



<http://www.hauntedillinois.com/pneumatic.php>

## Pneumatic Control of Props

A lot of effects can be animated with the use of a pneumatic cylinder. You will need the following items:

- Screen door closer (pneumatic cylinder)
- 1/8 - 27 Pipe tap and tap handle
- 5/16 inch drill bit and power drill
- 1/8 x 1.5 inch brass nipple
- Teflon tape
- Pliers, crescent wrench
- Washing Machine Filler Valve
- Pressurized air supply
- Assorted Pipe Adapters and Hose

In the end of the screen door closer opposite the plunger rod is an adjustment screw. This screw is used to adjust how fast the plunger moves. You will want to remove this screw. The adjustment screw hole will be where you put the pressurized air. Drill out the adjustment screw hole with the 5/16 inch drill. Then tap the hole you just drilled with the 1/8 - 27 pipe tap. A regular 1/8 inch tap will not work; it must be a pipe tap. After applying two to three wraps of Teflon tape around the threads of the 1/8 inch by 1.5 inch brass nipple, screw it into the new threads you just made in the door closer.

Now you will need to prepare the washing machine filler valve. Most washing machine filling valves are standard and can be purchased at an appliance repair store. I got mine for about \$20 at a local repair shop. There is a hot and cold water inlet, as well as a single water outlet. The pressurized air will be connected to either the hot or cold water connector. You will want to plug up the other inlet connector, since they are both connected and air escapes if you don't. To the outlet connector you need to connect the pneumatic cylinder. In between the outlet connector and the pneumatic cylinder, you need to put a brass drain cock. This will allow the prop to return to its original position after it is deactivated.

You can, at your own discretion, connect the pneumatic cylinder and the washer fill valve with assorted pipe fittings (see pictures below for ideas). To activate the

pneumatic cylinder, connect 120VAC to the washing machine filler valve solenoid as shown in the pictures below.

After connecting the washing machine filler valve and pneumatic cylinder, you can connect the cylinder to whatever you want to animate. The average cylinder only has a 6.25 inch thrust. Although there is a limited cylinder movement, pivot points and rotational leverage can be used to move objects at much greater distances.



1/8 - 27 Pipe Tap



Pneumatic Cylinder



End of Pneumatic Cylinder



Close-up of 1/8 - 27 Threads



Cylinder with Nipple Attached



Washer Fill Valve Wide View



Connectors



Washer Fill Valve



Washer Fill Valve