



<http://www.deathlord.net/screendoorairram>

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



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](#).