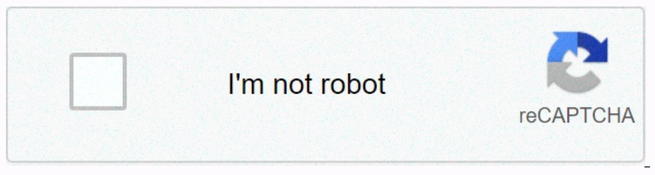

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Pvc rocket launcher plans

Summer's here, and I was looking for something to do with the kids. They raved about how fun the rocket launch was at the Maker Faire in San Mateo, and I wanted to bring some of that fun home. All I needed to do was build for my kids the kit version of Rick Schertle's compressed air rocket launcher that was featured in MAKE Volume 15. This is a very easy construction, and the rockets go incredibly high! How high? That's a great question I can't answer. Because? Because the rockets were so high, I could barely see them anymore. I think it's high enough! If you know a way to measure height, let me know in the comments. I know a few ways, but I'd like to hear your suggestions too! Note: You can build the launcher from Rick Schertle's plans in MAKE Volume 15. The kit includes a copy of MAKE Volume 15, all electronics and PVC parts cut to length. All you need are some simple tools, glue and tape. What you need: Tape, duct or pliers of similar reinforced bike pump, channel lock time to build: about 1-2 hours Difficulty: Easy! The Maker Shed kit has some changes that make it more portable. I'm not going to go over every detail of the building because they're all in the magazine, but I'll cover the changes and some of the modifications I've made to my rockets. Let's get started: Build the pressure chamber Start by adding the Teflon tape to the reducer fitting and screwing it into the threaded PVC reducer cover. Use an adjustable wrench to tighten. Then using a little more Teflon tape and screw the shaved brass fitting into the reducer fitting. Simple! Now it's time to start pasting the PVC parts together. Let's add the piece we just made to the PVC tee as described in the directions. The process is the same on all connections. First clean up the connection to the primer. I chose it clear, but purple is more common. Now add the glue. Any PVC glue is fine to use. I used extra strength, but the standard variety is also good. Be sure to work fast, and give the parts a little twist during the joining process. Now glue the 10-long PVC pipe to the other end of the PVC tee, as described in the directions. Followed by gluing on the final lid to the 10 piece of PVC. The launch system: Start building the launch system involving Teflon tape around each of the 3/4 male female slip PVC adapters. Connect each adapter to the whey valve and tighten with channel lock pliers. Take note of the arrows on the wand valve. On the outside of the valve, glue a length of 16 of the PVC pipe. On the in side of the valve, glue a length of 3 PVC. Now paste the docking of the the top of the PVC tee connector, as described in the directions. Followed by gluing the set of the squeeour valve you just made. Building the improved booth: The kit has a support that different from that described in MAKE Volume 15. It's more portable, and easier to build. Start by measuring 6 1/2 on each side of the 16 PVC pipes. Next drill 1/8 holes completely through the PVC pipes in these locations. Now enlarge the holes with a bit of 1/2, but only on one side of the PVC (this is now the top side). Don't stick all the way! Feed 1 end of the zip-ties included in one of the 1/2 holes. Then use a small screwdriver inserted into the back of the PVC pipe and push the tie up into the other 1/2 hole you just drilled. Does it look complicated? It's no big deal! Don't attach your legs yet! We have to wrap the air chamber in duct tape first. We'll do it in no time. Building electronics Let's start by building the launch handle. It houses the electronics and allows you to fire it at a safe distance. First, drill 1/8 into 1 of the PVC end covers and a 1/2 hole in the other cover. Weld the (2) wires supplied to the button. I added some heat shrinking tubes for added safety. Add the button to the final cover with the 1/2 hole. It's a bit tricky to screw the retaining nut, since it's a tight grip. Now feed the wires through the 4-section PVC pipe. I added a small nut to the wires. Makes it difficult to pull the wires out of the handle. Just wrap the wires around 2-3 times about 1 from the end of the PVC pipe. Then feed the wires through the other cover. There is no need to paste any of these pieces. To make the wires look clean, I squeezed them into a drill and twisted them together. You can do it by hand, but the drill does a quick job of it. 1-2 seconds later and I have a good length of twisted wire! The controller is done. Now let's move to the power supply. Power supply construction The power supply is quite simple. Start by welding (1) red wire from the battery clip to (1) black wire from the other battery clip. I cut my wires a little short and used some heat shrinking tubes for added safety. Then weld (1) the remaining wires of the mass clips to (1) wire the release controller. The remaining battery clip wire is welded to (1) wheet valve wire. The last connection is made by welding the remaining wire from the swiper valve to the rest of the release controller. It may seem complicated, but it's a very simple circuit. Check out the instructions for more details. Building the air supply connections The first thing you need to do is remove the rubber box from the air valve. I found that using (2) pairs of pliers and turning them around the valve rod caused the rubber to turn. Place the included crimp on one end of the tube, along with the valve rod, and smashe the ears. makes a very strong connection. The other end is attached to the launcher and is held in place with a zip tie. Wrapping the air You should wrap the tube in duct tape. PVC is under a lot of pressure, and even in a fault, the tape will help contain the parts. You can find duct tape in many different colors now. I saw rainbows, camouflage and even flower patterns. In the end I chose a nice medium blue. Wrap everything in at least 3 layers of tape. Finishing now we can add the legs to the launcher. All you have to do is tie them up. The final step is to attach the batteries (2) 9 Volts. Fix the wires and tie them in the vertical section of the launcher, and you're ready to go! Wait! You need to make some rockets! Making the rockets my kids wanted to color the rocket models. Instructions say to use duct tape for the rockets. However, you can also use light packing tape, which allows colors to show. Fun! Start by coloring the included rocket models, followed by cutting them into the black lines. Follow the instructions for building the paper rockets by replacing light packing tape with adhesive tape. There are (3) pvc pipe parts in the kit that are used for rocket construction. This allows (3) people to build rockets at a time. When everyone's done, you must have a beautiful rocket, all ready to take off. Place the rocket on the launcher and pump the air chamber to 60-75 psi. So get ready for the countdown... 3... 2... 1... Impact! Note: Be safe. Stay away from the rocket launcher when pressurized, and always wear safety glasses. I took a video of the launch, but the rockets are so fast, go ridiculously loud, and it was too bright to get any good video. However, this gave me a great idea. Make a vellum rocket and place some LEDs on the nose cone for night launches. I plan to do this this weekend, and I'll post some videos if it comes out! Check out my full flicker photo here. Don't forget that you can make your own air rocket from plans in MAKE Volume 15, or catch Rick Schertle's Air Rocket Kit from Shed Maker. All you need is cartomuto, tape and scissors. It is easy to build a rocket that can reach a distance of 50 feet. However, making a high performance rocket is actually quite challenging because all aspects need to be designed to close to perfection. At high speeds, small imperfections are quickly blown out of proportion because the forces that act on the rocket are intensified. For example, a nose that leans slightly to one side may not significantly influence the rocket's performance at 40psi, however, at 60psi the nose can create an imbalance of friction created by running air, causing the rocket to rotate sharply and fall to the ground. For this reason, take your time while creating and attaching each of the rocket. And with that in mind, here's how to make a high-performance rocket: Hi everyone. Before we get to today's I want you to know that I'm participating in a fun extravanganza guest post presented by Sugar Bee Crafts. Every day, for the next few weeks, she's linking to four different red-white and blue guest posts, and today's project is one of them. Click here to see the other three projects today and keep checking for four projects a day! Is there a family reunion coming up this summer? Maybe to the bedroom? Or a meeting? This is the perfect activity when you want to keep a lot of happy kids out this summer: a DIY PVC rocket launcher. With basic supplies from the hardware store, a bicycle pump or air compressor, and some empty 2-liter bottles, you can keep your kids happy for hours by launching 40 or 50-foot rockets into the air (these babies fly!). Here's a video of him in action: The instructions may seem daunting, but it's not really difficult and you can put it together in about half an hour. You will need to plan to let it dry for at least a few hours before using. (NOTE: I found the plans for the rocket launcher here, so this is not my original design. However, I am providing original photos and more detailed construction explanations and graphics.) Supplies: The cost of supplies is about $20, including two types of adhesive. If you already have sticker on hand, the cost is a little lower, and making additional launchers would cost only $5 or more. about 5 feet of 1/2 inch pvc pipe, cut into (1) 2-foot piece, (2) 1-foot piece, (1) 8 inch piece 2 end covers (slip) – 1/2 inch 1 elbow (slip) – 1/2 inch 2 male adapters (slip) – 1/2 inch 1 tee (sliding on the sides, screw at the bottom) – 1/2 inch 1 tire valve cut from an elective tube tube of old PVC tape pvc adhesive pipe that works on rubber, such as barcage cement tire pump or 2 liter air bottles (1/2 liter water bottles will also work) drill Here is a picture of how everything fits: Start by cutting a tire valve from an old tube (or buying a tire valve). Cut the rubber at the base of the valve so that it fits inside a final cover. Drill a hole in the final cover just large enough for the valve to fit. Place barge cement inside the end cover and into the valve, pull it tight through the hole. Set aside for a few minutes to dry. (This is the hardest part, and it's not even that difficult.) Put it all together: Now you can attach a bicycle pump or air compressor to the tire valve. Then fill a 2-liter bottle about 1/3 full of water and place it on top of the wrapped male adapter of the tape – twist it to get a very good seal. Start pumping air and wait for the bottle of the launcher, shooting into the air and spraying everyone with water. Then the laughter will begin! Some notes: 1 – we can't find barge cement in Home Depot (it's available on Amazon) so we used a different glue to attach the tire valve to the final cover. The seal was not perfect, which means air around the tire valve, making it harder to accumulate enough pressure for a launch. We ended up wrapping the final cover and tire valve firmly with electric tape to keep a seal tight and it worked very well. 2 - Keep small children away from the launcher. The bottles shoot really fast, so you want to make sure no one gets hurt. If you push the bottle firmly enough to the launcher no one needs to touch it while the air is being pumped in. 3 – the electrical tape will start to get all inflated after a few releases, so you may need to take it off and wrap it over occasionally. 4 – kids can decorate their own bottles and add fins on the sides, but DON'T place cones on top to make them look more like rockets – these fly too high and you don't want anything pointy coming back down to you. 5 – How high the rockets fly depends on how tightly you twist them down on the launcher, how much water is in them and how quickly you can increase the pressure needed to pop it – let the kids experiment to see what the best combination is. 6 – My 10-year-old was able to launch the rockets on their own, but my 5-year-old son wasn't strong enough to do it with the bike bomb, so plan to help the younger kids. 7 – You can unscrew the launcher on the tee for storage. Have fun! Did you like this post? 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