**Serial Command Decoder**

The basics of the serial commands are three digits. First digit determines the function used and the second digit and third digits are entered as variables into the function.

In general:

**xyz command = fx(y, z)**

Comprehensive command list:

|  |  |  |  |
| --- | --- | --- | --- |
| First digit | function | Second digit usage (y) | Time on (z) |
| 1 | Fill/Drain Outer Chamber | 0 = Drain  1= Fill | Z \* 5 seconds on |
| 2 | Bleach Solution Cycle | Y \* 10’s of min. of bleach time | Z \* min. of bleach time |
| 3 | Wait | Y \* 10’s of min. of wait time | Z \* min. of wait time |
| 4 | Wash Cycle | Y = wash time in seconds | Z = steps per milli-second speed |
|  |  |  |  |
|  |  |  |  |

**Descriptions**

1. Controls bioscience tools pinch valve. It can select 1-8 numbered valves and open and close them (pinch/un-pinch).
2. Controls inner chamber peristaltic pump’s stepper motor. Can modulate it being on/off and its speed in steps per milli-second.
3. Fills or drains PBS from outer chamber
4. Bleach solution cycle. This uses the stepper peristaltic pump to pump in fresh bleach solution over the slide and wait YZ minutes. For example YZ = 23 = let bleach solution sit for 23 minutes.
5. Wait. It does nothing for YZ minutes of time. Example: YZ = 12 = 12 minutes of doing nothing.
6. Wash cycle. Flows PBS across slide by pumping with one pump and draining with another. You how long cycle lasts and its flow rate.