

## HauntMaven.com - Wolfstone's Haunted Halloween Site



[http://wolfstone.halloweenhost.com/PropsMisc/pmppop\\_PumpkinPopup.html](http://wolfstone.halloweenhost.com/PropsMisc/pmppop_PumpkinPopup.html)

### Pumpkin Popup



Grown men scream in fear when the Pumpkin Popper attacks!

The "Trash Can Trauma" is a classic scare: an innocent-looking trash can suddenly slams open, a monster sticks his head up, and arm reaches out.

For 2001, David cooked up a simplified version of this scare. It's almost as scary as the original, and *much* easier to build.

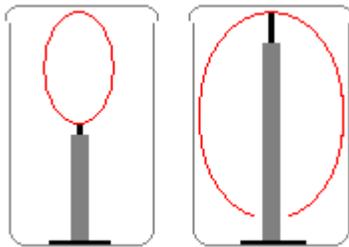


## Description

The air cylinder is attached to the bottom inside of the trash can, pointing straight up. We used an improvised pneumatic cylinder from a bicycle pump for this one.

The clever part of this gizmo is the way that the design *works around* the height of the pneumatic cylinder.

- It's a fact of life that a normal pneumatic cylinder will less than double when activated. If the cylinder is 2' long at rest, when activated it will be a tad less than 4' long. [There are exceptions, multistage cylinders that telescope like radio antennas. We can't afford those.]
- It works the other way, too. If you want something to jump up 2', you start with a 2' cylinder that extends to a total of 4'.
- We wanted to use a long cylinder to get the popup to jump far out of the can, hence the use of the bicycle pump which is much longer than a screen door closer. But where do you put the extra 2' length of the cylinder before it is activated?
- We put it *inside* the body of the pumpkin.



The pumpkin on the left has the piston mounted to the bottom. The pumpkin can be no larger than half the height of the trash can because of the height of the pneumatic cylinder.

The pumpkin on the right puts the pneumatic cylinder inside the pumpkin, This lets us use a larger pumpkin.

For a popup, we used a hollow plastic pumpkin almost as tall as the trash can is. It has a hole in the bottom. The pneumatic cylinder extends up through the hole in the pumpkin and into the body. The cylinder's piston is attached to the inside top of the pumpkin. The lid of the trash can is attached to the top of the pumpkin and the top of the piston.

When the cylinder is activated, the piston extends, lifting pumpkin into view, and pushing the lid up like a hat on top of the pumpkin.

The pumpkin also uses an amplified scream box and a strobe, so when it triggers, you get a strobe light on the pumpkin and a startling sound.

## Complications

For starters, the pumpkin that pops up is not the only surprise. Included in the package are:

- an incandescent lamp inside the pumpkin that shines light out of facial features of the Jack O'Lantern
- a strobe light inside the can that flashes up on the outside of the pumpkin
- a loud canned scream

These features are optional. We like them, but they complicate the project, and can be omitted.

There is an additional complication: David wanted the pumpkin to pop up in darkness. Only when the pumpkin was fully deployed would the action start: light inside the pumpkin, strobe light shining up on the pumpkin, and canned scream. He did this by using a "limit switch" that applies power to the accessories only when the pneumatic cylinder is fully extended. This, too, is optional. It would work just fine if everything were set off at once.

There is one final complication that is probably not optional. If a standard tubular pneumatic cylinder is used, or even one of the standard improvisations, there is nothing to keep the piston from rotating. This could result in the pumpkin twisting around a little after each actuation, and eventually facing away from the intended victims. David solved this problem by replacing the metal rod that normally connects the pump handle to the piston with square bar stock and cutting a square hole in the top of the pump. This makes rotation impossible, and the pumpkin faces the kids all night.

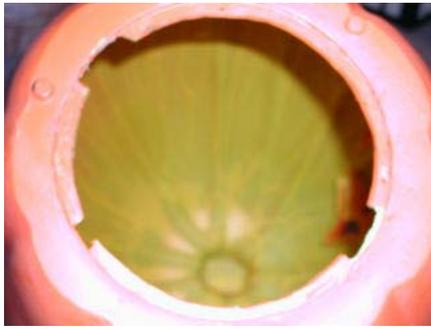
## Initial Photos



We started with a hollow store-bought pumpkin about two feet tall.



The pumpkin has a light inside, provided by a C7 lamp in a simple pinch-light fixture. Remove it and use for some other project.



The pumpkin shell was made in two pieces. The bottom is a plastic disk glued into place. Pry it out, to leave a nice hollow shell.



Just a simple galvanized trash can.



Here's the pumpkin shell just sitting in the bottom of the trash can.



As purchased from the store, the handle for the trash can is merely crimped on the lid. To the left of center is a pop-rivet that helped hold things together during construction. To right of center is the threaded end of the bicycle tire pump, with a nut on the end.

## More Photos



This jumble consists of *most* of the support equipment for the popup.

You can see: Haunt Air Manager (HAM), trigger relay, scream box, X-10 module.

Not shown: amplified speakers, strobe.

In normal operation, all of this stuff is crammed into the bottom of the can.



This small hole in the bottom of the can is where the working bits inside the can communicate with the outside world.

When ready for use, only two things come out: an air hose to run the pneumatic cylinder, and a 110 VAC cord for power and control.

All of the support equipment is inside the bottom of the can.



This is a unique view, looking up from the inside of the trash can, along the pneumatic piston, to the top of pumpkin. The arrow shapes in the upper left are the eye openings molded into the pumpkin.



This interior view of the pumpkin shows another detail: a small incandescent lamp inside the pumpkin.

The reflector is made from a tin can.



Looking down into the can, we don't see much ... because the support equipment hasn't been stuffed in yet.

The base of the bicycle pump is securely fastened down to a piece of wood, which is itself screwed down to the bottom of the can.



David wanted the pumpkin to pop up in darkness. Only when the pumpkin was fully deployed would the action start: light inside the pumpkin, strobe light shining up on the pumpkin, and canned scream.

The thing to right of center is a microswitch, with the actuator poking down into the top of the bicycle pump top. When the pump piston is fully extended, it actuates the microswitch, powering up the strobe light, incandescent light, and triggering the canned scream.

## Result



This picture of the pumpkin in operation was taken with a flash, so illumination details are lost.

You can see the light coming from inside.



This photo was taken by the pumpkin's "natural" illumination.

Note the nice image of the mouth cast on the ground in front of the trash can.

Obtained from  
Omarshauntedtrail.com