

ESS Smoothstepper config

W9 Ethernet SmoothStepper (ESS) Configuration - v233

InfoGeneralMotorsSpindleLaserPins ConfigInput SignalsOutput SignalsHomingProbingBacklashH. C.

1) IP Address of the SmoothStepper

10.9.9.9

2) Buffer Size (seconds, max of 0.5)

0.1800

3) Plugin Frequency (Hz)

40

4) Velocity FIFO Buffer Ran Out of Data

☒ Show Hardware Velocity FIFO Ran Dry Msgs

☐ Show Software Velocity FIFO Ran Dry Msgs

5) Disable & EStop

☒ Charge Pump Runs In EStop

☒ Disable Expansion Port In Disable

6) Advanced Logging

☐ Enable Advanced Logging

1) The motion controller's IP address will be 10.9.9.9 unless it was modified with the configurator.

2) Buffer Size defaults to 0.18. A smaller buffer size is more responsive to Feed Hold commands, but is more sensitive to the Velocity FIFO running out of data if your computer bogs down. Increase the buffer size to prevent the Velocity FIFO from running out of data. If you have received 'Velocity FIFO Ran Out of Data' messages, you should restart Mach4 after modifying the buffer size.

3) The plugin frequency is typically left at 40 Hz. Higher frequencies will let Mach respond to events faster, but will also force your PC to work harder to keep up (which is harder for slower computers to do).

4) This lets you choose to watch the Velocity FIFO, to make sure it does not Run Out of Data. We recommend you leave this checked. Running out of data may cause lost steps, and may indicate your PC is doing other tasks instead of servicing Mach4.

If you get these messages regularly, take these actions so critical data can make it to the motion controller in time:

- * Increase your Buffer Size (above).
- * Disconnect your PC from the internet and shut off WiFi.
- * Shut down all other programs on your PC.
- * Decrease your plugin Frequency to 30Hz or 20 Hz (above).
- * Visit Warp3D.com and look at our FAQ Windows page to see how to optimize your PC further.
- * If your PC has less than 3 GB RAM (XP), 4GB RAM (Win7) or 8 GB RAM (Win10) you may want to increase your PC's RAM.

OKCancel

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Axis Motors Settings: Step/Dir, Quadrature or CW/CCW

	Mode
Motor 0	Step/Dir
Motor 1	Step/Dir
Motor 2	Step/Dir
Motor 3	Step/Dir
Motor 4	Step/Dir
Motor 5	Step/Dir

☐ Enable AntiClunk Mode for Servo Motors

1) In the 'Output Signals' Tab, assign Aliases or Pins for each Motor used.

2) In Mach Config -> Motors, set up the parameters for each Motor used.

3) In Mach Config -> Axis Mapping, Enable your axes and assign Motors as Masters and/or slaves.

OKCancel

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InfoGeneralMotorsSpindleLaserPins ConfigInput SignalsOutput SignalsHomingProbingBacklashH. C.

1) Spindle Settings

Spindle Type: PWM

Frequency, Hz: 400.00

☐ Duty Cycle Zero At Min RPM

RPM Input☒ Spindle Index☐ Spindle Encoder A

Pulses Per Rev 1.0000

RPM Prescaler 1

2) Spindle PID Settings (Only for PWM Drive Mode)

☐ Use PID☐ Use PID For Threading☐ Use PID RPM Floor 95.00 % of commanded RPM

Kp 0.0000100

Ki 0.0000000

Kd 0.0000000

☐ SS_PID_LOG.csv

1) Choose a Spindle Type of:

* Relay or none - The spindle/router is controlled by relays or there is none

* OB - Out of Band (Step/Dir, CW/CCW or Quadrature)

* PWM - Pulse Width Modulation Spindle Speed control

The 'Output Signals' tab has dedicated Spindle pins for your system's relays:

- * Spindle Dir - Retains the current spindle direction even when the spindle stops. The state changes only with a direction change (prevents direction glitching)
- * Spindle On - Active when the spindle is active
- * Spindle Fwd - Only active when the spindle is running forwards/CW
- * Spindle Rev - Only active when the spindle is running in reverse/CCW

2) Spindle PID will adjust the PWM output, to try and hold the commanded RPM.

- * Kp is the constant proportional gain that corrects for the error amount.
- * Ki corrects for the error amount summed over time.
- * Kd corrects based upon the rate of change of the error amount.
- * Recommended initial values are Kp = 0.0000100 Ki = 0.0000000 Kd = 0.0000000
- * Index Pulses per Rev is '1' unless a slotted disk or encoder channel is used.

3) In the 'Output Signals' Tab, assign Aliases or Pins as needed for:

- * Spindle Motor PWM (Required)
- * Spindle Motor Dir (Optional)
- * Spindle On (Optional)
- * Spindle Fwd (Optional)
- * Spindle Rev (Optional)

4) In Mach Config -> Spindle. In Range 0 (Row 0 or Pulley 0) assign:

- * Min RPM (Optional)
- * Max RPM (Required)

OKCancel

W9 Ethernet SmoothStepper (ESS) Configuration - v233

InfoGeneralMotorsSpindleLaserPins ConfigInput SignalsOutput SignalsHomingProbingBacklashH. C.

1) Set the pins Active High (Red Arrow Up) or Active Low (Green Arrow Down).

2) Give the Pins you are using an Alias (Name and Port#-Pin#). This makes it easy to identify what pins do in the Input and Output signal tabs.

3) Assign Noise Filtering, in us, for each input pin, if needed (see the 'Info' tab for more details).

4) A Feed Hold or Stop (Stop, EStop, Disabled or Limit) event can set the Output state to 'Force ON', 'Force OFF', or 'No Change'.

* 'No Change' means that the output is controlled by Mach4. With 'Force ON' and 'Force OFF' the ESS will force that desired state.

5) Pins are always enabled, only Signals can be enabled or disabled. Connect pins as needed on the Input and Output signal tabs.

Port 2 Pins 2-9 DirectionPort 3 Pins 2-9 Direction

☒ Inputs☐ Outputs☒ Inputs☐ Outputs

	DIR	Active High/Low	Alias or Name	Noise Filtering	Stop State	Feed Hold State
Port1-Pin1	Out	↑		-----	No Change	No Change
Port1-Pin2	Out	↑	Motor 0 (X) Step Port 1 Pin 2	-----	No Change	No Change
Port1-Pin3	Out	↓	Motor 0 (X) Dir Port 1 Pin 3	-----	No Change	No Change
Port1-Pin4	Out	↑	Motor 1 (Y) Step Port 1 Pin 4	-----	No Change	No Change
Port1-Pin5	Out	↑	Motor 1 (Y) Dir Port 1 Pin 5	-----	No Change	No Change
Port1-Pin6	Out	↑	Motor 2 (Z) Step Port 1 Pin 6	-----	No Change	No Change
Port1-Pin7	Out	↓	Motor 2 (Z) Dir Port 1 Pin 7	-----	No Change	No Change
Port1-Pin8	Out	↑	Motor 3 (Y Slave) Step Port 1 Pin 8	-----	No Change	No Change
Port1-Pin9	Out	↑	Motor 3 (Y Slave) Dir Port 1 Pin 9	-----	No Change	No Change
Port1-Pin10	In	↓	Emergency Stop Port 1 Pin 10	0.00	-----	-----
Port1-Pin11	In	↓	Z Limit Port 1 Pin 11	0.00	-----	-----
Port1-Pin12	In	↓	Y Limit Port 1 Pin 12	0.00	-----	-----
Port1-Pin13	In	↓	X Limit Port 1 Pin 13	0.00	-----	-----
Port1-Pin14	Out	↓	Rotary Dir Port 1 Pin 14	-----	No Change	No Change
Port1-Pin15	In	↑	Probe Port 1 Pin 15	0.00	-----	-----
Port1-Pin16	Out	↑	Rotary Step Port 1 Pin 16	-----	No Change	No Change
Port1-Pin17	Out	↑		-----	No Change	No Change

OKCancel

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2) Give the Pins you are using an Alias (Name and Port#-Pin#).

This makes it easy to identify what pins do in the Input and Output signal tabs.

3) Assign Noise Filtering, in us, for each input pin, if needed (see the 'Info' tab for more details).

4) A Feed Hold or Stop (Stop, EStop, Disabled or Limit) event can set the Output state to 'Force ON', 'Force OFF', or 'No Change'.

'No Change' means that the output is controlled by Mach4. With 'Force ON' and 'Force OFF' the ESS will force that desired state.

5) Pins are always enabled, only Signals can be enabled or disabled. Connect pins as needed on the Input and Output signal tabs.

Port 2 Pins 2-9 DirectionPort 3 Pins 2-9 Direction

☒ Inputs☐ Outputs☒ Inputs☐ Outputs

	DIR	Active High/Low	Alias or Name	Noise Filtering	Stop State	Feed Hold State
Port1-Pin17	Out			-----	No Change	No Change
Port2-Pin1	Out		Spindle PWM Pin Port 2 Pin 1	-----	No Change	No Change
Port2-Pin2	In			0.00	-----	-----
Port2-Pin3	In			0.00	-----	-----
Port2-Pin4	In			0.00	-----	-----
Port2-Pin5	In			0.00	-----	-----
Port2-Pin6	In			0.00	-----	-----
Port2-Pin7	In			0.00	-----	-----
Port2-Pin8	In			0.00	-----	-----
Port2-Pin9	In			0.00	-----	-----
Port2-Pin10	In			0.00	-----	-----
Port2-Pin11	In			0.00	-----	-----
Port2-Pin12	In			0.00	-----	-----
Port2-Pin13	In			0.00	-----	-----
Port2-Pin14	Out			-----	No Change	No Change
Port2-Pin15	In			0.00	-----	-----
Port2-Pin16	Out			-----	No Change	No Change

OK

Cancel

W9 Ethernet SmoothStepper (ESS) Configuration - v233

InfoGeneralMotorsSpindleLaserPins ConfigInput SignalsOutput SignalsHomingProbingBacklashH. C.

1) When you enable an input signal here, it will automatically be enabled and mapped into Mach.

2) An Input Pin (or Alias) may be assigned to multiple Input Signals.

	Enable	Mach Mapping	Mapped Pin
E-Stop		ESS	Emergency Stop Port 1 Pin 10
Motor 0 ++ Limit		ESS	X Limit Port 1 Pin 13
Motor 1 ++ Limit		ESS	Y Limit Port 1 Pin 12
Motor 2 ++ Limit		ESS	Z Limit Port 1 Pin 11
Motor 3 ++ Limit		ESS	Y Limit Port 1 Pin 12
Motor 4 ++ Limit			
Motor 5 ++ Limit			
Motor 0 -- Limit		ESS	X Limit Port 1 Pin 13
Motor 1 -- Limit		ESS	Y Limit Port 1 Pin 12
Motor 2 -- Limit		ESS	Z Limit Port 1 Pin 11
Motor 3 -- Limit		ESS	Y Limit Port 1 Pin 12
Motor 4 -- Limit			
Motor 5 -- Limit			
Motor 0 Home		ESS	X Limit Port 1 Pin 13
Motor 1 Home		ESS	Y Limit Port 1 Pin 12
Motor 2 Home		ESS	Z Limit Port 1 Pin 11
Motor 3 Home		ESS	Y Limit Port 1 Pin 12
Motor 4 Home			
Motor 5 Home			
Motor 0 Index		ESS-only	
Motor 1 Index		ESS-only	
Motor 2 Index		ESS-only	

OK

Cancel

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InfoGeneralMotorsSpindleLaserPins ConfigInput SignalsOutput SignalsHomingProbingBacklashH. C.

1) When you enable an input signal here, it will automatically be enabled and mapped into Mach.

2) An Input Pin (or Alias) may be assigned to multiple Input Signals.

	Enable	Mach Mapping	Mapped Pin
Path Selection (Head)			
Probe (G31 or G31.0)		ESS	Probe Port 1 Pin 15
Probe 1 (G31.1)			
Probe 2 (G31.2)			
Probe 3 (G31.3)			
Spindle At Speed			
Spindle At Zero			
Spindle Index			
THC On (Arc Okay)			
THC Up			
THC Down			
Tool Group Reset			
Tool Life Override			
Tool Retract			
Tool Skip			
User Interrupt			
Jog X+			
Jog X-			
Jog Y+			
Jog Y-			
Jog Z+			
Jog Z-			

OK

Cancel

W9 Ethernet SmoothStepper (ESS) Configuration - v233

InfoGeneralMotorsSpindleLaserPins ConfigInput SignalsOutput SignalsHomingProbingBacklashH. C.

1) An Output Pin (or Alias) may only be assigned to a single Output Signal.

2) An Output Signal may have up to 3 Output Pins (or Aliases) assigned to it:

* When enabled in this window, only 'Mapped Pin1' will be enabled and mapped into Mach.

* 'Mapped Pin2' and 'Mapped Pin3' will still receive the same Output Signal as 'Mapped Pin1', but will not be referenced in Mach.

	Enable	Mach Mapping	Pin1 Mapping	Pin2 Mapping	Pin3 Mapping
Motor 0 Step		ESS-only	Motor 0 (X) Step Port 1 Pin 2		
Motor 0 Dir		ESS-only	Motor 0 (X) Dir Port 1 Pin 3		
Motor 1 Step		ESS-only	Motor 1 (Y) Step Port 1 Pin 4		
Motor 1 Dir		ESS-only	Motor 1 (Y) Dir Port 1 Pin 5		
Motor 2 Step		ESS-only	Motor 2 (Z) Step Port 1 Pin 6		
Motor 2 Dir		ESS-only	Motor 2 (Z) Dir Port 1 Pin 7		
Motor 3 Step		ESS-only	Motor 3 (Y Slave) Step Port 1 Pin 8		
Motor 3 Dir		ESS-only	Motor 3 (Y Slave) Dir Port 1 Pin 9		
Motor 4 Step		ESS-only	Rotary Step Pin Port 1 Pin 16		
Motor 4 Dir		ESS-only	Rotary Dir Pin Port 1 Pin 14		
Motor 5 Step		ESS-only			
Motor 5 Dir		ESS-only			
Motor 0 Enable					
Motor 1 Enable					
Motor 2 Enable					
Motor 3 Enable					
Motor 4 Enable					
Motor 5 Enable					
Laser PWM		ESS-only			
Spindle Motor PWM		ESS-only	Spindle PWM Pin Port 2 Pin 1		
Spindle Motor Dir		ESS-only			

OK

Cancel

Mach4 Control config

Control Configuration

GeneralPluginsMotorsAxis MappingHoming/SoftLimitsInput SignalsOutput SignalsMPGToolsSpindleTool Path

Default Modes

Machine Setup Units

☐ Inch

☒ Metric

Control Mode

Mill

Units Mode

☐ Inch

☒ Metric

Traverse Mode

☒ Rapid

☐ Feed

Motion Mode

☒ Constant Velocity

☐ Exact Stop

Distance Mode

☒ Absolute

☐ Incremental

Arc Center Mode

☐ Absolute

☒ Incremental

Feed Mode

☐ Per Rev.

☒ Per Min.

Active Plane

☒ X-Y

☐ Y-Z

☐ X-Z

Cycle Retract

☒ Initial Z

☐ Rapid Plane

Spindle Mode

☒ Const. RPM

☐ Const. Surface

Initialization Codes

General

Delays (secs)

Coolant Delay:1.00000

Mist Delay:1.00000

Jog Increments (0 = disable)

Position 1

1

0.1

0.01

0.001

0.0001

1

0.1

0.01

0.001

Position 10

0.0001

SETVN Range

Start:500

End:549

G code file extensions

*.tap; *.nc; *.txt

G code file editor

gcedit.exe

Misc.

☒ Include Comments In Messages?

☐ Deref Axes In E-Stop?

☐ Cycle Stop Is Controlled Stop?

☒ Use Advanced GUI Controls?

☐ Feed Hold Stops Spindle?

☒ Exiting Feed Hold Restores Spindle?

☒ Check Probe Signal Before Probe?

☒ Use ZeroBrane Script Editor?

Profile Backups:20

Look Ahead Lines

20

Rotary Axes

☒ A Rollover

☐ B Rollover

☐ C Rollover

OK

Cancel

Apply

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InfoGeneralMotorsSpindleLaserPins ConfigInput SignalsOutput SignalsHomingProbingBacklashH. C.

1) Homing is enabled for a Motor 'N', when the 'Input Signals' tab has:
* 'Motor N Home' Enabled with a green check.
* 'Motor N Home' has an assigned 'Mapped Pin'.

2) If you have encoders with an index pulse, you may enable homing to a motor's index pin by:
* Place a green check in 'Home to Motor's Index Pin'.
* Make sure that the index signal is enabled for that Motor.

	Home Pin (Automatically Populated from 'Input Signals' tab)	Approach Velocity (Units/Min)	Backoff Velocity (Units/Min)	Home To Motor's Index Pin	Index Pin (Automatically Populated from 'Input Signals' tab)
Motor 0	X Limit Port 1 Pin 13	40.0	5.0	<input checked="" type="checkbox"/>	
Motor 1	Y Limit Port 1 Pin 12	40.0	5.0	<input checked="" type="checkbox"/>	
Motor 2	Z Limit Port 1 Pin 11	20.0	5.0	<input checked="" type="checkbox"/>	
Motor 3	Y Limit Port 1 Pin 12	40.0	5.0	<input checked="" type="checkbox"/>	
Motor 4		1.0	1.0	<input checked="" type="checkbox"/>	
Motor 5		1.0	1.0	<input checked="" type="checkbox"/>	

OK

Cancel

w9 Ethernet SmoothStepper (ESS) Configuration - v233

InfoGeneralMotorsSpindleLaserPins ConfigInput SignalsOutput SignalsHomingProbingBacklashH. C.

1) Backlash Compensation Options

☒ Use Backlash Compensation

☐ Show Backlash Comp Messages in Log

	Enabled	Backlash Amount (Read Only)	Mach Velocity (Units/Min)	Mach Acceleration (Units/Sec^2)	Use Custom Values?	Custom Velocity (Units/Min)	Custom Acceleration (Units/Sec^2)
Motor 0	<input checked="" type="checkbox"/>	0.0000	3200.0000	100.0000	<input checked="" type="checkbox"/>	10.0000	1.0000
Motor 1	<input checked="" type="checkbox"/>	0.0000	3200.0000	100.0000	<input checked="" type="checkbox"/>	10.0000	1.0000
Motor 2	<input checked="" type="checkbox"/>	0.0000	1600.0000	50.0000	<input checked="" type="checkbox"/>	10.0000	1.0000
Motor 3	<input checked="" type="checkbox"/>	0.0000	3200.0000	100.0000	<input checked="" type="checkbox"/>	10.0000	1.0000
Motor 4	<input checked="" type="checkbox"/>	0.0000	4994.0000	83.2300	<input checked="" type="checkbox"/>	10.0000	1.0000
Motor 5	<input checked="" type="checkbox"/>	0.0000	100.0000	2.0000	<input checked="" type="checkbox"/>	10.0000	1.0000

1) When 'Use Backlash Compensation' is enabled, the SmoothStepper will perform Backlash Compensation (B.C.).
Fixing backlash through software is never as effective as removing backlash with better hardware.

* The first column, 'Enabled', should be CHECKED if it is a normal motion axis, or if you want that motor's movements to affect B.C.

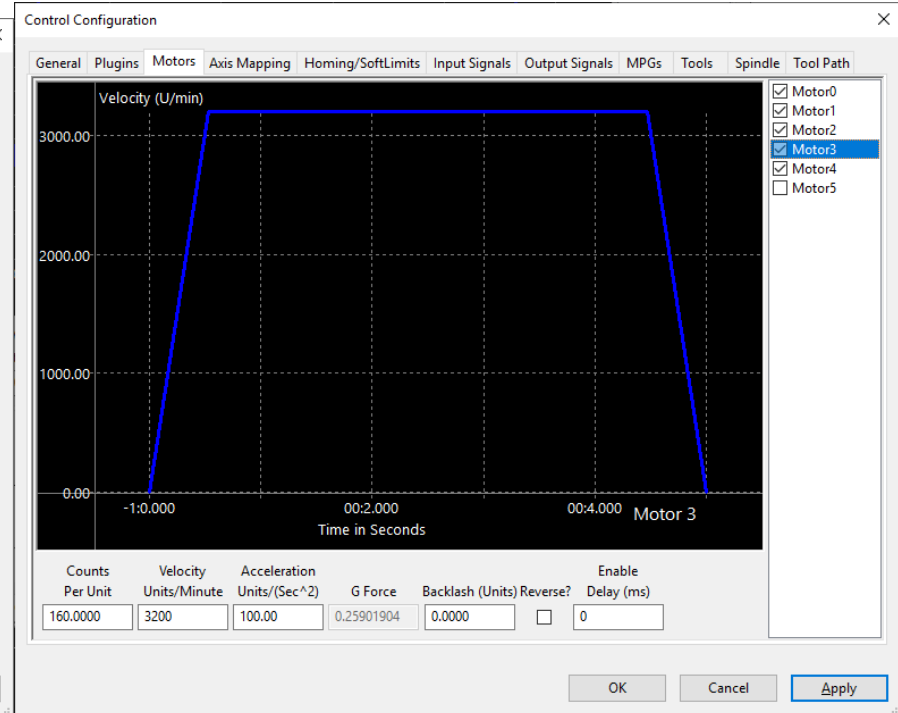
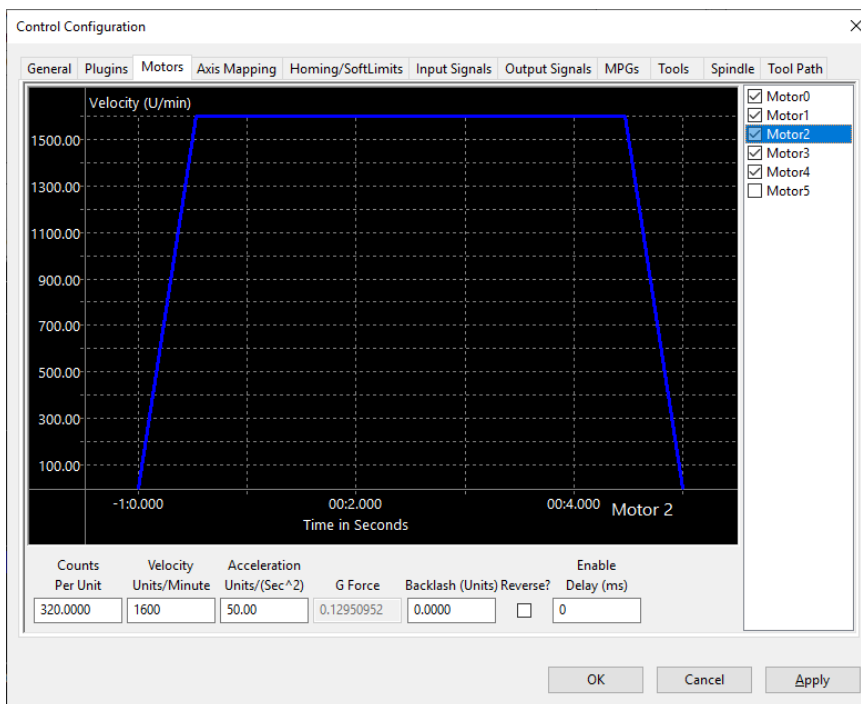
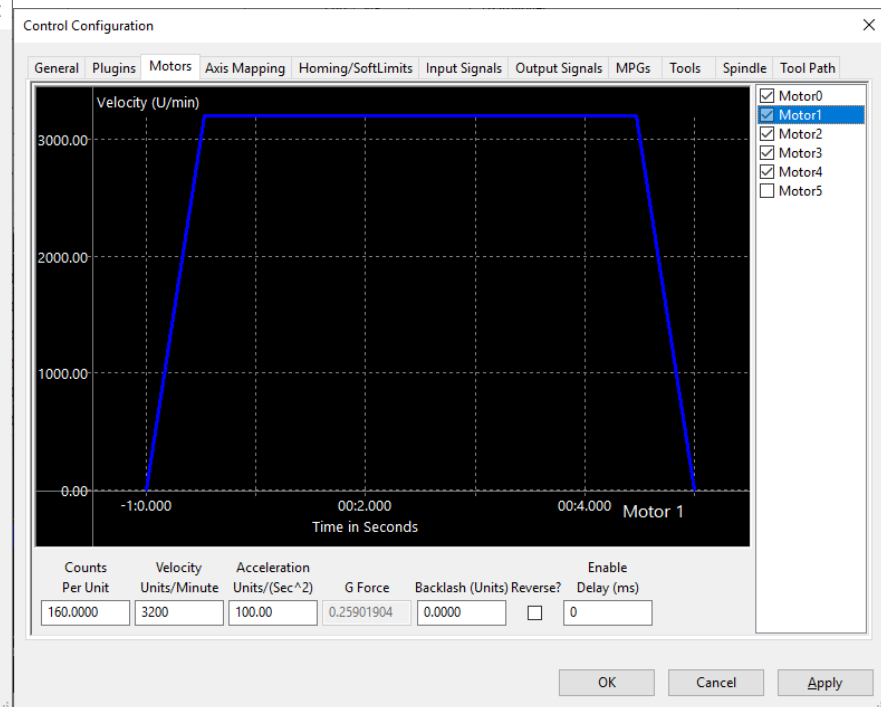
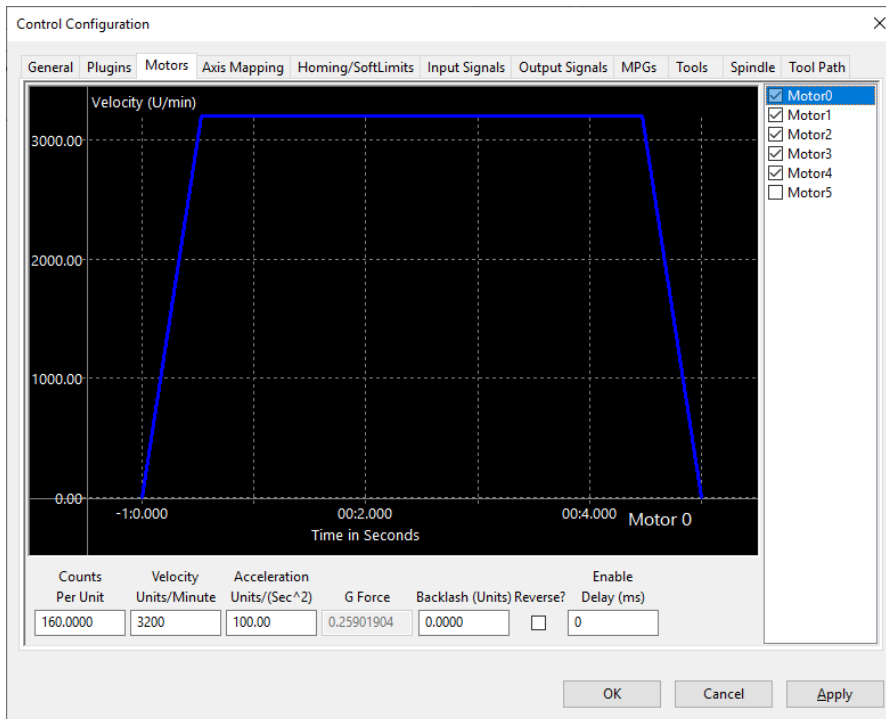
* The next 3 columns ('Backlash Amount', 'Mach Velocity' and 'Mach Acceleration') are for reference, and may only be edited in:
Menu -> Configure -> Mach... -> Motors

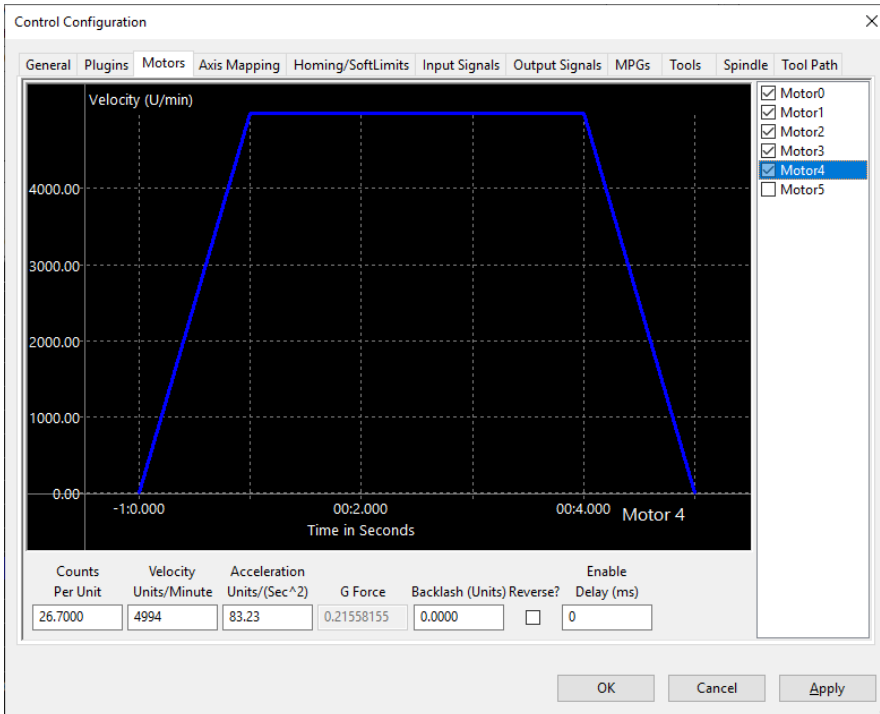
* You need to set a Backlash Amount for both the Master and Slave Motor(s) in a slaved axis.
The distances should be the same or only slightly different and always positive.

* By placing a green check mark in 'Use Custom?', you may specify your own Velocity and Acceleration values.

OK

Cancel





Control Configuration

General Plugins Motors Axis Mapping Homing/SoftLimits Input Signals Output Signals MPGs Tools Spindle Tool Path

	Enabled	Master	Slave 1	Slave 2	Slave 3	Slave 4	Slave 5
X (0)		Motor0					
Y (1)		Motor1	Motor3				
Z (2)		Motor2					
A (3)		Motor4					
B (4)							
C (5)							
OB1 (6)							
OB2 (7)							
OB3 (8)							
OB4 (9)							
OB5 (10)							
OB6 (11)							

OK Cancel Apply

Control Configuration

General Plugins Motors Axis Mapping Homing/SoftLimits Input Signals Output Signals MPGs Tools Spindle Tool Path

	Home Dir	Home Order	Home Offset	Home Speed%	Home In Place	Soft Enable	Soft Min	Soft Max
X (0)	Neg	3	0.0000	30.00			4.0000	1150.0000
Y (1)	Neg	2	0.0000	30.00			4.0000	1250.0000
Z (2)	Pos	1	0.0000	30.00			-137.0000	60.0000
A (3)	Neg	4	0.0000	30.00			0.0000	358.8390
B (4)	Pos	0	0.0000	30.00			0.0000	0.0000
C (5)	Pos	0	0.0000	20.00			0.0000	0.0000
OB1 (6)	Pos	0	0.0000	20.00			0.0000	0.0000
OB2 (7)	Pos	0	0.0000	20.00			0.0000	0.0000
OB3 (8)	Pos	0	0.0000	20.00			0.0000	0.0000
OB4 (9)	Pos	0	0.0000	20.00			0.0000	0.0000
OB5 (10)	Pos	0	0.0000	20.00			0.0000	0.0000
OB6 (11)	Pos	0	0.0000	20.00			0.0000	0.0000

OK Cancel Apply

Control Configuration

General Plugins Motors Axis Mapping Homing/SoftLimits Input Signals Output Signals MPGs Tools Spindle Tool Path

	Mapping Enabled	Device	Input Name	Active Low	User Description
Motor 30 Home					
Motor 31 Home					
Motor 0 ++		ESS	X Limit Port 1 Pin 13		
Motor 1 ++		ESS	Y Limit Port 1 Pin 12		
Motor 2 ++		ESS	Z Limit Port 1 Pin 11		
Motor 3 ++		ESS	Y Limit Port 1 Pin 12		
Motor 4 ++					
Motor 5 ++					
Motor 6 ++					
Motor 7 ++					
Motor 8 ++					
Motor 9 ++					
Motor 10 ++					
Motor 11 ++					
Motor 12 ++					
Motor 13 ++					
Motor 14 ++					
Motor 15 ++					

OK Cancel Apply

Control Configuration

GeneralPluginsMotorsAxis MappingHoming/SoftLimitsInput SignalsOutput SignalsMPGsToolsSpindleTool Path

	Mapping Enabled	Device	Input Name	Active Low	User Description
Motor 30 ++					
Motor 31 ++					
Motor 0 --		ESS	X Limit Port 1 Pin 13		
Motor 1 --		ESS	Y Limit Port 1 Pin 12		
Motor 2 --		ESS	Z Limit Port 1 Pin 11		
Motor 3 --		ESS	Y Limit Port 1 Pin 12		
Motor 4 --					
Motor 5 --					
Motor 6 --					
Motor 7 --					
Motor 8 --					
Motor 9 --					
Motor 10 --					
Motor 11 --					
Motor 12 --					
Motor 13 --					
Motor 14 --					
Motor 15 --					

OKCancelApply

Control Configuration

GeneralPluginsMotorsAxis MappingHoming/SoftLimitsInput SignalsOutput SignalsMPGsToolsSpindleTool Path

	Mapping Enabled	Device	Input Name	Active Low	User Description
Input #59					
Input #60					
Input #61					
Input #62					
Input #63					
Motor 0 Home		ESS	X Limit Port 1 Pin 13		
Motor 1 Home		ESS	Y Limit Port 1 Pin 12		
Motor 2 Home		ESS	Z Limit Port 1 Pin 11		
Motor 3 Home		ESS	Y Limit Port 1 Pin 12		
Motor 4 Home					
Motor 5 Home					
Motor 6 Home					
Motor 7 Home					
Motor 8 Home					
Motor 9 Home					
Motor 10 Home					
Motor 11 Home					
Motor 12 Home					
Motor 13 Home					

OKCancelApply

Control Configuration

GeneralPluginsMotorsAxis MappingHoming/SoftLimitsInput SignalsOutput SignalsMPGsToolsSpindleTool Path

	Mapping Enabled	Device	Input Name	Active Low	User Description
Motor 29 --					
Motor 30 --					
Motor 31 --					
Probe		ESS	Probe Port 1 Pin 15		
Index					
Limit Override					
E-Stop		ESS	Emergency Stop Port 1 Pin 10		
THC On					
THC Up					
THC Down					
Timing					
Jog X+					
Jog X-					
Jog Y+					
Jog Y-					
Jog Z+					
Jog Z-					
Jog A+					

OKCancelApply

Control Configuration

GeneralPluginsMotorsAxis MappingHoming/SoftLimitsInput SignalsOutput SignalsMPGsToolsSpindleTool Path

	Mapping Enabled	Device	Output Name	Active Low	User Description
Y Homed					
Z Homed					
A Homed					
B Homed					
C Homed					
Dwell					
olpath Mouse Do					
Limit Override					
Charge Pump #1					
Charge Pump #2					
Current Hi/Low					
Spindle On					Spindle
Spindle Fwd					
Spindle Rev					
Coolant On					
Mist On					
Digitize Trigger					
Alarm					

OKCancelApply

Control Configuration

General

Plugins

Motors

Axis Mapping

Homing/SoftLimits

Input Signals

Output Signals

MPGs

Tools

Spindle

Tool Path

	MinRPM	MaxRPM	Accel Time	Decel Time	FeedBack Ratio	Reversed
0	0.00	24000.00	3.00	3.00	1.00000	✖
1	0.00	0.00	0.00	0.00	1.00000	✖
2	0.00	0.00	0.00	0.00	1.00000	✖
3	0.00	0.00	0.00	0.00	1.00000	✖
4	0.00	0.00	0.00	0.00	1.00000	✖
5	0.00	0.00	0.00	0.00	1.00000	✖
6	0.00	0.00	0.00	0.00	1.00000	✖
7	0.00	0.00	0.00	0.00	1.00000	✖
8	0.00	0.00	0.00	0.00	1.00000	✖
9	0.00	0.00	0.00	0.00	1.00000	✖
10	0.00	0.00	0.00	0.00	1.00000	✖
11	0.00	0.00	0.00	0.00	1.00000	✖
12	0.00	0.00	0.00	0.00	1.00000	✖
13	0.00	0.00	0.00	0.00	1.00000	✖
14	0.00	0.00	0.00	0.00	1.00000	✖
15	0.00	0.00	0.00	0.00	1.00000	✖

Max Spindle Motor RPM: 24000.00
☐ Wait on spindle to stabilize to 90 percent.

Spindle Override Delay: 25 (ms)

Step/Dir Spindle Axis: None (Axis must be enabled and mapped.)
☐ Enable Step/Dir Spindle rigid tapping.

OK

Cancel

Apply

Control Configuration

General

Plugins

Motors

Axis Mapping

Homing/SoftLimits

Input Signals

Output Signals

MPGs

Tools

Spindle

Tool Path

Tool path colors

Tool Path Background Top Color

Tool Path Background Bottom Color

Rapid Color

Linear Color

Arc Color

Highlite and Past Move Color

Axis Color

Machine Limits

Tool path options

☐ Show Tool Path Limits?
☐ Disable VBO Tool Path?
☐ Use Lazy Tool Path Update?

Path Line Width 1
Axis Line Width 1

Display A Axis Rotation: Rotate Around X

OK

Cancel

Apply