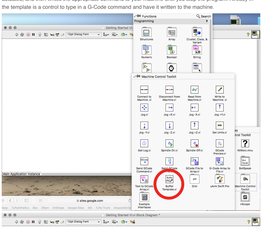
Machine Control Toolkit for LabVIEW

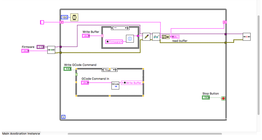
Getting Started

Get started with the Machine Control Toolkit by building a simple machine interface (step-by-step instructions below).

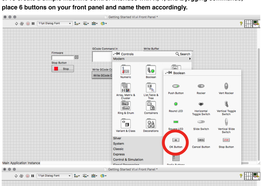
1. Open up a blank LabVIEW VI

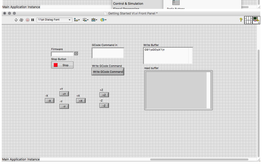
2. Place the buffer template from the Machine Control Toolkit onto your block diagram.
The buffer template connects to your specified machine, and waits until user controls on the front panel are actuated, and then writes the appropriate command to your machine until you stop the program. Already in the template is a control to type in a G-Code command and have it written to the machine.



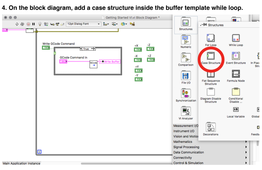


3. To create a simple machine control interface with X, Y, and Z jogging commands, place 6 buttons on your front panel and name them accordingly.

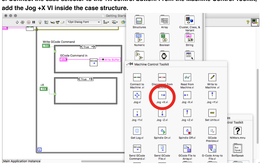




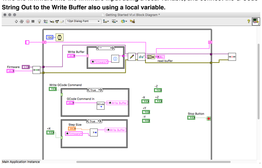
4. On the block diagram, add a case structure inside the buffer template while loop.



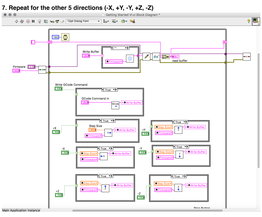
5. Connect the case selector to the +X control button. From the Machine Control Toolkit, add the Jog +X VI inside the case structure.



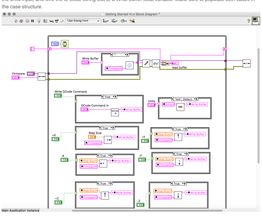
6. Create a control for the jogging step size so you can adjust it from the front panel. Wire the firmware into the firmware input using a local variable, and connect the G-Code String Out to the Write Buffer also using a local variable.



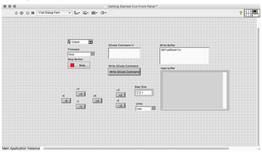
7. Repeat for the other 5 directions (-X, +Y, -Y, +Z, -Z)



8. Add control over the machine's units.
First, add another case structure, and create a control on the Units input. Wire that control to the case selector, and change the cases to "in" and "mm" instead of "true" and "false". Then create a local variable for the units and wire it to the units input, and wire the G-Code String Out to a Write Buffer local variable. Make sure to populate both cases in the case structure.



9. Go to your front panel, and select the port your machine is plugged into and your firmware, and run the VI.



10. You will now be able to jog your machine in all directions, and control the step size and units!