**Serial Command Decoder**

The basics of the serial commands are two digits. First digit determines the function used and the second digit is entered as a variable into the function.

In general:

**xy command = fx(y)**

Comprehensive command list:

|  |  |  |
| --- | --- | --- |
| First digit | function | Second digit usage (Y) |
| 1 | Syringe select | What syringe number should be underneath pushrod |
| 2 | Prime syringe | 0 = raise push rod, 1 = syringe primed |
| 3 | Dispense liquid from syringe | Y \* 100uL of dispensed vol. |
| 4 | Water fall wash | Y \* 1 sec of wash time |
| 5 | Bleach solution cycle | Y \* 10’s of min. of bleach time |
| 6 | Lid open close state | 0 = open, 1 = closed |
| 7 | Fills or drains chamber | 0 = drains, 1 = fills |

Descriptions

1. When syringe is selected, spins cylinder around to register hall effect location and moves a known displacement from that spot to syringe number.
2. Moves pushrod down until hall effect triggers, or if in primed state, moves push rod up to clear itself to rotate to another syringe.
3. Moves pushrod down to push syringe plunger down. Already calibrated and converted to uLs.
4. Fills up pool and then turns on drain pump and PBS pump at the same time to create constant flow across slide. At the end, drains out fluid.
5. Drains chamber and then adds bleach solution to fill it up. Waits Y amount of time and drains chamber.
6. Open and closes lid.
7. Fills or drains chamber.

**Examples**

1. 61 = close lid
2. 14 = place 4th syringe underneath pushrod (counts from zero)
3. 47 = waterfall wash for 7 seconds
4. 35 = dispense 500uL from syringe