



<http://www.scaryguys.com/slinger.htm>

The Body Slinger

The body slinger is a nifty animation that looks like a benign corpse in a coffin until its triggered, then leaps almost straight up over your head! Add a loud scream, and your guests will need to change their underwear....



My beautiful assistant helps me with all my haunting (she's the one on the right). The coffin design is a toe-pincher made of stained 1" x 12" shelving with a 3/8" plywood back. No plans, just a circular saw, pencil, and straightedge with a healthy sprinkling of colorful language.



This is before the prop was triggered by my assistant (and excellent haunter) patiently waiting behind the coffin. The dogs were calmly eating their dinner. Notice the absence of the dogs in the rest of the pictures...



This picture is hard to see, but (if you can tell) the body has jumped to over seven feet! In this design, I needed the body to jump almost straight up, not out. My guests will be walking right around the bottom of the coffin, so jumping out wasn't a real good idea... Anyway, this scare is intended for a narrow hallway with various boxes and coffins, with a very sturdy wall opposite!



Its easier to tell in the side view what's going on. The body is a bit thin, don't you think? So far, no one has noticed heh...heh...heh... Its nothing more than a suit wrapped around a PVC frame with a wig head and mask. This keeps the weight down (it only weighs a couple of pounds), and makes the jump faster. From full rest to full extension is about one second! This guy is pretty fast for a corpse!

Oh yeah, the UPS guy won't step foot in the garage after last week when my assistant triggered the corpse right when he sat down a box at the foot of the coffin. He never saw it coming - we never saw him leaving....



Here's a (somewhat) closer view of the mechanism. I'm using a heavy-duty screen door closer as the air cylinder.

NOTE:

I built the slinger before I got comfortable with "real" pneumatics. I do not recommend using door closers and washing machine valves, its a 'hack' at best. Using door closers and washing machine valves won't really save you any money or time, and they're much less reliable (or safe, for that matter) than professional air cylinders and solenoids. It's worth using the real thing instead of 'hacking' door closers, both for safety's sake and for reliability.

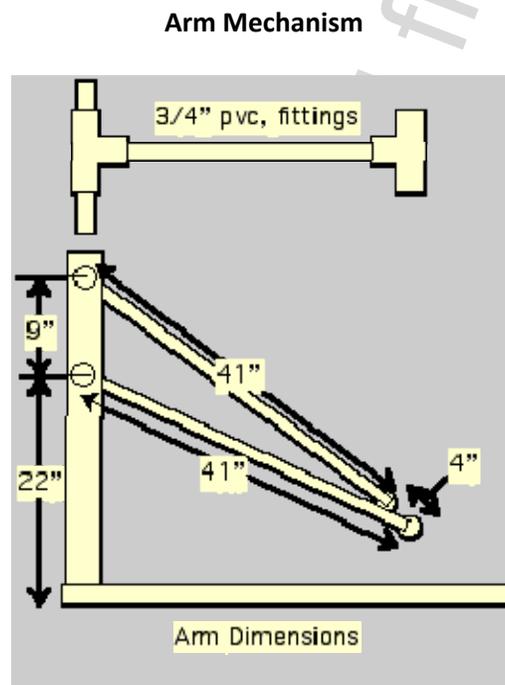
All the moving parts (with the exception of the air cylinder) are made of PVC plumbing pipe. I used about 15 feet of 3/4" pipe, a handful of tees, caps, and couplings. The body is made of 1/2" PVC and various fittings (see below).

You can see the 'adjustments' I made on the lengths of the PVC pipe to get the jump the way I wanted it. Changing the length of the pipe makes a huge difference in the height of the jump, and the length of the leap out towards guests.

The vertical supports are 1" x 4" braced with 2" x 4" blocks. The horizontal supports are 2" x 4".

Basic Dimensions

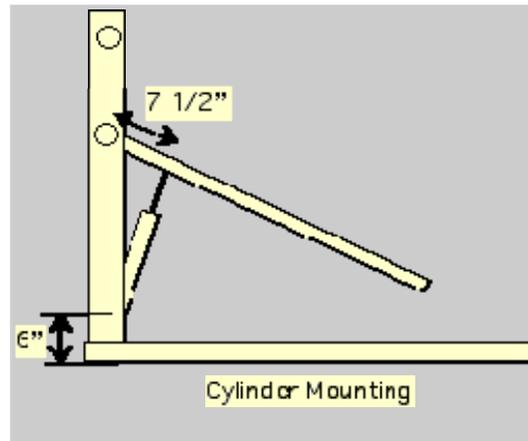
Here's the basic dimensions for the slinger mechanism, body and coffin. Don't be afraid to experiment! This only worked for me after a bit of tinkering. Pvc is cheap, and the small parts can be given to the kids to build block (tube?) houses with!



(thanks to Beam2000 for the gentle prod to fix the dimensions in this image!)

The arm mechanism uses the four-bar design that is used in lots of animated props. The **basic mechanism** can be used to move props in many ways. The arms are 3/4" pvc. The supports are 1/4 verticals with 2x4 horizontal supports. The holes in the 1x4s are 1" diameter. 2/4 wood blocks were placed between the 1x4s to help brace the 1/4" verticals.

Cylinder Mount

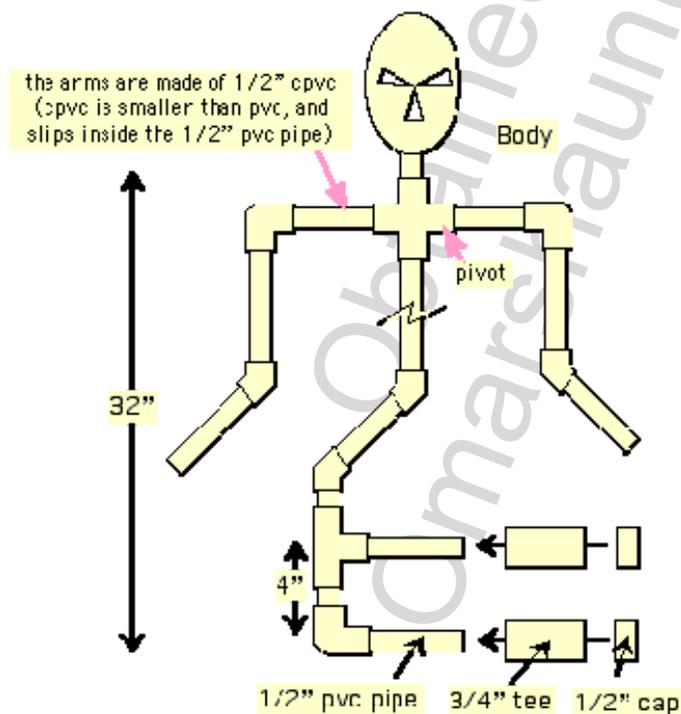


Originally I used a heavy duty door closer as an air cylinder. The measurements shown are for this cylinder. If you use another cylinder (and I do recommend using a "real" air cylinder), the measurements will change. Don't be afraid to experiment!

Note:

A 1" bore, 7"-8" throw double acting air cylinder is recommended.

The Body

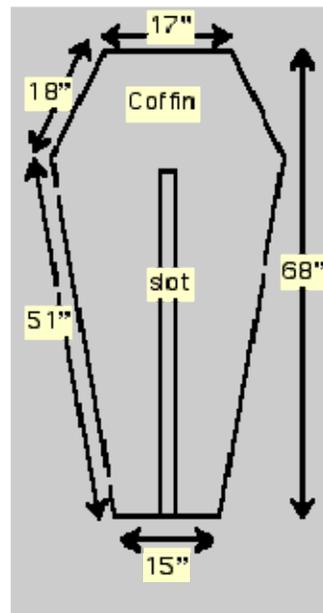


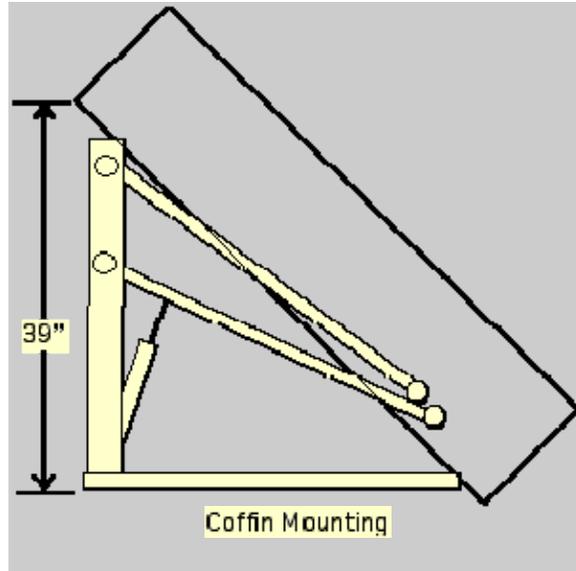
Here's some basic info on the body frame I used. The torso portion is about 32" high, not counting the neck and head. The 4" pivot measurement is center-to-center. The 3/4" tees slide over the 1/2" pvc to make the front pivots. 1/2" caps are screwed to the 1/2" pipe to hold the body frame on the slinging arms. You can glue it... but... you won't be able to take it apart again! Drill a small pilot hole through the cap and pipe first. I used 1" drywall screws to hold the caps on.

The arms are made of 1/2" pvc that has a smaller diameter than pvc and can slide easily into 1/2" pvc fittings.

The Coffin

The coffin is really simple to make. You don't have to build the 'toe pincher' version, a simple rectangular box will work just as well. For mine, I used 1"x12" pine shelving for the sides and 3/8" plywood for the back. It was screwed together with sheet rock screws, then stained with a 'reddish' wood stain. It didn't look good until the staining, anyway - that made a big difference. I think it only took about 3-4 hours to put together, a rectangular box should be quicker. For the size, I measured my (very understanding) wife to get the basic dimensions, then 'fudged' from there... A slot was cut in the back to pass the lever arms.





The coffin was screwed to the lever arm mount using drywall screws, arranged to pass the arms through.

NOTES:

Here are some responses I've sent to nice people who have asked questions about the body slinger.

The levers:

I first built up a smaller version to test the idea, and get a 'feel' for differences in the arm lengths and spacing. I would highly recommend you try out a smaller version yourself! The **concepts** for the lever arms are used in lots of motion props. The pieces and dimensions are shown below.

The supports are just 1"x4" uprights screwed into 2"x4"s. I got several assorted 3/4" PVC fittings and pipe, then started hacking until it worked. Honestly, I still haven't measured anything. (I got lots of experience with "I cut it twice and its still too short", though ;-). PVC is really easy to work with, and cheap enough to waste a bit. I didn't glue the pipe and fittings until I got the assembly the way I wanted it - that help the trial and error a bit. I would recommend not using the air cylinder to 'sling' the body until the pipes are cut to size - like a dummy I did, and it REALLY threw parts everywhere! My wife got used to hear me yelling "fire in the hole!" as a warning to get the kids and dogs out of the way. (luckily PVC pipe bounces off of cars and freezers... sigh...)

Oh yeah, one "minor" detail that's critical... I needed to stiffen the bottom lifter arm (the one connected to the air cylinder) for the slinger to actually pitch the body forward when its near the top of the stroke. Otherwise, the body never swings forward. I used a piece of 1/2" stiff copper pipe stuffed inside the PVC pipe, then used sheet rock screws to attach the top part of the air cylinder connector to the pipe - just drilled through both pipes. I was surprised how sturdy it is.

The air cylinder:

I used a 'heavy duty' door closer for an air cylinder because it was a bit larger in diameter than the standard door closer. I used a 1/8" - 1/4" adapter to connect the cylinder to the air line. I got it at Home Depot (part A-22 in a plastic bag in the pipe parts area). One side is threaded, the other is for a pressure fit air line. I force fit the threaded end into the screw hole, then liberally applied epoxy around it to seal and hold the joint. This assembly has worked very well for pressures I've tested over 80psi (I don't recommend using a door closer at those pressures, though!).

The load on the cylinder still means I need to force 60-70psi into it to get good movement. Yes, overcoming the internal return spring is part of the problem. I never bothered to remove it because I like the 'forced' return, and I didn't want to weaken it around the business end attempting a spring removal. I'll change it out for a 'real' air cylinder eventually, but it has worked great so far for over 50 firings. In retrospect, I would recommend using a 'real' air cylinder for two main reasons: 1) They can be found cheaply in surplus catalogs such as C & H and Surplus Sales 2) They are much stronger and safer and built to handle higher pressures. If you are seriously considering building the 'slinger', get a 'real' air cylinder with at least 1" bore and 4"-5" of throw.

Triggering

Once in the haunt to trigger the unit, I'm going to try a floor mat and a motion detector (whichever works best) connected to an event timer that triggers an air solenoid. Because the air line at the cylinder is only 1/8", I'm using a surplus 1/8" two way air solenoid. The door closer leaks enough to vent the air out on the return stroke.

Obtained from
Omarshauntedtrail.com