

Make your own blast gates!

Homemade Blast Gates!!! So here it is....

Several folks have e-mailed and requested information about my shop made blast gates. Hopefully this information will assist you in making your own and save yourself some money.



I made them from scrap plywood and HVAC starter flanges. I bought the flanges at my local HVAC supplier. The outer parts that you mount the flanges on are 3/4" and the meat in the sandwich is 1/4" plywood or hardboard. Cut the 3/4" pieces to the correct size (11" X 12" for 6" pipe) and cut the hole for the flange. I just used a jigsaw for this and finished up the hole on the oscillating spindle sander. The 1/4" ply / hardboard needs to be a couple of inches longer than the 3/4" (11" X 14"). This will let it stick out of the gate when we are done. Trim off the excess 1/4" after you cut the insert out on the 1/4" that will be part of the sandwich. I used the BS to cut the slider out of the 1/4" ply. It is 1/2" wider than the hole for the flange. Glue and brad the sandwich together being careful to keep the glue towards the outer edges to prevent it from getting into the slot. Round over all the edges. Drill a 3/4" hole in the gate insert so you can stick your finger in it to open. Screw the flanges on either side of the gate and you got it! The horizontal lines on the gate inserts are there to let me know when the gate is fully open and fully closed. If sawdust gets into the slot it will not let the gate close all the way. Marking this line will let you know if this is happening. If I see the gate not closing all the way I pull the insert out and stick a stiff piece of wire in the slot to clear any blockage. If you can mount the gate horizontally the sawdust will not get into the slot.

Tip: To make the blast gates operate smoothly, apply two liberal coats of Johnsons Paste Wax, let dry and then buff lightly with a rag.



I cut off some of the flange below the stamped ridge and slid a short piece of pipe over it to fit into the S&D fittings. Use a couple of screws to secure them and seal with bathroom adhesive caulk. If you are mounting flex to the gate it will go right on. Also the flange will fit perfectly into the S&D pipe whether you cut the flange below the ridge or not.



Here is the gate in the open position. You can see the registration marks on the insert. Some folks have glued PVC in the holes instead of using the metal flanges I did not feel like I could make a solid enough connection to the 3/4" ply with just the PVC pipe.



This is a close up of the flanges. This one is mounted to my miter saw hood, but it is the same thing I used on the gates.



Overview:

I used 6" S&D (sewer and drain, also called PVC 2729) PVC plastic pipe and fittings everywhere I could. All 90 degree turns are 2 45's together to make a better transition. Nothing is glued, but I did seal the connections with bathroom adhesive caulk after everything was together. I tried to limit the use of flex hose opting to run the PVC as far as I possibly could. On the drops near the DC, you can use an extra gate right at the Y to reduce the amount of dead pipe in the system.

Total cost was about \$300! That's right I said 300 bucks! For example, my local plumbing supplier gets \$10.15 for 10 ft. of 6" pipe. Y's were \$9.75, 45's were \$3.95.

If you are wondering about 6" being too big, **FORGET ABOUT IT!!** It is unbelievable what a difference upgrading from the 4" ducting and hose makes! I reduced to 4" only where I absolutely had to. I made hoods from HVAC fittings to increase to 6" anywhere I possibly could. My old system was mostly HVAC pipe and fittings. The new PVC is much more efficient. Not having all those pipes in the floor is much nicer also.

Hope this explains my ducting and homemade blast gates well enough.

I hoped to make this system work just using my 2 horsepower Grizzly 1029 dust collector. I upgraded with PSI 1-micron filter bags. Although, those bags did wonders for increasing the airflow, they just did not work so well as filters, as my whole shop continued to be covered in fine dust. That's why I decided to build a good cyclone and use much finer cartridge filters.

Bill helped me with his plan, helped me pick out a big impeller for my large shop with the right matching motor and filter, then helped me with at least a hundred emails stepping me through each part of building my own cyclone, blower, and filter. One of my friends that owns a sheet metal manufacturing firm helped me with a big computer controlled cutter and lots of his and his staff's time. The result is pretty impressive and I got all the details down so others can build one from a kit using this pre-cut metal in a fraction of the time. Here is what it looks like:



This is my Dust Eliminator kit cyclone that was inspired from building my cyclone. I recommend people build this kit and power it with a good Leeson 5 hp motor turning a Jet DC-1900 14" diameter impeller. I stepped up to a Cincinnati Fan impeller powered by a 5 hp Leeson compressor duty motor in a Bill Pentz designed blower housing that I made. The filter is attached to a homemade clean out box. The filter is rated at 99.9% efficient at 5 microns. It really flows well and does a great job on trapping the really fine dust.

Thanks,
Terry Hatfield, NW Arkansas
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P.S. Here's a little trick! After the PVC is all up and before you do any extra sealing....wash the whole system with a little thinner. This will remove the writing and clean the scuffs and such. Makes everything look really nice!!!