



Miniature Vacuum Ejector (Air Powered Vacuum Pump)



LoboCNC

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Summary

I designed this little vacuum generator, also known as an ejector, for use with a vacuum cup for robotic manipulation....

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I designed this little vacuum generator, also known as an ejector, for use with a vacuum cup for robotic manipulation. Blowing air in one side at 50 PSI will generate about 5 PSI of vacuum at the side port. The advantage of using a lightweight eductor right at the end-effector (as opposed to using a remotely located vacuum pump) is that you can control the vacuum action nearly instantaneously for faster pickup and eject times.

It is only 1.225" long and weighs less than 5 grams. It's designed for use with 10-32 pneumatic fittings. (I've included the Solidworks part file for anyone wanting to optimize it or add mounting features.)

Printing

Use a 0.35mm line width and a 0.2mm layer thickness. I used PLA, but ABS or PETG should work as well.

Post Printing

After printing you will need to clean out the internal nozzle orifice with a 0.047" dia. drill bit. You will also need to tap the input and side vacuum ports with a 10-32 tap.

Category: Engineering

Model files



v18.stl



v18.sldprt

[Find source .stl files on Thingiverse.com](#)

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