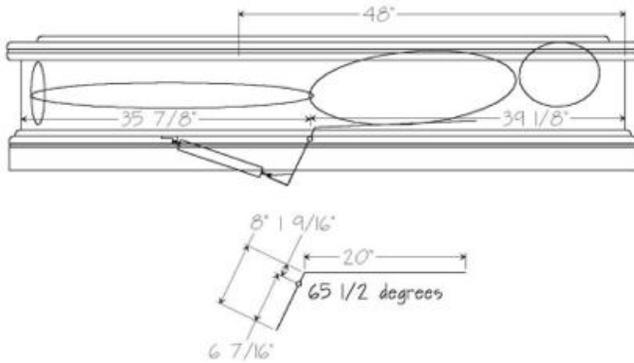
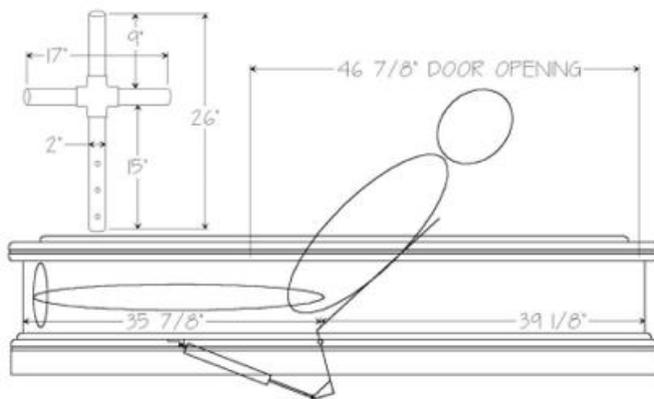


Coffin Coronary - 1 -



There are lots of places to find how to make a toe pincher casket on the internet, but I couldn't find a single place on building authentic coffins. Above you can see that we have used the dimensions of an actual casket to place our "body" inside of to determine exactly how to build the coffin as well as how to fashion the lever that will animate our display.



You will need to print out all the CAD drawings on these pages to reference as you construct your own Coffin Coronary. The mechanism I used for my pop up is a standard screen door closer air cylinder which has a throw of approximately 4 3/4". So with this limitation I determined that the above lever and approximately a 47" wide opening for the pop up would do the trick.

Here is the cylinder in its fully extended position. Your dead body doesn't need to fully sit upright to get the startle, so this was acceptable for my animatronic. The cross shown on the upper left of this photo is the armature you will want to make out of 2" PVC pipe. The shoulders of course are the horizontal pipes and the neck section is very long, as you will be sliding this far up inside of the prop's head. The lower section will be bolted to the upper area of the lever.

Now that we have identified the needed clearances for our pop up it is time to get started on constructing the coffin itself. I will be offering in this how-to the construction to reproduce this museum quality coffin, but obviously it could be done in a very crude and simple fashion and still give the impression of a real casket. Below you will find the cut out list for this. My coffin was constructed of 3/4" solid northern red oak and 3/4" plain slice northern red oak plywood. The cross was made from 3/4" solid walnut.

Here is a cut out list for the coffin construction;

3/4" OAK VENEER

- 1) 16 7/8 69 TOP LID
- 2) 15 7/8 73 1/2 FRONT
- 2) 15 7/8 22 1/2 SIDES
- 1) 22 1/2 73 1/2 FLOOR
- 2) 4 7/8 76 1/2 SUB LID
- 2) 4 7/8 15 3/4 SUB LID

1) 7 15 3/4 SUB LID

3/4" SOLID OAK TRIM;

- 4) 3/4 15 7/8 BOX TRIM
- 2) 3/4 22 GLUE BLOCK
- 2) 3/4 70 GLUE BLOCK
- 2) 3/4 70 1/2 TOP LID TRIM
- 2) 3/4 18 3/8 TOP LID TRIM
- 2) 2 1/4 78 LID TRIM
- 2) 2 1/4 27 LID TRIM

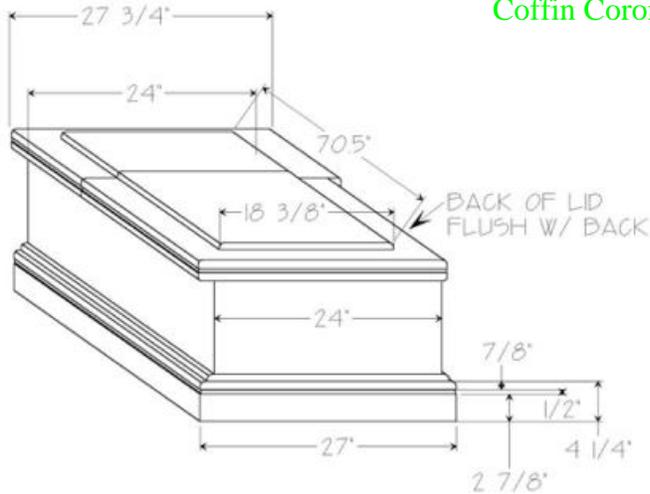
3/4" SOLID OAK KICK PLATE;

- 2) 4 3/4 78
- 2) 4 3/4 27
- 2) 4 1/4 76 1/2
- 2) 4 1/4 25 1/2

3/4" SOLID WALNUT CROSS;

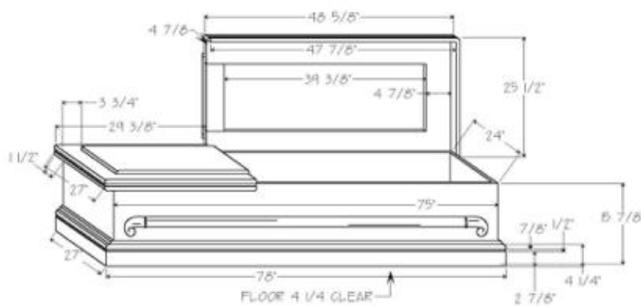
- 1) 3 x 18 (2) 3 x 5
- 3) SPRING LOADED LIFT LID SUPPORTS
- 1) 48" X 3/4" PIANO HINGE
- 1) LENGTH OF 3/8" BRASS BEAD TRIM 31'
- 1) CAN BRILLIANT GOLD PAINT
- 2) YARDS WHITE TAFFETA
- 7) WOOD CURTAIN MOUNTS
- 1) WOOD CURTAIN RAIL 96" LONG
- 6) WOOD CURTAIN RAIL END CAPS
- 1) PAIR FOLDING TABLE LEGS
- 1) 4 YARDS BLACK DOUBLE KNIT FABRIC
- 1) SECTION 2" PVC PIPE 48" LONG
- 1) 4 WAY 2" PVC PIPE FITTING
- 1) SCREEN DOOR AIR cylinder 1) AIR TRIGGER
- 1) REINFORCED 1/8"X2"X28" STEEL LEVER
- MISCELLANEOUS L BRACKETS, MENDING PLATES, CONDUIT CLAMPS, SCREWS, GLUE
- 1) 3/8" X 24" AIR LINE
- 1) AIR REGULATOR
- 1) 1/4" AIR NEEDLE VALVE
- MISCELLANEOUS AIR FITTINGS
- 1) FOAM FILLED PROP HEAD
- 1) WHITE SHIRT & BLACK TIE
- 1) TUXEDO
- 1) PAIR OF "STAGE HANDS"
- 4) BED PILLOWS
- 4) LARGE KITCHEN TRASH BAGS

Coffin Coronary - 2 -



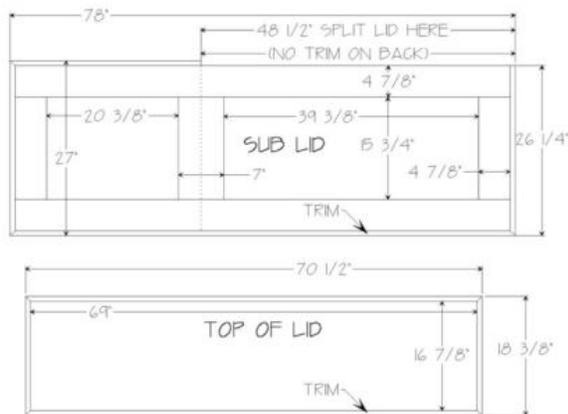
This is the coffin shape I decided on after much thought. The box of the casket itself is assembled by attaching 3/4" x 3/4" trim on both ends of the front and back pieces of plywood. Once the trim has been woodpatched and belt sanded flush to the plywood, we will glue and nail the front and back pieces to the side pieces in a butt joint. After gluing and nailing the box together, woodpatch these joints and well and belt sand smooth.

Slide the floor up under the bottom of your box to 4 1/4" clearance and nail it in. Note; since you will be able to see the top edge of the box where the lid opens, you will want to band them with wood tape. You can use a standard clothes iron to iron it on, or you can cut your box pieces 1/4" narrower and nailing on a 1/4" trim piece, woodpatch the joint and belt sand flush to the plywood before nailing your box together.



The next thing we will do is put on the kick plates. The kick plates must be mitered due to the dado for the brass beading. Also be sure to 1/2" round the top edges of all your kick plates and finish sand them before attaching to your box. The 1/2" round router bit guide bearing extends further than 3/4" so you cannot round this edge after attachment. Dado the 4 1/4" kick plates.

I placed mine at 7/8" below the top edge. Just like the lid trim dado, it will be 1/2" wide and 3/8" deep. The first layer of kick plates will cover 4 3/4" of the box which means there will be a 1/2" reveal down to the next kickplate.

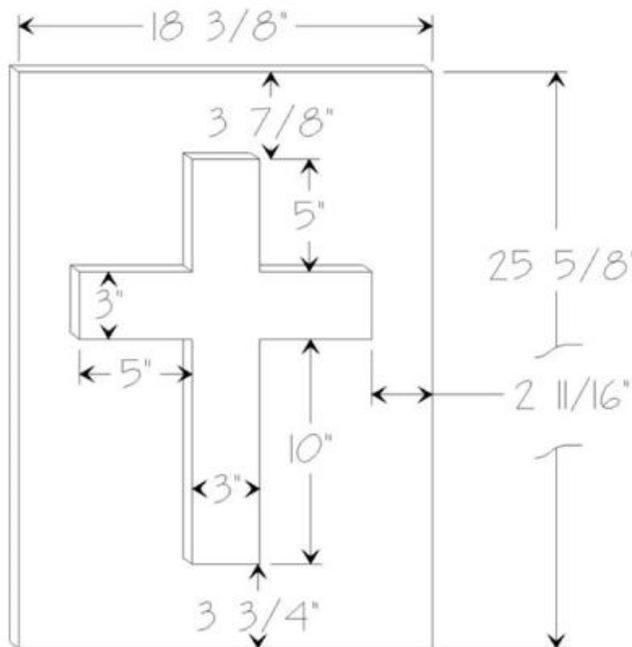


This is a look at the details of the two pieces that make up the top lid which we will cut into two sections after it is fully constructed so that the wood grain follows from one section to the next perfectly. The lower section of lid is permanently attached to the coffin box, where the upper section of lid will hinge back exposing our pop up. This is a little unusual that the lift lid is so wide, but it allows full view of the torso and hands and clearance for him to sit up without running into the lower lid. The trim on the lid is 2 1/4" and is dadoed for a 3/8" wide brass trim rail to be inlaid.

The SUB LID is 5 pieces of plywood that is face frame screwed together to make a framework. You can also just use a single piece of plywood for this level instead of this multi piece construction, as you must be able to attach these perfectly flush to one another since you cannot belt sand them flush later. You will be attaching the 3/4" x 2 1/4" trim edging to the SUB LID.

Be sure to stop your trim that you will be applying to the SUB LID 48 1/2" away from the back end shown to the right here. Your hinge mechanism will not allow you to have any trim behind the section that will be lifting up. You don't have to worry about this trim missing, as your coffin will only be seen with the lid in the upright position, hiding the back edge anyway.

The TOP OF LID is a full piece of plywood that will be trimmed as shown with 3/4" x 3/4" edge to cover the veneer core and give you a solid edge to round. Woodpatch and belt sand the top and bottom edges of your trim pieces flush with the veneer. Once you have your trim on both levels, 1/2" round route the top edge of both. You will want to round the corners of the trim on the SUB LID and then round the bottom edge of the same. It will be up to you whether you even put an edge on the TOP OF LID section or not. If you plan to paint your coffin and not finish it like fine furniture, then you really don't need to trim this piece. Once you have trimmed both of your levels you will need to dado a 1/2" wide 3/8" deep groove in the center of your 2 1/4" trim for your brass bead. You are ready to finish sand both of your tops at this time with 100 grit sandpaper. We use 1/2 sheet Porter Cable sanders to achieve a nice finished raw product. Now you can glue and nail the TOP OF LID to the SUB LID. Be sure it is on center and allow this to dry completely before moving to the next step. Now you will need to cut your lid in half. A table saw with a large fence and table is important for this step. Set your saw at 48 1/2 and this will put your cut to center the 7" stile you placed in the middle of the SUB LID. Once cut into two pieces you can now attach the lower section directly to the coffin, as you will not be needing to get at that area anyway.



The cross that will be attached to the lower section of your lid is shown here in this schematic. The center piece (stile) goes through while the sides are attached to it from underneath by pocket boring and face frame screws. The top edges of this will be 1/2" rounded. Once you have completed and attached the cross, you are ready to stain the entire coffin the color you desire. I used a very light walnut stain. After the stain dries apply a coat of clear wood sanding sealer and once dry, sand with 220 grit sandpaper to smooth. Then apply one to 3 coats of clear lacquer according to how nicely finished you desire.



Once your coffin is lacquered you will need to attach your brass beading in the dadoes of the kick plate and trim as shown. This is self-adhesive backed trim, so it is easy to apply. You can purchase the trim at Outwater Plastics at 800-631-8375. The item number for the bead is #1821. You will need to cut your piano hinge down to around 46" in length and attach your lift lid. I used three center mount spring loaded lift lid supports made by Brainerd, item #1088XC to keep the lid from coming down when I didn't want it to. The photo above is immediately after finish before the animatronic was fitted. That's next.

Coffin Coronary - 3 -



I went to a metal shop to have my 1/8" X 2" X 28" lever bent and an axle pin welded on to it. Instead of using a heavy 1/4" thick stock I chose to reinforce the more stressed section of the lever with some 1/2" square metal tube as you can see here to keep the weight down. The small sections of the square tube seen at the left end of the lever were put there to achieve another idea I was working on that I abandoned, so you need not address this.

The precise placement of the 1/4" diameter axle pin is shown on the very first photo of this how-to. This must be on a perfect right angle to the lever to throw your pop up straight up and not at an angle. This is what will need to be mounted next to the bottom of your coffin. Cut out a 2 1/8" wide by 1" deep slot for this positioned as shown also in the first photo, "coffin11.jpg". Notice that the dimensions shown there are from the outside of the coffin box, and not the inside of the walls. If you measure from the inside of the walls from underneath the coffin as I am sure you will, the dimension of where to place this cut out in the floor is on center at 39 1/8" away from the right, or pop up side, and 35 7/8" away from the left, or legs side. I bent two 1" x 2" mending

plates to create a groove in the middle of each to attach my lever, sandwiching the axle pin against the underneath side of my floor.



This photo shows how I attached the lever. At first glance you may not notice, but on closer inspection you will notice there is an extension bolted to the end of my lever to give me more throw. The reason this is there is because initially I had more than 3" less leverage for my air cylinder to push against. I found that although that arrangement allowed my pop up to travel to a vertical position, this short fulcrum required a very high air pressure to fully execute the motion. That caused the dummy to then travel at a very high speed on the final 1/2 of his movement and the lever would slam hard against the stop you see angled behind the lever. In order to get the air pressure needed down to where the pop up would move up quickly but not violently slam once at the end, I had to add this extension. That extra distance has already been added to this how to. The dimensions you are working with have been proven to work well at about 45 pounds.



We can also see here the air feed to the ram. You can see the air "in" comes from the brass fitting at the top of this picture. That is them routed immediately into an air regulator so that you can hook up a compressor that is set at a high pressure and it won't do any damage to your animatronic. The air then comes out and into your air trigger. You can assemble your trigger here. The triggered air then feeds to a needle valve that is simply used here as a bleed off valve so your dummy will lay back down again after he is triggered. And then of course the air finally is fed to your air ram. You can assemble your air cylinder here. I attached all these items directly under the floor of the coffin so I wouldn't have a bunch of dinglewhompers dragging all over the floor.

Here we pull out to show a view of the folding leg system. I had to build up blocks of wood to flush with the bottom edge of the bottom of the kick plates to attach the legs to so the mechanism would lock out in a vertical position. Then the folding legs had to be cut off at the bottom of the center connecting down rods that are flattened and welded to the bottom "C" pipe that goes onto the floor. I had to shorten the legs about 6" and flatten the new ends of the down rods and re-weld to the "C" pipe so the coffin would be

at a good viewing height. You can see I added 4 "legs" to the four corners of the coffin so I could set it down in the legs-folded position without damaging the extended actuation lever. Now that you can raise your coffin to a good height to work inside of it, let's give it life!



It isn't hard to stretch your taffeta tight and hot glue it to the underneath side of the lid and inside the coffin. You won't need to line the entire coffin, as the TOTs will never see down into the leg portion of the prop. You'll need to put in your lining before assembling your dead body.

By referencing the second Cad drafting in this how-to, "coffin12.jpg" under Blueprints, you will see how to assemble the armature that you will bolt to your actuation lever. The armature will be attached with the top of your lever directly behind the 4-way fitting. This should place the shoulders of your animatronic 20" to 21" from where his hips would pivot. Now that you have the PVC skeleton in place, we are ready to make a man out of it.

Coffin Coronary - 4 -

We'll start by using a large bed pillow and narrow it down to about waist width at one end with duct tape, leaving the other end wider, about the size of a man's chest. This can duct taped directly to the armature. Now we will remove the cover off another pillow and stuff about half of the stuffing inside a large kitchen trash bag. Shape and arrange the stuffing to approximate a man's arm with duct tape. Seal off the open end and attach that to the end of one of the armature's shoulder sections. Repeat for the other arm and attach your Stage Hands to the ends of the arms with some duct tape. Now you can make a slit down the back of the waist to the bottom of the rear of your tuxedo pants. Lay the pants into the bottom of the coffin and wrap the ends of the slit to both sides of the actuation lever. You can tack down these ends with a staple gun to the floor of the coffin. Make two legs out of your pillow stuffing and trash bags and tuck these down the legs of the pants. It's time to dress your dead fred. Outfit him with shirt, tie and tuxedo jacket. Finally you will cut a hole out of the bottom of your foam filled prop head and open a passage way into it nearly to the top of the head. You can use contact cement to glue the head on or put two or three screws through the neck of the head into the PVC pipe to hold it in place.



When triggered your pop us should stop exactly where you see the guy above. The movement was smooth and the reset was adjusted to slowly rest him back down again.



There are only a couple more details before your project is complete now! Cut your wood curtain rod to the desired length for the front side and both ends and screw your rod ends to each of the three rods. These and the 7 mounting brackets will all need to be sealed with your clear wood sanding sealer and then painted with brilliant gold paint. Once they are dry, coat them generously with your clear lacquer to protect the paint.

It is important to note here that if you skip the clear coat step recommended here you will have badly tarnished hand rails immediately, as the brilliant shine that makes these look convincingly like brass rails will go away. Now you will need to center each rod to each end and the front of the coffin and screw on the mounting brackets. The brackets will allow you to slip your hand rails on and off for each use instantly.

Next we need to measure the distance from the bottom of the kick plate of and the carpet and cut our black double knit fabric to attach to the kick plate on both ends and across the front of the coffin with velcro and just hover above the carpet. This will keep the TOTs from seeing the air line and power cords going up to the underneath of the event. Not to mention the sound system you will be using to give your guy a voice. The system I use to detect and trigger this event as well as give him a voice can be found [here](#).

And there you have your very own Coffin Coronary! Congratulations for undertaking a rating 5 on the challenging scale! Send me a picture of your finished event so I can post that here on my website under reader's props!

Air Trigger

<http://www.deathlord.net/AirTrigger/trigger.htm>

Air Trigger



Difficulty Rating: 

The washing machine hot / cold water valve has been used for years as a trigger for pneumatic props, but how exactly do you make one of these little goodies work? For years I followed the instructions originally offered by Carl Chetta of the Trash Can Trauma fame by using 3/4" PVC

pipe threaded end caps on the hot & cold inlets. You need to force them on however, as the threads are different and some of the time they cross-thread, ruining the water valve. Then you would have to drill and tap one of the caps to install your air coupler which can be easier said than done. Here's an easy and safe method for low pressure props use.

Air Trigger - 1 -

In November of 2002 I decided to develop an air cannon using a washing machine valve as the trigger and went on a quest to find a more secure method of sending the air in. What I found makes a \$1 water valve as simple to use to trigger air as any \$65 professional pneumatic solenoid. Here are the details.



Of course you will need a water valve from a washing machine and not just any valve will hold the air back and reseal itself under the rather high pressure I would need for an air cannon. I wound up testing many, many different valves to see which work and which don't.



There are two that I have had success with at high pressure such as what my Aerial Executioner operates at, some 85 lbs. Shown above is Horton C539 / n-6042 which not only worked well, but actually have larger inner porting, so the sound it produced for the cannon was slightly superior to the rest. The other valve that worked well as the N-51 as shown here. The first one (translucent white) is very difficult to find, but the N-51 is readily available at any appliance repair shop used or even from a scrap yard that recycles old washing machines for the scrap metal. It will cost you about \$3 from the repair shop or \$1 from the scrap yard. Be CERTAIN you get the Horton or the N-51! There are lots of other valves out there that look identical to the blue one above, but they are N-50s and DO NOT WORK under high pressure. Look carefully before driving all the way home.

Note;

I have received many emails saying that they couldn't find any of these over the phone calling repair places and parts desks. I need to mention here that this is a part that you will have to get in your car and go hunt down, due to it's low value / high pain in the butt ratio to the repair men. So

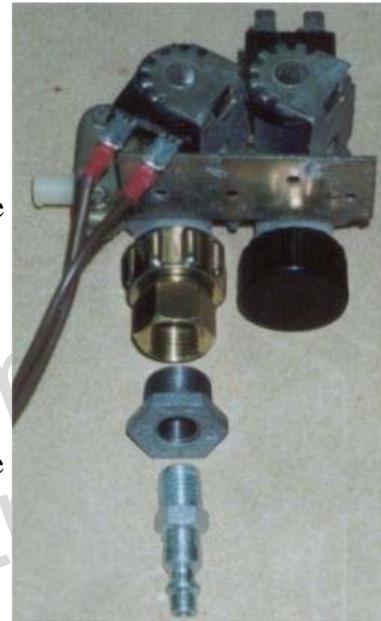
here's my best tip; you will definitely be able to find these things if you go to the city landfill or scrap yard as mentioned above. Every time I go there I can pick up at least two or three or more. Things to take with you to the landfill; large channel lock pliers to get the old water lines off the valve, flat blade screw driver to undo the exit water line, crescent wrench to remove the valve from the washing machine, a rag to clean your hands with after and a plastic grocery bag to put the valves in. Simple. It only takes roughly 2 minutes to remove these and they are really easy to get at, so don't worry about it.

We have covered the attaining of the water valve so now it is time to get the rest of the goodies needed to make this funny looking doowhacky into something that releases the fear of God into your hapless TOTs.

- (1) Female Hose to FIP Swivel fitting 3/4" x 1/2" = \$3.97 (Home Depot)
 - (1) Hose end cap = \$.53 (Home Depot)
 - (1) 1/2 to 1/4" Galvanized reducer bushing = \$.76 (Home Depot)
 - (1) 1/4" IID male air coupler = \$.49 (Harbor Freight)
 - (1) 6' Extension cord = \$.77 (WalMart)
 - (2) 1/4" Female Quick Slide, 18 ga. crimp cord fittings \$.09 ea = \$.18 (Harbor Freight)
 - (1) Washing machine water valve = \$3.00
- Total = \$9.70



This is simple business. Spin your hose end cap on to the water inlet you will not be using and tighten with a large pair of pliers so it is more than just finger tight. The same for the hose swivel fitting to the chamber that you are using. Attach the air coupler to the reducer and the reducer to the swivel using Teflon plumber's tape. You will need to bring power to the water valve as it runs on 110V, so chop the female end off your extension cord and clamp female quick slide fitting to the end of each of the two leads.



Slip on to either lead on the solenoid that triggers your water valve and then cover each with heat-shrink tubing or electrical tape. It does not matter which power cord lead you send to which connector. Either way will work as long as you attach your air nipple to the corresponding cylinder .



And here is how it will look when completed. The top of this photo got cut off, but you can see that 3/8" air hose slips perfectly over the outlet nipple for feeding the air to your prop. And that's it!

Here is an old photo of the completed system (using the previous method of forcing the PVC pipe end caps on which were tapped with threads for the air fitting) put together for the [Exorcist](#) that illustrates well how this will be used. I attached the air line from the compressor to one end of an air regulator and attached the out directly to a threaded fitting going into the solenoid.

The air out of the water valve is hose-clamped on for a positive fit. For opening the air way to your pneumatic event you will merely send power down the power cord.

Once released the air travels to a three way connector that will split the air to the air cylinder as well as out to a muffler fitted at the end of about 5 feet of line. You can see there is an air valve to the muffler line because we will be dialing in the exact amount of bleed that allows our pneumatic prop to reset.



Obtained from
Omarshantedtrail.com

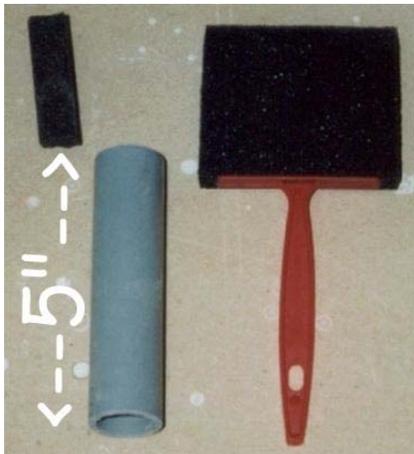
Air Trigger - 2 -



Here is a photo of the compact regulator I use on all of my animatronics that you might want to consider adding to your air trigger assembly as well. It is a Harbor Freight item [no# 90590-0VGA 1/4" Air Regulator With Gauge](#) and is NOT to be confused with an Air PRESSURE regulator sold for a few dollars less at the same store.

The diaphragm regulator works like the unit on your air compressor, releasing a total air pressure as shown on the gauge and never more than that. An air pressure regulator is a FLOW regulator only. Meaning that if you have a flow regulator adjusted to 28 lbs and are sending 105 lbs of pressure going into the intake AND keep the air flowing through constantly, the pressure coming out will stay at 28 pounds.

But once you stop this flow, the pressure that backs up against its inner mechanism allows the full blast of pressure you have going in to be emitted initially, until the flow stabilizes. Thus, if you have an animatronic that works on 28 lbs of pressure such as the [Exorcist](#), a PRESSURE regulator, if left hooked up to 105 lbs of direct pressure from the air compressor but set to 28 lbs for your prop, will send your puppet through it's cycle about 4 times as fast as needed and probably through the ceiling. Funny as hell for a just a moment until you realize you have to replace all its working mechanism and patch that hole in your garage roof. So be sure you are buying a DIAPHRAGM regulator. I am asked all the time how to hook this up to your 1/4" IID air fittings and the answer is exactly like regular fittings. Even though these look a little different, they do seal off just fine when using Teflon tape.



For years I have heard the loud hiss as the bypassing air escaped out while my props were triggered and then the long hiss while it reset back to its ready position. This year I determined that I would make a silencer for this sound. Here you will see one very easy way to accomplish just that, however you will find another, newer version at the bottom of this how-to that is more compact and will work with smaller air line and can even be fitted for use with a 2 way air cylinder that requires both inlets to be silenced while in use.

I found that 3/4" PVC pipe has just a little larger diameter inside than the 3/8" air hose I work with has for an outside diameter so it made sense to start there.



I had an extra foam paint brush laying around so I cut a couple of strips off that would slip inside the 5" section of pipe.

Then using a jig saw I slotted up one end of the pipe in about 4 places and simply hosed clamped that end to the air line.

To hold the foam in place I put a screw in the other end. This is a really solid mount to the heavy rubber air hose, so it will not be falling off.

Now When I set up my props I simply run the muffler line out behind the prop behind the wall to hide it.

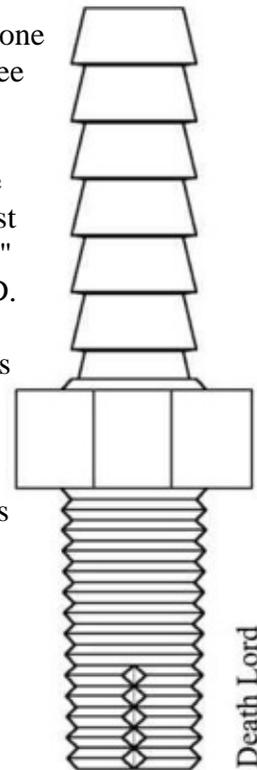
The sound is not only eliminated nearly 100%, but by introducing the muffler to the system actually cuts down on the air pressure needed to activate the prop and in turn less air volume. And that means less refilling of the compressor tank during the night.



NEW! The new "compact" muffler shown here uses 1" PVC pipe just 2 1/2" long with one end capped and threaded for the valve you see installed.

The hose fitting in the other end of the valve (which allows you to choose exactly how fast or slow you want your prop to reset) is a 1/4" slip fitting that is the right size for 3/16" O.D. clear vinyl hose. The muffler is then stuffed fairly tight with foam rubber and then screws are installed at the end to keep the foam from coming back out. This super compact muffler makes all exhaust from the cylinder completely silent, making it both effective as well as extremely easy to fit inside of any pneumatic prop.

In the far right CAD drawing you can see a very simple way to cut the threads into your end cap.



Death Lord

Once you drill out a hole just under the diameter of the threads of your fitting (15/32nds drill bit), you can use the fitting itself as a thread tap by cutting across the bottom few threads with the sharp corner of a metal file. The more vertical the cut is on the right side of the threads (in the perspective shown above) the better it will cut, as the sharp edge cuts cleanly into the plastic. When the threads are cut, remove the fitting, wrap with Teflon tape and re-install. Be sure to turn the fitting in fully past the cross cut so air cannot escape back out of the groove if you are using this technique on a high pressure system. When making the muffler, no tape is needed.



Here is yet another way to use your compact muffler. These photos, which was first used in the 2003 project, the [Lynching](#), shows a second fitting on the top side of the muffler that can be used to silence the exhaust from the secondary air inlet on a 2 way air ram. You must route these two lines into the muffler separately, as if you link them together, you will in essence be attempting to force air into both the PUSH inlet and the PULL inlet of the same air ram.



So there is the first step in making an air-activated scare event. If you would like to see the trigger in use, you can visit one of my other how-tos on this like the [Aerial Executioner](#).

If you want to automate the use of your air props you can do that by using an Event Control Timer (ECT). You can learn more about it on the [Motion Trigger](#) how pages.

Screen Door Air Ram



The screen door closer has been used for years as an air cylinder for pneumatic props, but how exactly do you make one of these work?

I learned how to do this with extensive research when building a [Trash Can Trauma](#) (created by Carl Chetta) a few years ago. After the research I decided to document all the details of how to do this again in case I wanted to make more animatronics. Lucky too, since I have had occasion to use one again recently and was happy that I was able to go right to the store and buy the correct parts.

I also expect to use them in the future as well, as they are the cheapest way to achieve a self closing air cylinder that will work for years.

This how-to will be slightly different from the other web sites you may find on the internet, as this is a very industrial type end product since the air-in fitting is attached properly and will last under heavy abuse for years. The typical instructions show how to force large fittings into the very weak walls surrounding the threaded fitting of the closer. That type of arrangement could prove not only problematic possibly requiring repairs, but more importantly IMHO could be dangerous. Here are the details for building an alternative one that will work for a long time.

MATERIALS;

- 1) "California Screen" Screen Door Closer
(Model #VJ102CALBL)
- 1) Brake Bleeder Valve
(SIZE M7-1.0 x 33.8MM, Pep Boys NO#3139551)
- 1) 15/64" Drill Bit
- 1) 7MM - 1.00 Metric Tap
- 1) Roll Teflon Tape

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You will need to begin with a typical screen door closer like the one shown above from your local hardware store. This one happens to be from Home Depot; "California Screen" closer model #VJ102CALBL. The fitting needed to get the air IN to your cylinder is an automotive brake bleeder fitting from Pep Boys, the technical dimensions (this is important in the event you need to go to another place to find the exact size that works with the bit and tap as documented here.) is M7-1.0 x 33.8MM and the part number from Pep Boys for one is #313955.1.



You will also need a 15/64" drill bit & 7mm - 1.00 Metric Tap as shown here. Remove the air bleeder screw from the back of the door closer and using the 15/64" bit, drill the adjustment screw hole out until you reach the end of the aluminum, but do not drill all the way through. Stop the bit just before the end so the air fitting will have something to stop solid against. While drilling this out you should keep the closer and drill bit pointed upward to keep all the aluminum shavings from going down into your cylinder. Now you will tap threads for the automotive bleeder screw but stopping just shy of the end of the hole just as you did with the drill bit. You will notice the bleeder fitting has a hole running down the center of it that then stops at a junction that routes the brake fluid to each side of the screw. Since you want clear, uninterrupted air flow to your cylinder and also need the threads to run to the very end of this fitting, you must cut off the end of the screw that is smooth as shown on the right of the two fittings shown here. Use some Teflon tape around the threads on the fitting so your connection will be airtight and thread into the back of the door closer. When you are done your cylinder should look like the photo on the right.

This air cylinder produces 4 3/4" throw when fully extended and will require about 30 lbs of pressure to actuate.

This should help you in your quest of creating your own pneumatic animatronic of your own vision or to complete a project that refers to the screen door air cylinder but doesn't go into detail on how to do it and what parts to buy. If you would like to see the air cylinder in use, you can visit one of my other how-tos on this like the [Aerial Executioner](#). Or, you can go directly to the next step you will need to activate your ram, making an [Air Trigger](#).

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