

Summary of "M" Codes

[M00 Program Temporary Stop](#)

[M01 Program Optional Stop](#)

[M02 Program Rewind](#)

[M03 Spindle On Clockwise Direction](#)

[M04 Spindle Counter Clockwise Direction](#)

[M05 Spindle Stop](#)

[M06 Execute Tool Change](#)

[M07 Mist Coolant or Air Blow](#)

[M08 Flood Coolant On](#)

[M09 Flood Coolant & Mist or Air Blow Off](#)

[M19 Spindle Orientation](#)

[M30 End of Program / Rewind](#)

[M47 Return to top of program](#)

[M48 Enable Speed and Feed Override](#)

[M49 Disable Speed and Feed Override](#)

[M98 Execute Sub Program](#)

[M99 End sub Program](#)

M00 Program Temporary Stop

The program temporary stop (M00) will stop all movement of the CNC when it is read by the controller. Once activated, the cycle start must be pressed for the program to start operating again.

Some common, but not limited to uses are when a part needs to be flipped or turned prior to continue running of the program or the operator just wants to stop it for any reason etc.

[Return to the top of the page](#)

M01 Program Optional Stop

The program optional stop (M01) will stop all movement of the CNC when it is read by the controller **If the Optional Stop button is pressed / active.** It performs the exact same function as the M00 command but can “optionally” turned on and off at will. Once activated, the cycle start must be pressed for the program to start operating again.

Some common, but not limited to uses may be if a tool has been changed and you want the program to stop after a tool has completed it's programmed function to check a size before another tool is to be entered in to the work area such as checking a drilled hole before allowing the tap to go in etc.

[Return to the top of the page](#)

M02 Program Rewind

This is usually the last code entered and is at end of the program. It simply returns the cursor to the top of the program. It is able to turn off all outputs but can be modified by the builder as needed. M30 serves the same function.

[Return to the top of the page](#)

M03 Spindle On Clockwise Direction

When an M03 is commanded this will turn the spindle or cutter on in a Clockwise direction. Clockwise direction is viewed the same as right handed. If tapping, this would be turning the direction for a right handed tap to entering a part / hole.

[Return to the top of the page](#)

M04 Spindle Counter Clockwise Direction

When an M04 is commanded this will turn the spindle or cutter on in a Counter Clockwise direction. Counter Clockwise direction is viewed the same as left handed. If tapping, this would be turning the direction for a left handed tap to entering a part / hole.

[Return to the top of the page](#)

M05 Spindle Stop

When an M05 is commanded this will turn the spindle or cutter off. It will cancel an [M03](#) or [M04](#) command.

[Return to the top of the page](#)

M06 Execute Tool Change

When an M06 is commanded it will execute a tool change. Depending on the machine configuration this can be set up in different ways.

* If an automatic tool changer is installed, an M06 will start the tool change cycle. It will put the current tool located in the spindle back in the tool changer, then insert the commanded tool in the spindle. The commanded tool is programmed as the following: T5 M06 If Tool 1 was in the spindle, it would first put tool 1 back in the tool changer, then get tool 5 and put it in.

· If no automatic tool changer is installed, there are currently 2 additional options available in general configuration settings. They are (1) Ignore tool change or (2) stop spindle and wait for cycle start. Ignore tool change will do just that. Stop spindle and wait for cycle start will complete an operation and then when an M06 is commanded it will turn off the spindle (M05) and wait for the cycle start to be pressed.

[Return to the top of the page](#)

M07 Mist Coolant or Air Blow

When an M07 is commanded an output will be activated that will turn on a coolant misting system or an air blow.

[Return to the top of the page](#)

M08 Flood Coolant

When an M08 is commanded an output will be activated that will turn on flood coolant.

[Return to the top of the page](#)

M09 Flood and Mist Coolant Off

When an M09 is commanded the outputs for the M08 and M07 will be turned off.

[Return to the top of the page](#)

M19 Spindle Orientation

When an M19 is commanded the Spindle orientation is executed. This is a specific spot on the spindle that will align drive dogs for an automatic tool or it is also used in some “G” code boring cycles.

[Return to the top of the page](#)

M30 End of Program and Rewind

When an M30 is commanded it will turn off all outputs such as turn off the spindle, turn off coolant and rewind the program.

[Return to the top of the page](#)

M47 Return to top of the program

When an M47 is commanded it will rewind the program and continue to run.

[Return to the top of the page](#)

M48 Enable Feed and Speed Override

When an M48 is commanded it will allow the operator to adjust the feed and speed overrides.

[Return to the top of the page](#)

M49 Disable Feed and Speed Override

When an M49 is commanded it not will allow the operator to adjust the feed and speed overrides.

[Return to the top of the page](#)

M98 Execute sub Program

When an M98 is commanded it will run a separate program located inside of the main program. This is commonly used while hand programming for things such as nesting a part or repeating over specific locations.

[Return to the top of the page](#)

M99 End sub Program

M99 signals the end of a sub program.