
- Maximum Comb Distance with No Retract: 10mm
- Initial Layer Line Width: 140%

PLA:

- z-hop: 0

PETG:

- first layer: 245
- other layer: 245
- bed: 80
- z-hop: 0.6
- cooling: 50%

ABS:

- first layer: 250
- other layer: 240
- bed: 100
- z-hop: 0.6 or 0
- adhesion: brim
- speed:
  - 30mm/s for stronger material
  - 50mm/s for weaker material

Anycubic 4max pro 2

- fan duct
- extruder disassemble, head replace

anycubic_4max_4maxpro2.0_petg_fast

```
[general]
version = 4
name = 4MAXpro2.0 PETG fast
definition = anycubic_4max

[metadata]
type = quality_changes
quality_type = normal
intent_category = default
position = 0
setting_version = 19

[values]
cool_fan_enabled = True
cool_fan_speed = 50
infill_pattern = grid
infill_sparse_density = 20
initial_layer_line_width_factor = 140
material_initial_print_temperature = =max(-273.15,
material_print_temperature - 10)
material_print_temperature = 245
material_print_temperature_layer_0 = 245
optimize_wall_printing_order = True
raft_margin = 5
retraction_combing_max_distance = 10
retraction_hop = 0.6
retraction_hop_enabled = True
speed_layer_0 = 20
speed_print = 50
speed_print_layer_0 = =speed_layer_0
speed_travel = 100
speed_travel_layer_0 = =speed_layer_0 * speed_travel / speed_print
top_layers = =0 if infill_sparse_density == 100 else
math.ceil(round(top_thickness / resolveOrValue('layer_height'), 4))
travel_avoid_other_parts = False
wall_line_count = =1 if magic_spiralize else max(1,
round((wall_thickness - wall_line_width_0) / wall_line_width_x) + 1) if
wall_thickness != 0 else 0
```

anycubic_4max_extruder_0_#2_4maxpro2.0_petg_fast

```
[general]
```

```
version = 4
name = 4MAXpro2.0 PETG fast
definition = anycubic_4max

[metadata]
type = quality_changes
quality_type = normal
setting_version = 19

[values]
adaptive_layer_height_enabled = False
adhesion_type = skirt
default_material_bed_temperature = 60
layer_height = 0.3
material_bed_temperature = 80
material_bed_temperature_layer_0 = 80
retraction_combing = noskin
support_enable = False
support_type = buildplate
```

Flsun Super Racer

todo

Ender3 v2

- bed 70
- head 225
- Retraction Distance: 6.5mm.
- Retraction Speed: 25mm/s.
- Maximum Retraction Count: 10.
- Minimum Extrusion Distance Window: 10mm.
- Combing Mode: ON and set to “Within Infill” (no stringing).
- fan 100% for details or fan 0% for stranght
- bltouch
- jyers firmware settings in octoprint

Geeetech A20

first layer speed 10mm/s

into start g-code
keep only first G28
as below

```
G28; auto home
G1 Z15 F300; linear move, 15mm vertical and set feedrate at 300
M107; turn fan off
G90 ; absolute positioning
M82 ; This command is used to override G91 and put the E axis into absolute
mode independent of the other axes.
G92 E0; set absolute position
M107 ; M107; turn fan off
G0 X10 Y20 F6000 ; move to X 10 mm Y 20 mm , feed rate 6000
G1 Z0.8 ; move Z to 0.8 mm [WHY MOVE VERTICALLY?]
G1 F300 X200 E40 ; push 40 mm of filament while moving at 300 mm/min to
position X=200
G1 F1200 Z2 ; move to position Z=2 at 1200 mm/min
G92 E0 ; set the  extruder position as the new zeros
```

fetch marlin code and checkout same branch release on Marlin.git and Configurations.git

apply this

patch

```

git clone https://github.com/MarlinFirmware/Marlin.git
#git clone https://github.com/Jyers/Marlin.git

cd Marlin
check out latest release branch, for example 2.0.9.2
git clone https://github.com/MarlinFirmware/Configurations.git
cd Configurations
check out latest release branch, for example 2.0.9.2
#git clone https://github.com/Jyers/Configurations.git

# copy Configuration.h and Configuration_adv.h from examples
cd ..
rsync -av Configurations/config/examples/Geeetech/A20/ Marlin/

code .
// select default shell to bash Terminal: Select Default Profile

// change MOTHERBOARD
#define MOTHERBOARD BOARD_GT2560_V4_A20



// enable bltouch if present
```

```
// comment PROBE_MANUALLY and decomment BLTOUCH
//#define PROBE_MANUALLY
#define BLTOUCH
#define Z_MIN_ENDSTOP_INVERTING false  // Set to true to invert the logic of
the endstop.
#define Z_MIN_PROBE_ENDSTOP_INVERTING false  // Set to true to invert the
logic of the probe.
#define Z_SAFE_HOMING

// temporary
#define X_BED_SIZE 200
#define Y_BED_SIZE 200
#define X_MIN_POS -10

// original plate 260x260
//#define X_BED_SIZE 255
//#define Y_BED_SIZE 255
//#define Y_MIN_POS -5
```

install marlin auto build extension

change vscode settings.json

javascript

```
{

    "terminal.integrated.defaultProfile.linux": "bash"

}
```

To upload firmware add a **custom FFF** (no geeetech A20 model) printer and use upload firmware menu

- z offset wizard
- pid tuning

Anycubic Predator

manual silicone 039

- recensione 1
- customizzazioni
- cura profile
    - rename predator_image.png.stl to predator_image.png

custom spare parts:

- enclosure

- Fan Duct
- sensor holder
- smoothers holder
- Filament Sensor Relocation
- Ultimate Anycubic Predator Effector
- Anycubic Predator E3D V6 and Volcano Versions Effector
- V6 Super Effector for Anycubic Predator (SB3D)

Marlin firmware predator

clone this repository clone this marlin 2.0.9

or update scipio

download

```
cd /lab/printer3d/marlin-predator
# only one time
#git remote add upstream https://github.com/MarlinFirmware/Marlin.git
git fetch upstream
git rebase upstream/2.0.x
```

~~add to Marlin/Configuration.h~~

```
#define LCD_SCREEN_ROT_180
```

change

```
#define TEMP_SENSOR_0 11
```

decomment in Marlin/Configuration_adv.h

```
// Enable for M105 to include ADC values read from temperature sensors.
#define SHOW_TEMP_ADC_VALUES
```

build project: in platformio select trigorilla-pro

```
scp .pio/build/trigorilla_pro/firmware.bin root@octoprint.local:/root
```

remove jumper jp1 and change other jumper to USB video

getting info

```
stm32flash /dev/ttyUSB0

stm32flash 0.5

http://stm32flash.sourceforge.net/
```

```
Interface serial_posix: 57600 8E1
Version      : 0x22
Option 1     : 0x00
Option 2     : 0x00
Device ID    : 0x0414 (STM32F10xxx High-density)
- RAM        : 64KiB  (512b reserved by bootloader)
- Flash      : 512KiB (size first sector: 2x2048)
- Option RAM : 16b
- System RAM : 2KiB
```

make backup

```
stm32flash -r predator-original.bin /dev/ttyUSB0
```

write firmware

```
stm32flash -v -R -b 57600 -g 0x8000000 -w  firmware.bin /dev/ttyUSB0
```

platformio.ini

```
[env:trigorilla_pro]
platform      = ststm32
board         = genericSTM32F103ZE
build_flags   = !python Marlin/src/HAL/STM32F1/build_flags.py
```

Auto calibration

- configuration → delta calibration → auto → enter → wait → enter
- configuration → store

z offset

Disable software endstops (M211 S0), preheat and with motion z to grab paper: get deltaz (positive or negative, for example 0.3)

- configuration → runout sensors → off
- temperature → preheat PLA → preheat PLA
- motion → z

adjust probe z-offest adding deltaz:

- configuration → probe z-offest → =**z-offest+deltaz**

enable software endstops (M211 S1)

store settings

z babysteps

```
M290 Z0.25 ; move up 0.25mm on the Z axis
...
M500 ; store
```

PID autotune

start pid autotune at 220C and 8 cycles

```
M303 S220 C8
```

wait and store proposed values with M301

```
M301 P13.83 I0.76 D63.18
```

save settings

```
M500
```

Thermocouple tuning

Get actual extrusor thermocouple from Menu → About → Thermistors and from Configuration.h get actual thermistor_xx.h utilized

set hotend to 200C from control and check in terminal ADC value (138.06 in example)

```
Recv:  T:200.47 /200.00 (138.06) B:21.64 /0.00 (982.37) @:47 B@:0
```