Inflation Apparatus Updates

Running the Code

1. To open the code, first open the LabVIEW project “InflationApparatus.lvproj” located in the top level of the “Inflation Apparatus” folder. Always open the project first to ensure the correct subVI’s are referenced in the main VI.
2. In the project, open the top level VI “InflationApparatus.vi”
3. Pressing the run arrow will no longer start a test. To start a test, press the run button while the VI is running. During a test, the stop button can be pressed to stop the test. Pressing the stop button will not abort the program
4. To stop the program, the abort button can be pressed or the Exit Program button in the top right can be pressed
5. While running, charts can be cleared by pressing the clear charts button
6. The test variables can be changed in the red cluster on the front panel
7. Force/camera calibration tabs are currently in place, however, they are not in a runnable state.

Block Diagram

1. The code uses a parallel processing structure to deal with user events (ie. button presses). The structure is a producer-consumer based approach where the top loop handles user events and queues states for the bottom loop to run. Ex) When the run button is pressed, the top loop queues the “Main Start” enum. When this is queued the “dequeue element” VI in the bottom loop reads the queued enum as “Main Start” and runs that state. More on producer-consumer loops (also called Queued Message Handlers) here: <https://www.ni.com/en-us/support/documentation/supplemental/21/using-a-queued-message-handler-in-labview.html>
2. The Main Start case in the producer loop contains all relevant code for force control/camera readings. The camera and force loops are separated for now but could be combined if that is desired