Mop ‘n Bot – Special System

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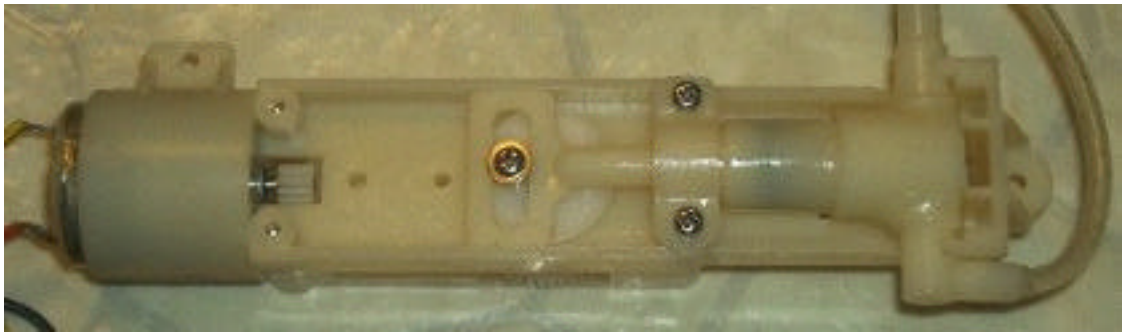

Figure 1: 3 – 6 VDC Piston Pump

3 – 6 VDC Piston Pump

- Obtained: http://www.herbach.com
- Price: $3.75

Functionality:

The pump is driven by a small DC motor. The motor turns gears which draw the piston down, sucking the liquid through the first tube and into the chamber. When the piston is pushed back up it forces the liquid out of the chamber and out through the second tube.

Applications:

The piston pump is well suited to two types of applications. The first is that of a pulsating liquid output. By its nature the piston pump pulsates the flow of solution through the tube. This was how I used the pump, to periodically deposit a small amount of liquid onto the surface to be cleaned.

The second application is that of shooting small amounts of liquid great distances. The piston pump will shoot a very small stream of liquid 15 – 20 feet.

Hardware:

Controlling the piston pump is trivial. Since it is only a low voltage DC motor, and it is only required to spin in one direction, a simple NMOS circuit will control the output of the pump. Figure 2 shows the circuit.

Software:

Controlling the pump from a microcontroller is as simple as writing to an output port. In Figure 2, if 'Pump Control' is +5V, the pump will be on, if the 'Pump Control' is 0V, the pump will be off.

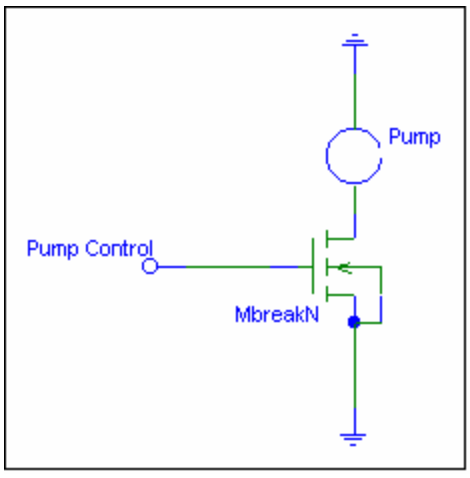

Figure 2: Control circuit