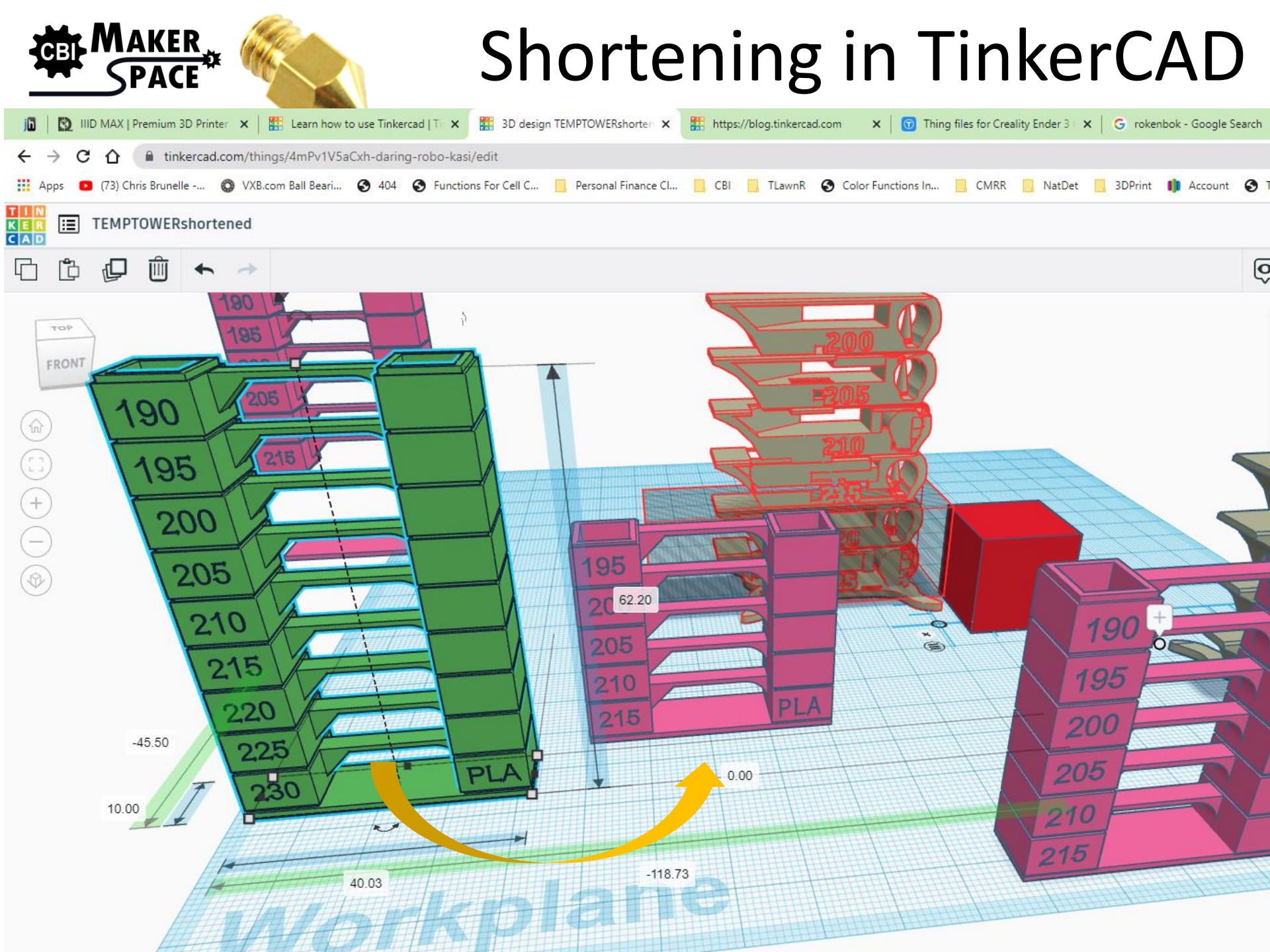
Ender Club Temperature Tower Workflow

March 2022

Shortening in TinkerCAD



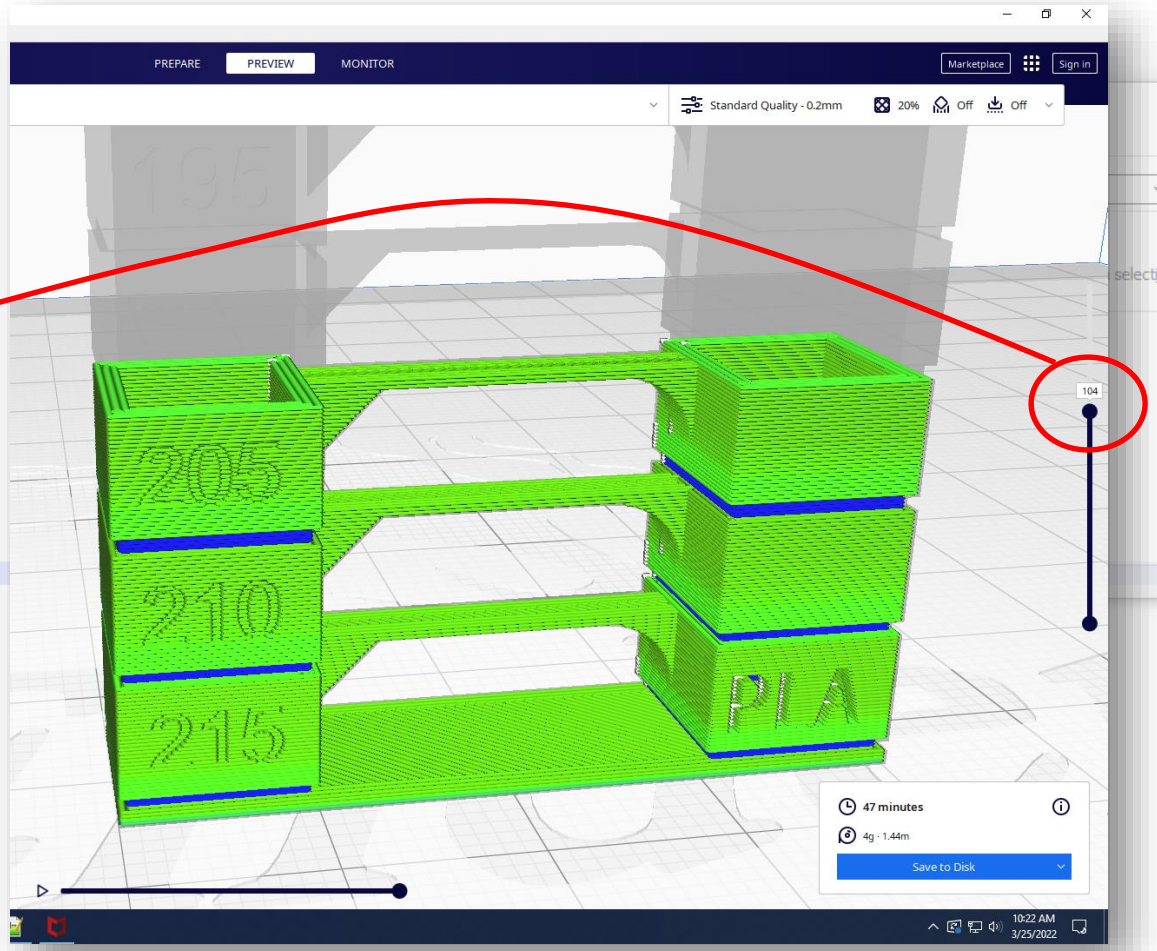
Finding Layers

C:\Users\CBI\Documents\E3club_TEMPTOWERshort.gcode - Notepad++

Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

ange.log | CE3_SmartTemperatureTower_PLA_180-225.gcode | TempTower_PLA_180-220_6.5-25_Retraction.gcode | 190-230Ender3Temptower.gcode | E3club_TEMPTOWERshort.gcode

```
G1 F1319.9 X127.89 Y113.373 E908.98646
G0 F9000 X127.998 Y112.983
G1 F1319.9 X128.73 Y113.1 E909.0136
G1 X136.649 Y113.1 E909.30358
G1 X136.914 Y113.117 E909.3133
G1 X136.914 Y121.32 E909.61367
G1 X136.766 Y121.752 E909.63039
G0 F9000 X136.675 Y122.125
G1 F1319.9 X137.139 Y121.661 E909.64131
G0 F9000 X137.048 Y122.034
G1 F1319.9 X136.334 Y121.9 E909.66732
G1 X128.415 Y121.9 E909.95086
G0 F9000 X128.134 Y121.882
G1 F2700 E904.95086
;MESH:NONMESH
G0 F300 X128.134 Y121.882 Z21
G0 F9000 X127.836 Y121.5
G0 X126.851 Y121.5
G0 X108.15 Y121.5
G0 X107.165 Y121.5
G0 X106.685 Y121.5
G1 F2700 E909.95086
G0 F9000 X106.485 Y121.5
;TIME_ELAPSED:1784.125726
;LAYER:104     <---------------------------- From Cura
;TYPE:WALL-OUTER
;MESH:TEMPTOWERshortened (3).stl
M104 S200 T0    ;---- Add for temperature
M105            ;---- Add for temperature
M109 S200       ;---- Add for temperature
G1 F840.9 X106.485 Y113.5 E910.21694
G1 X98.485 Y113.5 E910.48302
G1 X98.485 Y121.5 E910.7491
G1 X106.485 Y121.5 E911.01518
G0 F9000 X106.885 Y121.9
G1 F840.9 X98.085 Y121.9 E911.30787
G1 X98.085 Y113.1 E911.60056
G1 X106.885 Y113.1 E911.89325
G1 X106.885 Y121.9 E912.18594
G1 F2700 E907.18594
G0 F9000 X106.685 Y121.73
G0 X107.75 Y121.5
G0 X127.251 Y121.5
G0 X128.236 Y121.5
G1 F2700 E912.18594
G0 F9000 X128.516 Y121.5
G1 F840.9 X136.516 Y121.5 E912.45202
G1 X136.516 Y113.5 E912.7181
```



Setting Temperatures

```
14980  G0 X106.685 Y121.5
14981  G1 F2700 E909.95086
14982  G0 F9000 X106.485 Y121.5
14983  ;TIME_ELAPSED:1780.125726
14984  ;LAYER:104     <---------------------------- From Cura
14985  ;TYPE:WALL-OUTER
14986  ;MESH:TEMPTOWERshortened (3).stl
14987  M104 S200 T0     ;---- Add for temperature
14988  M105             ;---- Add for temperature
14989  M109 S200        ;---- Add for temperature
14990  G1 F840.9 X106.485 Y113.5 E910.21694
14991  G1 X98.485 Y113.5 E910.48302
14992  G1 X98.485 Y121.5 E910.7491
14993  G1 X106.485 Y121.5 E911.01518
14994  G0 F9000 X106.885 Y121.9
14995  G1 F840.9 X98.085 Y121.9 E911.30787
14996  G1 X98.085 Y113.1 E911.60056
```

RUNNING the test

M104 RESOURCE

/docs/gcode/M104.html

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M104 - Set Hotend Temperature

thermal | Set a new target hot end temperature.

Description

Set a new target hot end temperature and continue without waiting. The firmware will continue to try to reach and hold the temperature in the background.

Use `M109` to wait for the hot end to reach the target temperature.

Notes

- With `PRINTJOB_TIMER_AUTOSTART` this command will stop the print job timer if the temperature is set at or below half of `EXTRUDE_MINTEMP`.

Usage

`M104 [B<temp>] [F<flag>] [I<index>] [S<temp>] [T<index>]`

Parameters

`[B<temp>]`	`AUTOTEMP`: The max auto-temperature.
`[F<flag>]`	`AUTOTEMP`: Autotemp flag. Omit to disable autotemp.
`[I<index>]` </>2.0.6	Material preset index. Overrides `S`.
`[S<temp>]`	Target temperature. `AUTOTEMP`: the min auto-temperature.
`[T<index>]`	Hotend index. If omitted, the currently active hotend will be used.

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M105 RESOURCE

AIO cart | 3D Printi | Articulat | calipers | 100mm | Harbor F | Digital C | Thing fil | Right up | ACFrOg | Report T | Thing fil | Report T

rg/docs/gcode/M105.html

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M105 - Report Temperatures

thermal | Send a temperature report to the host.

Related codes: `M155`

Description

Request a temperature report to be sent to the host as soon as possible.

Notes

Some hosts may hide the reply from `M105`.

A better way for hosts to get regular temperature updates is to use `M155` (requires `AUTO_REPORT_TEMPERATURES` and `EXTENDED_CAPABILITIES_REPORT`). Hosts then no longer need to run an extra process or use up slots in the command buffer to receive temperatures.

Usage

`M105 [R] [T<index>]`

Parameters

`[R]`	Include the Redundant temperature sensor (if any)
`[T<index>]`	Hotend index

Examples

Get a temperature report

M109 RESOURCE

marlinfw.org/docs/gcode/M109.html

M109 - Wait for Hotend Temperature

thermal | Wait for the hot end to reach its target.

Description

This command optionally sets a new target hot end temperature and waits for the target temperature to be reached before proceeding. If the temperature is set with `S` then `M109` waits *only when heating*. If the temperature is set with `R` then `M109` will also wait for the temperature to go down.

Notes

With `PRINTJOB_TIMER_AUTOSTART` this command will start the print job if heating, and stop the print job timer if the temperature is set at or below half of `EXTRUDE_MINTEMP`.

This command (as well as `M190`) can block new commands from the host, preventing remote shutdown. However, if `EMERGENCY_PARSER` is enabled, a host can send `M108` to break out of the wait loop.

To set the hot end temperature and proceed without waiting, use `M104`.

Usage

`M109 [B<temp>] [F<flag>] [I<index>] [R<temp>] [S<temp>] [T<index>]`

Parameters

`[B<temp>]`	With `AUTOTEMP`, the max auto-temperature.
`[F<flag>]`	Autotemp flag. Omit to disable autotemp.
`[I<index>]` 2.0.6	Material preset index. Overrides `S`.
`[R<temp>]`	Target temperature (wait for cooling or heating).
`[S<temp>]`	Target temperature (wait only when heating). Also `AUTOTEMP`: The min auto-temperature.
`[T<index>]`	Hotend index. If omitted, the currently active hotend will be used.

Examples

TEMP Tower Premade

thingiverse.com/thing:3329956/files

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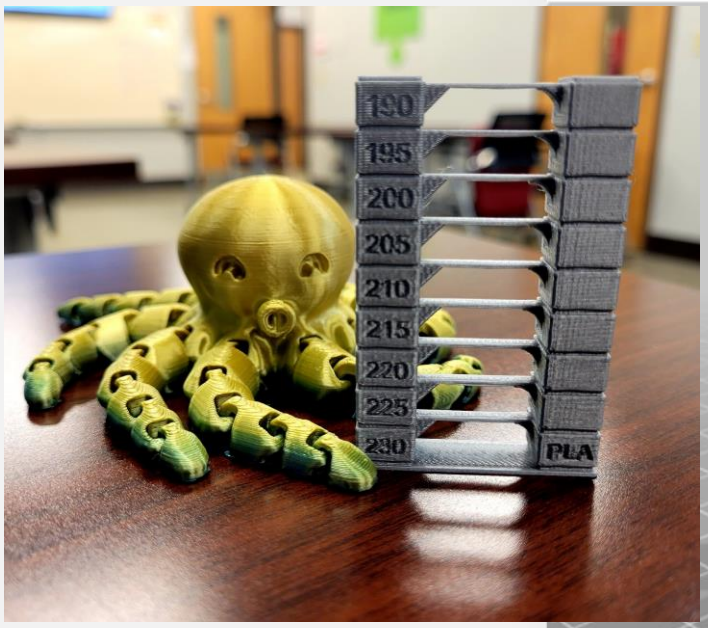
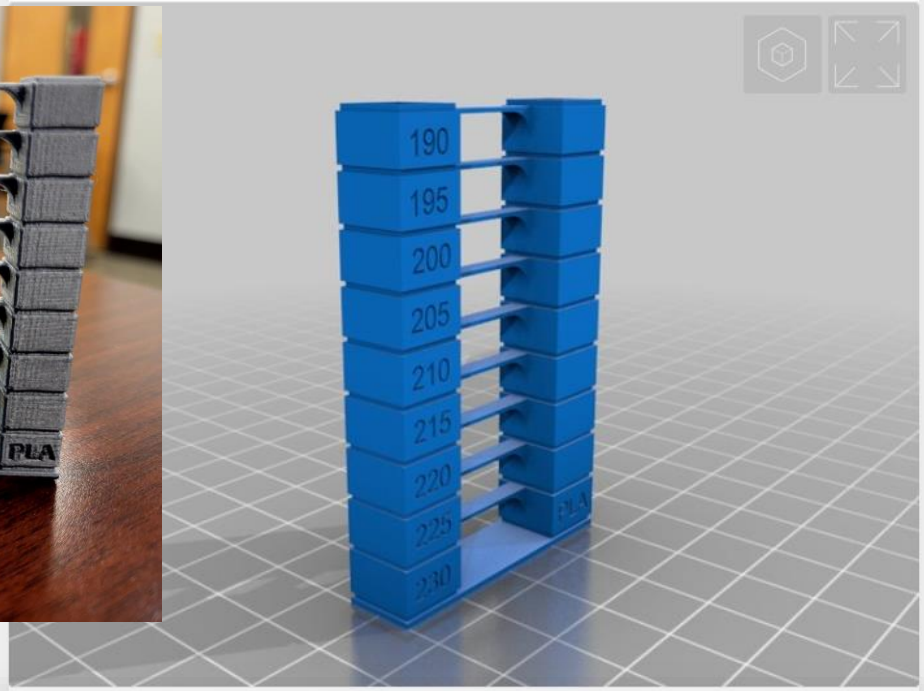
Ender 3 PLA temp tower easy

by dowmace January 02, 2019





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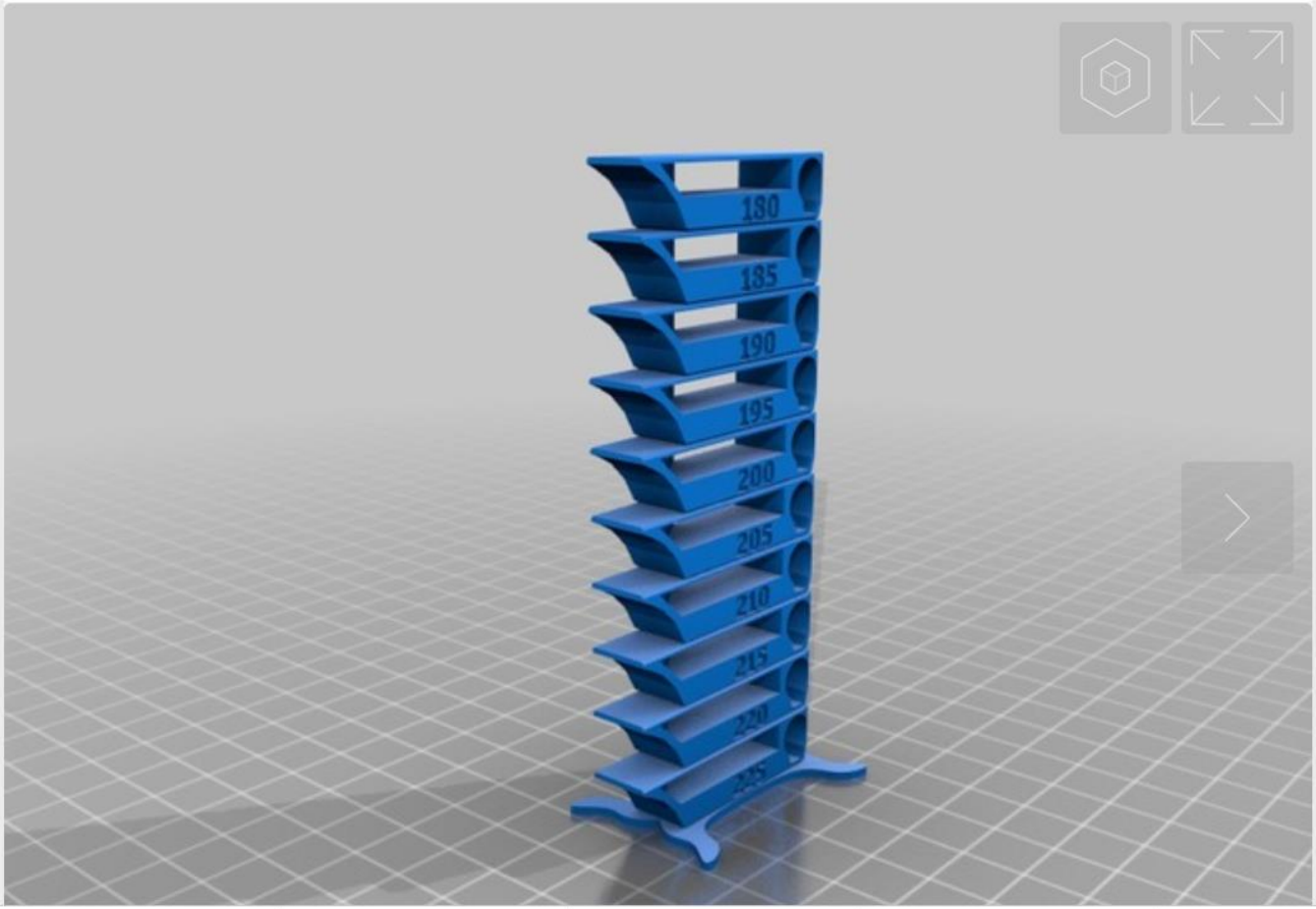
Smart compact temperature calibration tower

by gaaZolee December 24, 2017



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