

Start/Stop Setup

This article is designed to introduce the reader to the basic setup process of the Start/Stop procedure in myCNC settings.

Upon opening **CNC Settings > Preferences > Start/Stop**, the following screen is presented to the user:

The screenshot displays the 'Start/Stop' configuration window in myCNC. The sidebar on the left lists various settings categories, with 'Start/Stop' highlighted. The main panel is divided into sections for configuring cutting commands, stop times, and start behavior. A 'SAVE' button with a download icon is located in the top right corner.

Setting	Value
Cutting ON commands	M20; M71; M03;
Cutting OFF commands	M21; M74; M05;
Soft stop time,s	0.05
Limit stop time,s	0.05
Deceleration time, if "Stop" pressed	
After Stop Handler	Not defined
On Start	
Check Soft Limits for the full toolpath	<input checked="" type="checkbox"/>
Toolpath Position checking, axes	<input checked="" type="checkbox"/> x <input checked="" type="checkbox"/> y <input checked="" type="checkbox"/> z <input checked="" type="checkbox"/> a <input checked="" type="checkbox"/> b <input checked="" type="checkbox"/> c <input checked="" type="checkbox"/> u <input checked="" type="checkbox"/> v
<i>Current position & Toolpath position should be equal in given axes</i>	
Goto Toolpath Position for axes	<input checked="" type="checkbox"/> x <input checked="" type="checkbox"/> y <input checked="" type="checkbox"/> z <input checked="" type="checkbox"/> a <input checked="" type="checkbox"/> b <input checked="" type="checkbox"/> c <input checked="" type="checkbox"/> u <input checked="" type="checkbox"/> v
<i>Cutting/Spindle ON & tool moves to toolpath position on Start for given axes</i>	
	Direct Move
Lift Height	10
Move-to-Toolpath speed	6000
Current position as Start ((*Disabled by default)	<input checked="" type="checkbox"/>
Reset work Position on "Reset-NC", "Tie" pressed.	<input checked="" type="checkbox"/>

On Start behaviour

A common scenario with mill and plasma machines is having to move the plasma torch or any other working tool away from the cutting point in the middle of running a program, for cleaning/inspection/etc. In order to continue the cutting process smoothly after having stopped the machine and moved the working tool, the **On Start** section of the Start/Stop menu can be used to properly describe the behaviour of the machine when it is started again from the middle of the program.

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- DXF import settings
- Macro List
- Macro Wizard
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 - Hardware
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Cutting ON commands
M20; M71; M03;

Cutting OFF commands
M21; M74; M05;

Soft stop time,s
0.05

Limit stop time,s
0.05

Deceleration time, if "Stop" pressed
Not defined

After Stop Handler
Not defined

On Start

Check Soft Limits for the full toolpath ☒

Toolpath Position checking, axes
☒ x ☒ y ☒ z ☒ a ☒ b ☒ c ☒ u ☒ v
 Current position & Toolpath position should be equal in given axes

Goto Toolpath Position for axes
☒ x ☒ y ☒ z ☒ a ☒ b ☒ c ☒ u ☒ v
 Cutting/Spindle ON & tool moves to toolpath position on Start for given axes

Lift Height
10

Move-to-Toolpath speed
6000

Current position as Start ((*Disabled by default)
☒

Reset work Position on "Reset-NC", "Tie" pressed.
☒

The behaviour of the machine with all the flags turned OFF is to simply continue cutting straight from the the point to which the working tool has been moved, as if it was still at its original position. This can lead to issues with cutting, since this effectively fails to cut the particular part at which the machine has been stopped. In order to correct this, two options are present.

- **OPTION 1:** Block the machine from starting up again if the new start point for the cut is not the same as the stop point.
- **OPTION 2:** After the machine has been stopped and move, automatically move it back to the original stop position before attempting to cut again.

NOTE: Only one option can be chosen for each given axis

Option 1: Block the machine from running

In order to block the machine from running if its new start position is different from its stop position, the user can select the particular axes for the machine to check before running. In the example below, the x- and y-axes have been selected to check their position before attempting to move again.

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5 axes RTCP

Panel/Pendant

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Advanced

Cutting ON commands

Cutting OFF commands

Soft stop time,s

Limit stop time,s

After Stop Handler

On Start

Check Soft Limits for the full toolpath

Toolpath Position checking, axes

Goto Toolpath Position for axes

Lift Height

Move-to-Toolpath speed

Current position as Start (/*)Disabled by default

Reset work Position on "Reset-NC", "Tie" pressed.

M20; M71; M03;

M21; M74; M05;

0.05

0.05

Deceleration time, if "Stop" pressed

Not defined

☒ ☒

☒ x ☒ y ☐ z ☐ a ☐ b ☐ c ☐ u ☐ v

Current position & Toolpath position should be equal in given axes

☐ x ☐ y ☐ z ☐ a ☐ b ☐ c ☐ u ☐ v

Cutting/Spindle ON & tool moves to toolpath position on Start for given axes

Direct Move

10

6000

☐

☐

This will check the axes and, if any position values for each selected axis are different after the move, will stop the program when the Run button is pressed, as seen in the image below:

The screenshot displays a CNC control interface. At the top, there are icons for various functions like file management, search, and tool selection. The main area shows a 3D model of a part with dimensions 647.000 and 561.270. A red box highlights a specific feature on the model. To the right, there are buttons for tool selection (T1, T2, T3, T4, T99) and coordinate system selection (G54, G55, G56, G57, G58, G59). The status bar at the bottom shows 'lib-shape-045.nc', 'MCC: Idle', 'C:', 'PLC: 0', 'I: 0', and 'Cmd: 0 / 0 (9)'. A red arrow points to the text 'Different Start/Stop Position'.

Option 2: Move back to stop position

The second option allows the operator to stop the machine, move the working tool to a desired position and then, after pressing the Run button, makes the machine automatically return to the original stopping position and resumes the cut from there. This is especially useful on large machines, where the operator may stop the machine in the middle of running the program to check the working

tool and then has to move it closer in order to inspect it.

In order to set this option up, the user needs to select the particular axes for which the machine will check its position values and, if any of them are different from their position values at the stop point, the machine will move the working tool back in place. In the example below, axes x, y and z have been selected to go back to the original stopping point, therefor allowing the user to lift the tool and move it closer towards themselves, then pressing Run for the tool to move back:

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PLC

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Cutting ON commands

M20; M71; M03;

Cutting OFF commands

M21; M74; M05;

Soft stop time,s

0.05

Limit stop time,s

0.05

Deceleration time, if "Stop" pressed

Not defined

After Stop Handler

On Start

Check Soft Limits for the full toolpath

Toolpath Position checking, axes

Goto Toolpath Position for axes

Lift Height

Move-to-Toolpath speed

Current position as Start (*)Disabled by default

Reset work Position on "Reset-NC", "Tie" pressed.

M20; M71; M03;

M21; M74; M05;

0.05

0.05

Not defined

☒

Check Soft Limits for the full toolpath

☒ x ☒ y ☒ z ☒ a ☒ b ☒ c ☒ u ☒ v

Current position & Toolpath position should be equal in given axes

☒ x ☒ y ☒ z ☒ a ☒ b ☒ c ☒ u ☒ v

Cutting/Spindle ON & tool moves to toolpath position on Start for given axes

Move On Lift Heig

15

6000

☒

☒

The Lift Height has been set to be 15 mm, allowing the machine to lift the working tool before moving as to prevent any collision with the working part. Note that this value will be different depending on the specific part and machine configuration.

These two options can be set to be different for different axes - for example, the x- and y-axes can be set to return back to the original stopping point, while the z-axis can be set to block movement if the working tool has been moved up or down, as in the image below. Note however, that only one option is available for each specific axis.

<http://cnc42.com/>

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(11:48:17) myCNC control software. Ver:1.88.3064- [lib-shape-045.nc]

SYS PLC Info Support Camera Cutchart Config **SAVE**

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	Current position & Toolpath position should be equal in given axes
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	Cutting/Spindle ON & tool moves to toolpath position on Start for given axes
Move On Lift Height	Move On Lift Height
Lift Height	15
Move-to-Toolpath speed	6000
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Reset work Position on "Reset-NC", "Tie" pressed.	<input checked="" type="checkbox"/>

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