



Ender Club Temperature Tower Workflow

March 2022



Shortening in TinkerCAD

tinkercad.com/things/4mPv1V5aCxb-daring- robo-kasi/edit

TEMP TOWERshortened

The image shows a 3D model of a tower structure in Tinkercad. The tower is composed of several stacked rectangular blocks with varying heights. The blocks are labeled with their respective heights: 190, 195, 200, 205, 210, 215, 220, 225, and 230. The material is labeled as PLA. The tower is shown in a perspective view, with a 'Workplane' label at the bottom. A yellow arrow points to the 'Workplane' label, indicating the process of shortening the tower. The dimensions of the tower are shown as follows: 40.03 (width), -45.50 (depth), and -118.73 (height). A red wireframe model of the tower is also visible, showing the internal structure. The interface includes a toolbar with various tools like copy, paste, delete, and undo. The browser address bar shows the URL: tinkercad.com/things/4mPv1V5aCxb-daring- robo-kasi/edit. The browser tabs include: IIID MAX | Premium 3D Printer, Learn how to use Tinkercad | T..., 3D design TEMPTOWERshorter, https://blog.tinkercad.com, Thing files for Creativity Ender 3, and rokenbok - Google Search. The browser's address bar also shows the URL: tinkercad.com/things/4mPv1V5aCxb-daring- robo-kasi/edit. The browser's tabs include: Apps, (73) Chris Brunelle..., VXB.com Ball Bear..., 404, Functions For Cell C..., Personal Finance Cl..., CBI, TLawnR, Color Functions In..., CMRR, NatDet, 3DPrint, Account, and T...



Finding Layers

C:\Users\CBI\Documents\E3club_TEMP TOWERshort.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_TEMP TOWERshort.gcode

```

60 G1 F1319.9 X127.89 Y113.373 E908.98646
61 GO F9000 X127.998 Y112.983
62 G1 F1319.9 X128.73 Y113.1 E909.0136
63 G1 X136.649 Y113.1 E909.30358
64 G1 X136.914 Y113.117 E909.3133
65 G1 X136.914 Y121.32 E909.61367
66 G1 X136.766 Y121.752 E909.63039
67 GO F9000 X136.675 Y122.125
68 G1 F1319.9 X137.139 Y121.661 E909.64131
69 GO F9000 X137.048 Y122.034
70 G1 F1319.9 X136.334 Y121.9 E909.66732
71 G1 X128.415 Y121.9 E909.95086
72 GO F9000 X128.134 Y121.882
73 G1 F2700 E904.95086
74 ;MESH:NONMESH
75 GO F300 X128.134 Y121.882 Z21
76 GO F9000 X127.836 Y121.5
77 GO X126.851 Y121.5
78 GO X108.15 Y121.5
79 GO X107.165 Y121.5
80 GO X106.685 Y121.5
81 G1 F2700 E909.95086
82 GO F9000 X106.485 Y121.5
83 ;TIME ELAPSED:1780.125726
84 ;LAYER:104 ----- From Cura
85 ;TYPE:WALL-OUTER
86 ;MESH:TEMPTOWERshortened (3).stl
87 M104 S200 T0 ;---- Add for temperature
88 M105 ;---- Add for temperature
89 M109 S200 ;---- Add for temperature
90 G1 F840.9 X106.485 Y113.5 E910.21694
91 G1 X98.485 Y113.5 E910.48302
92 G1 X98.485 Y121.5 E910.7491
93 G1 X106.485 Y121.5 E911.01518
94 GO F9000 X106.885 Y121.9
95 G1 F840.9 X98.085 Y121.9 E911.30787
96 G1 X98.085 Y113.1 E911.60056
97 G1 X106.885 Y113.1 E911.89325
98 G1 X106.885 Y121.9 E912.18594
99 G1 F2700 E907.18594
00 GO F9000 X106.685 Y121.73
01 GO X107.75 Y121.5
02 GO X127.251 Y121.5
03 GO X128.236 Y121.5
04 G1 F2700 E912.18594
05 GO F9000 X128.516 Y121.5
06 G1 F840.9 X136.516 Y121.5 E912.45202
07 G1 X136.516 Y113.5 E912.7181

```

PREPARE PREVIEW MONITOR Marketplace Sign in

Standard Quality - 0.2mm 20% Off Off

selection

104

47 minutes 4g - 1.44m Save to Disk

10:22 AM 3/25/2022



Setting Temperatures

```

14980 G0 X106.885 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
14997 G1 X106.885 Y113.1 E911.86335

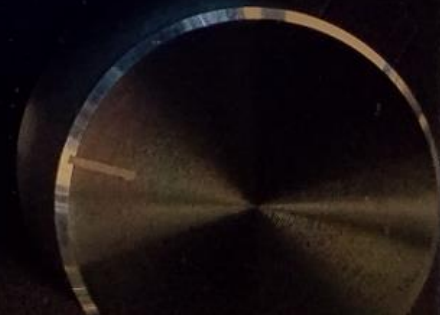
```



RUNNING the test



```
M36 hex.gcode  
Ender Tool Bkt 2020 p  
DBY03Dlevel  
-----  
E3club_TEMPTOWERshort  
-----  
SensorTowerPost.gcode
```





- [M34: SD/CFD Sorting](#)
- [M42: Set Pin State](#)
- [M43: Debug Pins](#)
- [M43 T: Toggle Pins](#)
- [M48: Probe Repeatability Test](#)
- [M73: Set Print Progress](#)
- [M75: Start Print Job Timer](#)
- [M76: Pause Print Job](#)
- [M77: Stop Print Job Timer](#)
- [M78: Print Job Stats](#)
- [M80: Power On](#)
- [M81: Power Off](#)
- [M82: E Absolute](#)
- [M83: E Relative](#)
- [M85: Inactivity Shutdown](#)
- [M92: Set Axis Steps-per-unit](#)
- [M100: Free Memory](#)
- [M104: Set Hotend Temperature](#)
- [M105: Report Temperatures](#)
- [M106: Set Fan Speed](#)
- [M107: Fan Off](#)
- [M108: Break and Continue](#)
- [M109: Wait for Hotend Temperature](#)
- [M110: Set Line Number](#)
- [M111: Debug Level](#)
- [M112: Emergency Stop](#)
- [M113: Host Keepalive](#)
- [M114: Get Current Position](#)
- [M115: Firmware Info](#)
- [M117: Set LCD Message](#)
- [M118: Serial print](#)
- [M119: Endstop States](#)
- [M120: Enable Endstops](#)
- [M121: Disable Endstops](#)
- [M122: TMC Debugging](#)

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

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



- M42: Set Pin State
- M43: Debug Pins
- M43 T: Toggle Pins
- M48: Probe Repeatability Test
- M73: Set Print Progress
- M75: Start Print Job Timer
- M76: Pause Print Job
- M77: Stop Print Job Timer
- M78: Print Job Stats
- M80: Power On
- M81: Power Off
- M82: E Absolute
- M83: E Relative
- M85: Inactivity Shutdown
- M92: Set Axis Steps-per-unit
- M100: Free Memory
- M104: Set Hotend Temperature
- M105: Report Temperatures**
- M106: Set Fan Speed
- M107: Fan Off
- M108: Break and Continue
- M109: Wait for Hotend Temperature
- M110: Set Line Number
- M111: Debug Level
- M112: Emergency Stop
- M113: Host Keepalive
- M114: Get Current Position
- M115: Firmware Info
- M117: Set LCD Message
- M118: Serial print
- M119: Endstop States
- M120: Enable Endstops
- M121: Disable Endstops
- M122: TMC Debugging
- M123: Fan Tachometers

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



- M73: Set Print Progress
- M75: Start Print Job Timer
- M76: Pause Print Job
- M77: Stop Print Job Timer
- M78: Print Job Stats
- M80: Power On
- M81: Power Off
- M82: E Absolute
- M83: E Relative
- M85: Inactivity Shutdown
- M92: Set Axis Steps-per-unit
- M100: Free Memory
- M104: Set Hotend Temperature
- M105: Report Temperatures
- M106: Set Fan Speed
- M107: Fan Off
- M108: Break and Continue
- M109: Wait for Hotend Temperature**
- M110: Set Line Number
- M111: Debug Level
- M112: Emergency Stop
- M113: Host Keepalive
- M114: Get Current Position
- M115: Firmware Info
- M117: Set LCD Message
- M118: Serial print
- M119: Endstop States
- M120: Enable Endstops
- M121: Disable Endstops
- M122: TMC Debugging
- M123: Fan Tachometers
- M125: Park Head
- M126: Baricuda 1 Open
- M127: Baricuda 1 Close
- M128: Baricuda 2 Open
- M129: Baricuda 2 Close
- M140: Set Bed Temperature
- M141: Set Chamber Temperature
- M143: Set Laser Cooler Temperature
- M145: Set Material Preset
- M149: Set Temperature Units
- M150: Set RGB(W) Color
- M154: Position Auto-Report
- M155: Temperature Auto-Report

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

Examples



TEMP Tower Premade

3D desig x FILE SHA x AIO cart x 3D Print x Articula x calipers x 100mm x Harbor F x Digital C x Thing fil x Inbox (4 x ACFrOgl x Wait for x Th

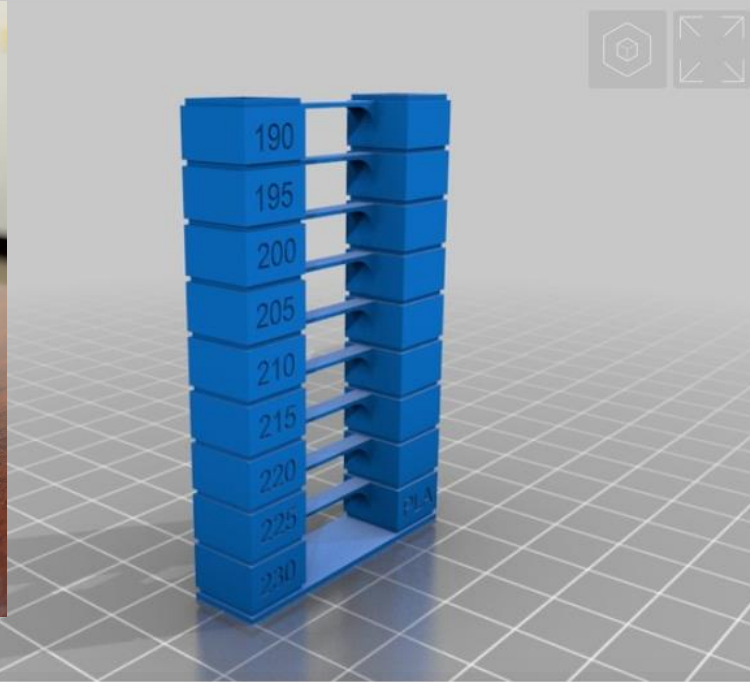
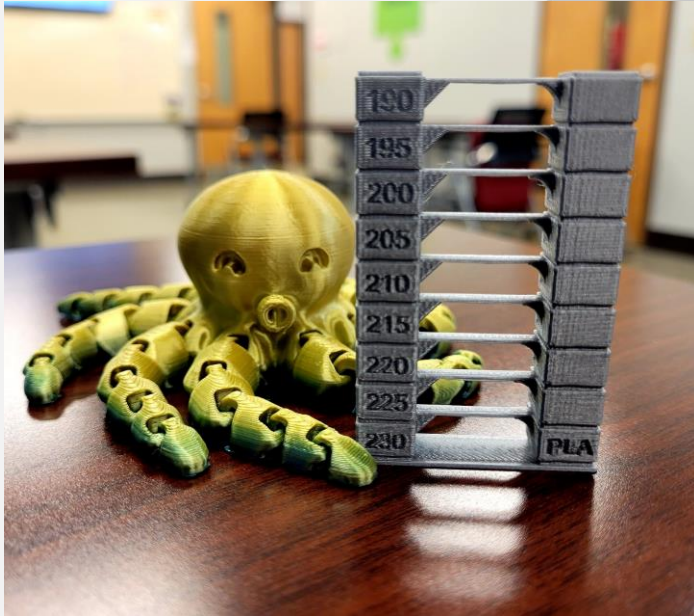
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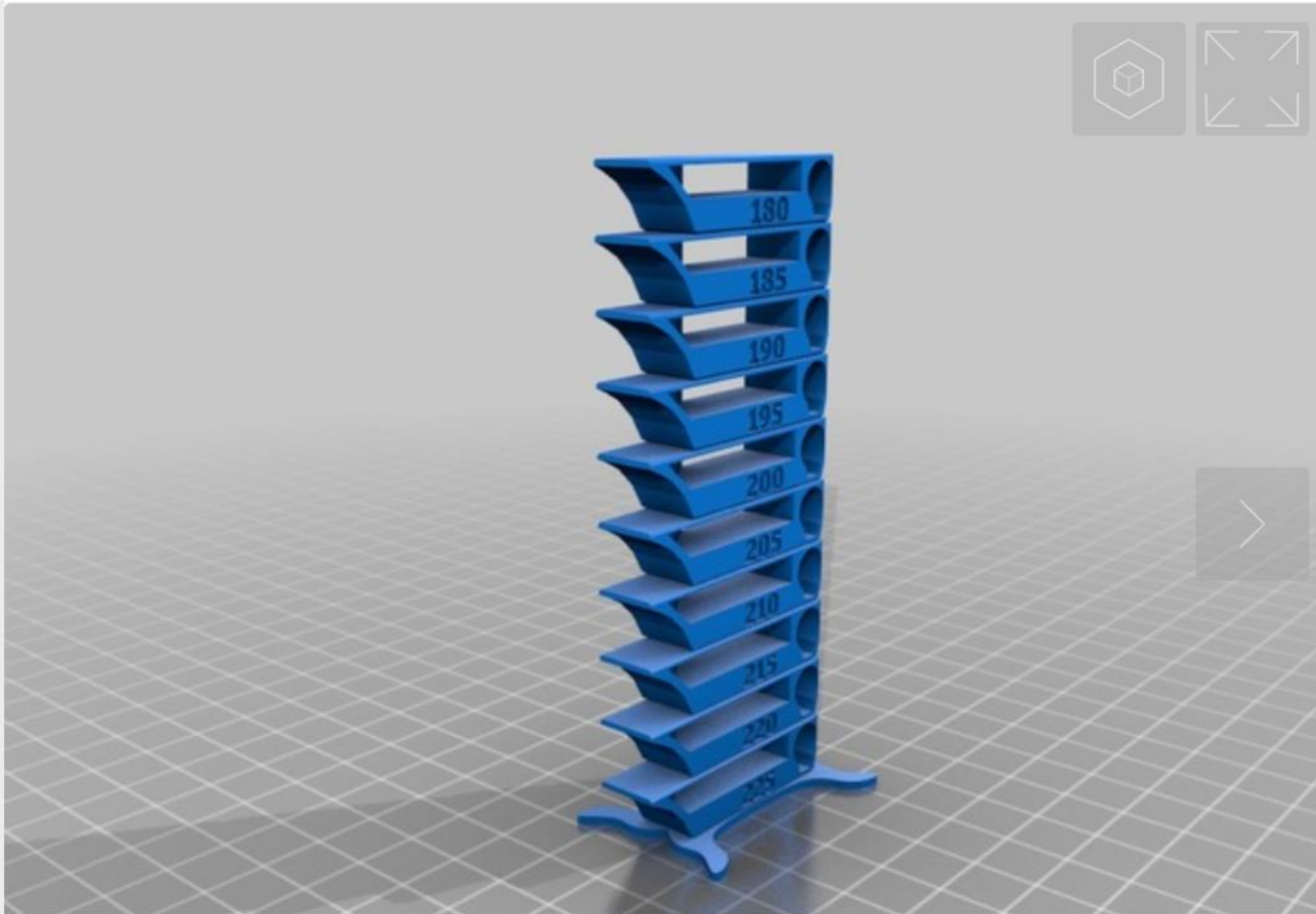
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by [gaaZolee](#) December 24, 2017



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