



Vacuum Anti-Crush Valve for Cyclone Dust Collector

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Summary

Pressure release valve for Cyclone Dust Collector

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After replacing my home made dust collector with a Dust Deputy cyclone, I found that the plastic barrel I was using would collapse on itself if the hose ended up clogged/blocked. I needed a way to let off the vacuum pressure in these situations, and came across a few designs for a pressure relief valve.

The valve in this file is built for a 35mm hole in a plastic drum lid, dimensions may need to change for metal or other materials.

In addition to the printed parts, you'll need:

- 1 1/4" (32mm) flat rubber washer
- M5 x 40mm, or a similar sized with partial threading near the head.
- Compression spring that fits around the M5 bolt.
- M5 Fender washers (ideal) but regular washers can work. 1x M5 Nylock (Ideal) or 2x M5 nuts.
- Mounting hardware (I used M3 bolts + nylocks)

Attached Fusion 3d file has parameters that can be adjusted for the size of the hole in the lid, size of the holes for the various hardware as well as the size of the rubber washer.

Assembly:

1. Push the M5 bolt through the hole in the bottom piece. The head of the bolt is inset in the bottom piece.
2. Put the rubber washer on the M5 bolt next. Some people have glued this washer to the bottom, but I didn't find any need to do so.
3. Put the Top piece onto the M5 bolt.
4. Put an M5 washer, compression spring, M5 washer and either 1 nylock M5 nut, or two M5 normal nuts butted up against each other.
 - There should be some compression in the spring, and there should be a reasonable amount of movement up and down.

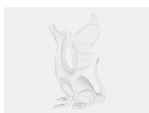
Model files



vacuumrelease_bottom.stl



vacuumrelease_top.stl



vacuum-release-valve.f3d

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