

Stepper Motor

Feature Name: Stepper Motor

Feature Name in Annotation: Moter_Type_Stepper

Source of Information

Domain knowledge, Code comment, Source Code, G-code documentation, ifdefs

Strategy Used:

Through 3D printer construction, we learned that there are stepper drivers that connect to the board. This hardware component was also drawn on our first version of the feature model. Then we started from the largest and most central logic file MarlinMain.cpp to check whether the comments, variables and method names contain keywords such as “stepper” and “step”. The source code are also checked to see whether they are actually related to the functionalities of stepper. There are also other keywords such as “acceleration” that allows the users to set the acceleration rate of the steppers. According to G-code documentation, there are certain G-codes i.e. M17, M18 that are directly related to settings for the endstops

Feature Description: This feature is mandatory for Marlin. Steppers are motion drivers that connect to the board, and they act as power source to the motors that set motion to all axes.

Time spent: This feature is one of 18 features that were located by manually going through all code files of Marlin using our source code method. It took one person 25 hours to identify all 18 features.

Feature Characteristics:

Feature Name	LoFC	SD	TD	Completely Wrapped by ifdef
Motor_Type_Stepper	262	12	2	No

Ratios of sources (%)

RL	PR	CM	Ifdef	DK	CC	SC	GD
0	0	0	5	35	5	45	10

RL: Release Log; **PR:** Pull Request; **CM:** Commit, **Ifdef:** Ifdef Expression; **DK:** Domain Knowledge; **CC:** Code Comment; **SC:** Source Code; **GD:** G-Code Documentation.