# LCD Menu Tree

This page is a work in progress, based on Marlin 1.1.2.

In addition to a serial/usb/host interface, Marlin also includes a comprehensive user interface designed for inexpensive character and graphical LCD controllers. Rotate a knob or use buttons to navigate menu items, edit values, and make other adjustments. Click the knob or press a button to choose menu items, exit adjustment screens, and perform other actions.

The tables below describe every menu item for every option. In normal use the LCD menu will be much smaller in size.

# Main Menu

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| **« Info Screen** |  |  |
| [**Tune »**](http://marlinfw.org/docs/features/lcd_menu.html#tune) |  | (if printing) |
| [**Prepare »**](http://marlinfw.org/docs/features/lcd_menu.html#prepare) |  | (if idle) |
| [**Control »**](http://marlinfw.org/docs/features/lcd_menu.html#control) |  |  |
| Pause/Resume Print |  | SDSUPPORT (while SD printing) |
| **Print from SD »** | Navigate the SD Card | SDSUPPORT (while idle) |
| **About Printer »** |  | LCD\_INFO\_MENU |

## Tune

The Tune menu is only available during active printing. Most items in this menu are editable values.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Main**](http://marlinfw.org/docs/features/lcd_menu.html#main-menu) |  |  |
| Speed: -–- | Feed Rate Multiplier |  |
| Bed Z: -.-–- | MBL Z offset | MESH\_BED\_LEVELING && LCD\_BED\_LEVELING |
| Nozzle (#): -–- | Nozzle temperature(s) | HOTENDS |
| Bed: -–- | Bed temperature(s) | HAS\_THERMALLY\_PROTECTED\_BED && WATCH\_BED\_TEMP\_PERIOD > 0 |
| Fan Speed (#): -–- |  | FAN\_COUNT > 0 |
| Flow (#): -–- | Flow Multiplier(s) | EXTRUDERS |
| Babystep X |  | BABYSTEPPING && BABYSTEP\_XY |
| Babystep Y |  | BABYSTEPPING && BABYSTEP\_XY |
| Babystep Z |  | BABYSTEPPING && !BABYSTEP\_ZPROBE\_OFFSET |
| **Change Filament »** | [M600](http://marlinfw.org/docs/gcode/M600.html) | FILAMENT\_CHANGE\_FEATURE and not too cold |

## Prepare

The Prepare menu is only available when the machine is not printing.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Main**](http://marlinfw.org/docs/features/lcd_menu.html#main-menu) |  |  |
| [**Move Axis »**](http://marlinfw.org/docs/features/lcd_menu.html#move-axis) |  | DELTA requires G28 first |
| Auto Home | [G28](http://marlinfw.org/docs/gcode/G028.html) |  |
| Auto Home X | [G28 X](http://marlinfw.org/docs/gcode/G028.html) | INDIVIDUAL\_AXIS\_HOMING\_MENU |
| Auto Home Y | [G28 Y](http://marlinfw.org/docs/gcode/G028.html) | INDIVIDUAL\_AXIS\_HOMING\_MENU |
| Auto Home Z | [G28 Z](http://marlinfw.org/docs/gcode/G028.html) | INDIVIDUAL\_AXIS\_HOMING\_MENU |
| [Bed Leveling »](http://marlinfw.org/docs/features/lcd_menu.html#bed-leveling) | [G29](http://marlinfw.org/docs/gcode/G029-abl.html) guided manual probing | LCD\_BED\_LEVELING |
| Set Home Offsets | [M428](http://marlinfw.org/docs/gcode/M428.html) | !DELTA && !NO\_WORKSPACE\_OFFSETS |
| Disable Steppers | [M18](http://marlinfw.org/docs/gcode/M018.html) |  |
| Change Filament(to be confirmed) | [M600](http://marlinfw.org/docs/gcode/M600.html) | FILAMENT\_CHANGE\_FEATURE and not too cold |
| Cooldown |  | TEMP\_SENSOR\_0 (shown if currently heating) |
| [**Preheat PLA »**](http://marlinfw.org/docs/features/lcd_menu.html#preheat-pla) |  | TEMP\_SENSOR\_0 |
| [**Preheat ABS »**](http://marlinfw.org/docs/features/lcd_menu.html#preheat-abs) |  | TEMP\_SENSOR\_0 |

### Move Axis

The move axis sub-menu was reorganized for Marlin 1.1. To use the move commands, first select the axis to move, then select the move distance. Use the controller wheel (or arrow buttons) to adjust the axis position. For larger move sizes, Marlin waits until you stop moving the controller for 1/2 second before it starts the move, giving you an opportunity to catch overshoot.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Prepare**](http://marlinfw.org/docs/features/lcd_menu.html#prepare) |  |  |
| **Move X »** | Select X move size, do moves | (may require [G28](http://marlinfw.org/docs/gcode/G028.html), safe zone, etc.) |
| **Move Y »** | Select Y move size, do moves | (may require [G28](http://marlinfw.org/docs/gcode/G028.html), safe zone, etc.) |
| **Move Z »** | Select Z move size, do moves | (DELTA and SCARA require [G28](http://marlinfw.org/docs/gcode/G028.html)) |
| Auto Home(to be confirmed) | [G28](http://marlinfw.org/docs/gcode/G028.html) | (shown if not homed) |
| **Extruder »** |  |  |

### Bed Leveling

The Bed Leveling menu groups together commands for calibrating the nozzle-to-bed distance. Different options will appear depending on your setup and the type of leveling you’ve enabled. **Level Bed** runs the default G29 procedure. For auto bed leveling this will deploy the probe, measure all points, and stop. For manual leveling (PROBE\_MANUALLY or MESH\_BED\_LEVELING) you’ll be taken through a step-by-step process.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Prepare**](http://marlinfw.org/docs/features/lcd_menu.html#prepare) |  |  |
| Auto Home | G28 | Unknown position |
| Fade Height: -.-– | M420 Z | ENABLE\_LEVELING\_FADE\_HEIGHT |
| Bed Z: -.-–- | G29 Z | MESH\_BED\_LEVELING |
| **Level bed »** | G29/G29 S1 | Known position |
| Load Settings | M501 | EEPROM\_SETTINGS |
| Save Settings | M500 | EEPROM\_SETTINGS |

### Preheat PLA

Set the fan speed plus bed and/or nozzle temperature to the preset “PLA” settings. Use M145 S0 ... to change the temperatures and fan speed used for this menu.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Main**](http://marlinfw.org/docs/features/lcd_menu.html#main-menu) |  |  |
| Preheat PLA | Active Extruder, fan, bed | HOTENDS == 1 |
| Preheat PLA End | Active Extruder only | HOTENDS == 1 |
| Preheat PLA Bed | Preheat E1 (and bed) | HOTENDS >= 2 |

### Preheat ABS

Set the fan speed plus bed and/or nozzle temperature to the preset “ABS” settings. Use M145 S1 ... to change the temperatures and fan speed used for this menu.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Main**](http://marlinfw.org/docs/features/lcd_menu.html#main-menu) |  |  |
| Preheat ABS | Active Extruder, fan, bed | HOTENDS == 1 |
| Preheat ABS End | Active Extruder only | HOTENDS == 1 |
| Preheat ABS Bed | Preheat E1 (and bed) | HOTENDS >= 2 |

## Control

The Control sub-menu includes the Temperature, Motion, and Filament sub-menus and Settings/EEPROM commands, plus a few other miscellanous hardware control commands.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Main**](http://marlinfw.org/docs/features/lcd_menu.html#main-menu) |  |  |
| [**Temperature »**](http://marlinfw.org/docs/features/lcd_menu.html#temperature) |  |  |
| [**Motion »**](http://marlinfw.org/docs/features/lcd_menu.html#motion) |  |  |
| [**Filament »**](http://marlinfw.org/docs/features/lcd_menu.html#filament) |  |  |
| Store settings |  | EEPROM\_SETTINGS |
| Load settings |  | EEPROM\_SETTINGS |
| Restore failsafe | M502 Settings to defaults |  |
| Initialize EEPROM | M502+M500 Default settings and store to EEPROM |  |

### Temperature

Use this sub-menu to set the target temperature for nozzles and the bed, fan speed, AUTOTEMP, PID factors, and material preheat settings.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Control**](http://marlinfw.org/docs/features/lcd_menu.html#control) |  |  |
| Nozzle: -–- | Current E Target Temperature | HOTENDS == 1 |
| Bed: -–- | Bed Target Temperature | HAS\_THERMALLY\_PROTECTED\_BED && WATCH\_BED\_TEMP\_PERIOD > 0 |
| Fan Speed: -–- |  | FAN\_COUNT == 1 |
| Pid P E1: -–- |  | PIDTEMP && PID\_PARAMS\_PER\_HOTEND && HOTENDS >= 1 |
| Pid I E1: -–- |  | PIDTEMP && PID\_PARAMS\_PER\_HOTEND && HOTENDS >= 1 |
| Pid D E1: -–- |  | PIDTEMP && PID\_PARAMS\_PER\_HOTEND && HOTENDS >= 1 |
| [**Preheat PLA conf »**](http://marlinfw.org/docs/features/lcd_menu.html#preheat-pla-conf) |  |  |
| [**Preheat ABS conf »**](http://marlinfw.org/docs/features/lcd_menu.html#preheat-abs-conf) |  |  |

#### Preheat PLA conf

The temperatures and fan speed set here will be used for the “Preheat PLA” menu item.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Control**](http://marlinfw.org/docs/features/lcd_menu.html#control) |  |  |
| Fan Speed: -–- |  | HAS\_FAN |
| Nozzle: -–- |  |  |
| Bed: -–- |  | TEMP\_SENSOR\_BED |
| Store settings | M500 |  |

#### Preheat ABS conf

The temperatures and fan speed set here will be used for the “Preheat ABS” menu item.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Control**](http://marlinfw.org/docs/features/lcd_menu.html#control) |  |  |
| Fan Speed: -–- |  | HAS\_FAN |
| Nozzle: -–- |  |  |
| Bed: -–- |  | TEMP\_SENSOR\_BED |
| Store settings | M500 |  |

### Motion

The motion settings provide control over tunable movement parameters which can be stored to EEPROM.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Control**](http://marlinfw.org/docs/features/lcd_menu.html#control) |  |  |
| [Velocity »](http://marlinfw.org/docs/features/lcd_menu.html#feedrate) | Feedrate settings |  |
| [Acceleration »](http://marlinfw.org/docs/features/lcd_menu.html#acceleration) | Acceleration settings |  |
| [Jerk »](http://marlinfw.org/docs/features/lcd_menu.html#jerk) | Jerk settings |  |
| [Steps/mm »](http://marlinfw.org/docs/features/lcd_menu.html#stepsmm) | Steps/mm for XYZ axes and extruders |  |

#### VELOCITY

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Motion**](http://marlinfw.org/docs/features/lcd_menu.html#motion) |  |  |
| Vmax X: -–- | Max X Velocity (mm/s) |  |
| Vmax Y: -–- | Max Y Velocity (mm/s) |  |
| Vmax Z: -–- | Max Z Velocity (mm/s) |  |
| Vmax E: -–- | Max E Velocity (mm/s) |  |
| Vmin: -–- | Min Feedrate (mm/s) |  |
| VTrav min: -–- | Min Travel Velocity (mm/s) |  |

#### Acceleration

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| [**« Motion**](http://marlinfw.org/docs/features/lcd_menu.html#motion) |  |  |
| Accel: -–- | Nominal Acceleration |  |
| A-retract: -–- | Retract Acceleration (mm/s2) |  |
| A-travel: -–- | Travel Acceleration (mm/s2) |  |
| Amax X: -–- | Max X Acceleration (mm/s2) |  |
| Amax Y: -–- | Max Y Acceleration (mm/s2) |  |
| Amax Z: -–- | Max Z Acceleration (mm/s2) |  |
| Amax E: -–- | Max E Acceleration (mm/s2) |  |

#### Jerk

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| **« Motion** |  |  |
| Vx-Jerk: -–- | Max X Jerk |  |
| Vy-Jerk: -–- | Max Y Jerk |  |
| Vz-Jerk: -–- | Max Z Jerk |  |
| Ve-Jerk: -–- | Max E Jerk |  |

#### Steps/mm

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| **« Motion** |  |  |
| Xsteps/mm: -–- | X steps-per-mm |  |
| Ysteps/mm: -–- | Y steps-per-mm |  |
| Zsteps/mm: -–- | Z steps-per-mm |  |
| Esteps/mm: -–- | E steps-per-mm |  |

### Filament

Volumetric extrusion, Linear Advance K factor, and filament diameter per-extruder.

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| **« Control** |  |  |
| E in mm3 ON/OFF | Volumetric Units |  |

### About Printer

| **Item** | **Description** | **Requirements** |
| --- | --- | --- |
| **«**Main |  |  |
| Printer Info » | Revive after an error |  |
| Board Info » | Run the built-in self-test |  |
| Thermistors » |  |  |