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## The accidental pocket jet engine... by killerjackalope (/member/killerjackalope/)

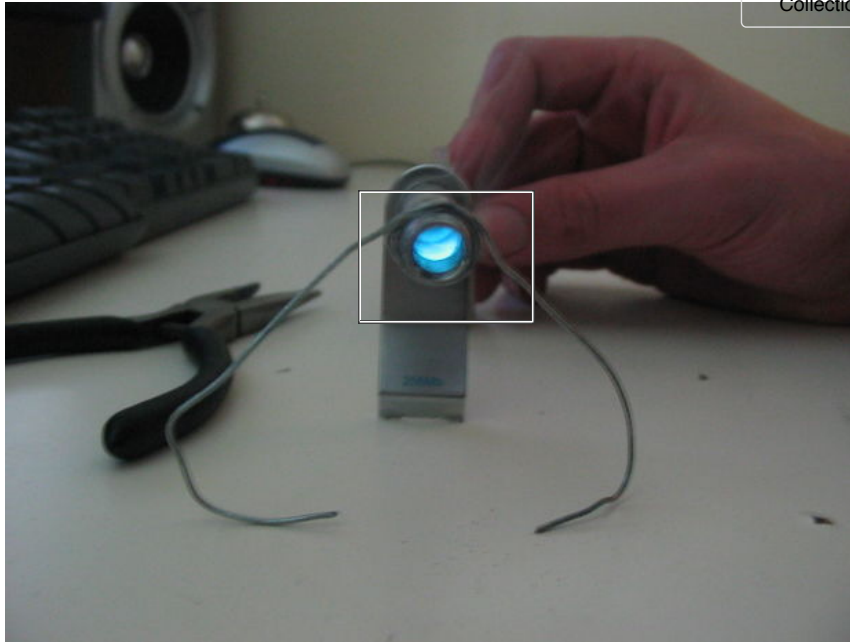
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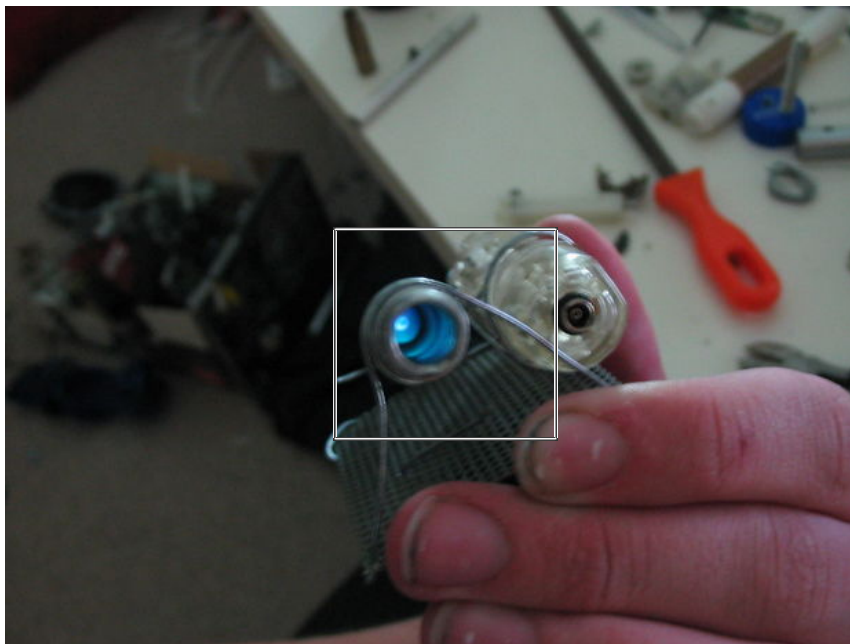


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7 Steps



(<http://cdn.instructables.com/F62/HZAH/FE4O3C0K/F62HZAHE4O3C0K.LARGE.jpg>)



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**killerjackalope**  
(/member/killerjackalope/)

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(/member/killerjackalope/)  
**Bio:** A Northern Ireland based maker with a propensity to cause trouble and freshly constructed family.

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Yep, that's right a baby jet engine, it takes in air and uses fuel to heat and therefore expand the air, this particular engine is more a functioning model, it produces little thrust in real terms, it is however a lot of fun and makes one interesting ornament, albeit a dangerous one.

Continue on and see, by the way here's a video to go with it.



# Gas Flow Calibration

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## Step 1: Tools and materials



(<http://cdn.instructables.com/F30/IGSZ/FDYPTGI9/F30IGSZFDYPTGI9.LARGE.jpg>)

- Tools:
- \*Pliers
  - \*File (possibly avoided)

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\*A lighter

Materials:

\*A metal pen barrel

\*The cap of a bic pen

\*Some wire (I used bare steel wire)

\*A jet lighter nozzle (If you don't have one I'll soon have an instructable showing you how to make one)

\*A lighter reservoir (I used one off another jet lighter that had three nozzles, converted it to one for power)

## Step 2: Explanations and safety



(<http://cdn.instructables.com/FLE/3S42/FDYPTGII/FLE3S42FDYPTGII.LARGE.jpg>)

Ok you are dealing with fire and gas here, so at this point I would like to explain that I take no responsibility for injury or damage caused by the items shown in this instructable, also if you're under 13 I suggest not doing this at all, just because you're under thirteen, fire may cause rash judgements in males under 50 and females under 16.

Well how this happened... I was making a simple bunsen burner for the pocket instructables and as far as I can tell the new design I came up with affords too much slowing of the air/gas mixture, combined with the fact that the upper casing becomes hot, this meant that the flame reached a critical point and suddenly receded inside and turned in to a jet engine, by putting a tiny nozzle on the end after this may be able to create some thrust.

Again, I accidentally made a jet engine out of a pen.

## Step 3: The setup.



(<http://cdn.instructables.com/FJR/A89E/FDYPTGI8/FJRA89EFDYPTGI8.LARGE.jpg>)

This is dead simple.

basically you have gas and air coming in one end, being burnt in the middle and hot gases coming out the other end...

So the nozzle goes on the bottom of the metal pen barrel, air holes outside the barrel, the pen lid is chopped up a tad and used to make a small sealing ring around the nozzle top, without that you'll only get a weak yellow flame because pressure can't build and also there's too much air to gas.

#### Step 4: Putting it together.



(<http://cdn.instructables.com/FNF/GKLT/FDYPTGIF/FNFGKLTFDYPTGIF.LARGE.jpg>)

So first thing you'll need is to make the nozzle fit tight in to the pen barrel, my way of doing this was simply to cut the end off of the bic pen lid and fit it over the



barrel and shape it so that the air holes were open, very important. after fitting it to the nozzle you slide the nozzle assembly down the pen barrel and then grip the bottom part of the nozzle and pull and wiggle the nozzle down until the air holes are at least halfway clear of the barrel bottom.

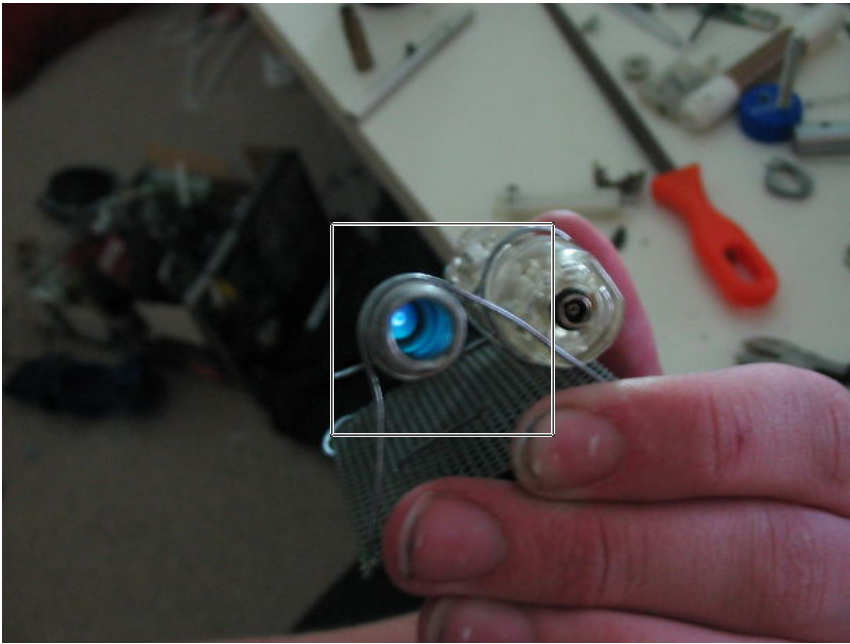
### Step 5: Stand it up...



(<http://cdn.instructables.com/F18/169Z/FDYPTGIH/F18169ZFDYPTGIH.LARGE.jpg>)

I used some wire and a bit of speaker mesh to create a decent collapsible stand for the rest of it, I then used some wire to hold the gas tank in place on the mesh aswell, after this I connected the nozzle up to the gas tank.

### Step 6: It lives!!!



(<http://cdn.instructables.com/FK9/NBMM/FDYPTGIJ/FK9NBMMFDYPTGIJ.LARGE.jpg>)

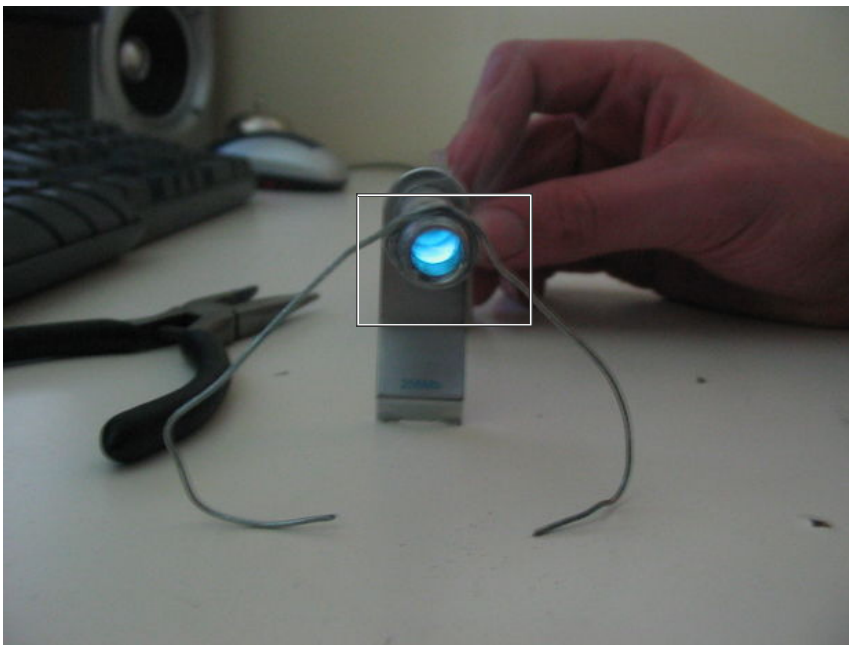
So after pulling the little lever bit to start the gas flow I held a lit lighter to the end.

At first there was a nice flame out the end and after three seconds or so there was a small pop and then a strange wooshing noise, holy moses I made a jet engine out of a pen and lighter...

### Step 7: Now it's better



(<http://cdn.instructables.com/F1L/HWZM/FE4O3C0N/F1LHWZMFE4O3C0N.LARGE.jpg>)



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So after some more modifications and using a different nozzle I've managed to avoid plastic parts and give it more power, also with a video...

Second pic shows the engine in it's new shape, different stands.

Hopefully you'll be able to hear the engine in this video, it's hard to tell when you already know what it sounds like.



In the video it's running really hot and is burning the powder coat on the pen tube a bit, the actual barrel is made of brass so it's pretty safe.

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By killerjackalope

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By LetsBuildOne

(<http://www.instructables.com/id/The-Original-Beer-Can-Jet-Engine/>)



Fixing that jet lighter you love

By killerjackalope

(<http://www.instructables.com/id/Fixing-that-jet-lighter-you-love/>)

**DatKoolKid2320**  
(/member/DatKoolKid2320/)  
Joined Jul 15th 2013

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**TOBY** (/member/TOBY/)

20 days ago

Reply

Isn't it a blowtorch?

(/member/TOBY/)



**ceraman** (/member/ceraman/)

5 years ago

Reply

is this a really jet engine or just a decorative model? i want to make a practical one but i think that's not work in this way.

(/member/ceraman/)



**rbetel** (/member/rbetel/)

ceraman

2 months ago

Reply

I would say this is more of a small rocket than a jet.

(/member/rbetel/)



**killerjackalope** (/member/killerjackalope/) (author)

ceraman

5 years ago

Reply

This one won't produce serious thrust, for the size and valueless pulse jets probably the best option, I have plans to build a jet engine with useful thrust but at the moment I'm working on some high voltage projects

(/member/killerjackalope/)



**KipH** (/member/KipH/)

5 months ago

Reply

What is the jet nozzle made of I can't find a video of how to make it.

(/member/KipH/)





**DatKoolKid2320** (/member/DatKoolKid2320/)

8 months ago

Reply

(/member/DatKoolKid2320/)

hey this is sweet and I want to build it but im not sure how if I can use a regular lighter or not and I don't know where to poke the holes.



**DatKoolKid2320** (/member/DatKoolKid2320/)

8 months ago

Reply

(/member/DatKoolKid2320/)

hey this is sweet and I want to build it but im not sure how if I can use a regular lighter or not and I don't know where to poke the holes.



**freak0vnature** (/member/freak0vnature/)

1 year ago

Reply

(/member/freak0vnature/)

could you add fans or turbines to this



**prince Rajesh** (/member/prince+Rajesh/)

2 years ago

Reply

(/member/prince+Rajesh/)

how do you ignite the fuel air mixture



**techno guy** (/member/techno+guy/)

4 years ago

Reply

(/member/techno+guy/)

Where can I buy a jet lighter that is cheap and durable?



**bluemetaknight** (/member/bluemetaknight/)

techno guy 2 years ago

Reply

(/member/bluemetaknight/)

Homedepot in the welding section for 3\$



**HVahead** (/member/HVahead/)

techno guy

4 years ago

Reply

(/member/HVahead/)

walgreens for 5



**MANinYOURhouse** (/member/MANinYOURhouse/)

techno guy

4 years ago

Reply

(/member/MANinYOURhouse/)

I bought one at a local gas station for around 10 bucks. Little reservoir though



**killerjackalope** (/member/killerjackalope/) (author)

techno guy

4 years ago

Reply

(/member/killerjackalope/)

The funny thing is dollar store ones have pretty much the same innards as more expensive ones - try to get one with a metal body as they tend to have less integrated parts inside.

For your nozzle question, this guy got it before I did...

<http://www.instructables.com/id/The-accidental-pocket-jet-engine-parts/>

On the other 'ible you asked about making a nozzle for a lighter - I doubt you'd get one to fit and work in a lighter unless you machined one just like a manufactured one...



**coonass** (/member/coonass/)

7 years ago

Reply

(/member/coonass/)

Hot DAMN! This is unreal! Ever tried putting this on a flat bed HO scale rail car, setting the whole thing on HO rail tracks and re-creating a rocket sled? Just curious. You should be able to put a micro scale of some sort in front of the assembly so the jet sled/rail car pushes against it and allows you to measure your thrust in ounces or grams. In fact, you could calibrate a system like this by cutting the explosive charge off of a model rocket engine, putting THAT on your rail car and measuring the thrust as I described - then comparing that to the rated thrust of the engine. That would give you a comparison. By measuring several different sizes of model rocket engine, you could work out a conversion factor to allow you to calculate the actual thrust

from the readings on your scale just by calculating ratios of real thrust to measured thrust. If you're serious, of course, you'd need to burn up several examples of each thrust level model rocket engine to reduce the impact of observational error and/or chance mishap on your calculations. Good work, dude!



**bluemetaknight (/member/bluemetaknight/)**

coonass 2 years ago

Reply

(/member/bluemetaknight/)

The jet here doesn't put out much thrust. Not even enough to move itself.



**pastaking (/member/pastaking/)**

coonass

4 years ago

Reply

(/member/pastaking/)

Or use model rockets specifically designed for cars - cutting off the explosive (recovery) charge prevents any thrust, if I remember rightly.



**geeklord (/member/geeklord/)**

coonass

6 years ago

Reply

(/member/geeklord/)

carefull what you do with the explosive charge out of a model rocket engine (specifically C6-3s and higher). Trust me, I would know that a 3rd degree burn all over the bottom of your hand hurts like hell, and takes really long to heal. Just a word of caution :)



**killerjackalope (/member/killerjackalope/)** (author)

coonass

7 years ago

Reply

(/member/killerjackalope/)

It's not quite at that stage but soon it will be...



**bluemetaknight (/member/bluemetaknight/)**

2 years ago

Reply

(/member/bluemetaknight/)

I built one of these out of some gas pipe fitting. And it was quite successful.



**ccopyrites1986 (/member/ccopyrites1986/)**

3 years ago

Reply

(/member/ccopyrites1986/)

I was thinking about using an old 30-06 bullet casing cut to size. might be thick enough to handle the heat better?



**The Coder (/member/The+Coder/)**

ccopyrites1986

3 years ago

Reply

(/member/The+Coder/)

I'd say a 30-30 round.



**Aron313 (/member/Aron313/)**

3 years ago

Reply

(/member/Aron313/)

Thats sick!! put it on a small plane!!!! or do what coonass said!!!!!!



**techno guy (/member/techno+guy/)**

4 years ago

Reply

(/member/techno+guy/)

How do you make a jet lighter nozzle?



**bio-logical (/member/bio-logical/)**

4 years ago

Reply

(/member/bio-logical/)

i can't seem to find any kind of tube in some of the devices you have said like a jet lighter or what not, so is it possible to find them in bar-be-que lighters?



**jbman840 (/member/jbman840/)**

4 years ago

Reply

(/member/jbman840/)

sorry for the spelling i have dislexeya  
your desine is interesting and prity cool i am going to make a jet engine useing  
and plasma torch you see plasma is som would say is the 4th state of matter  
and i will spin the plasma with magnetick felds and at the rite speed i will reles  
it and if all gos well it willl give a woping 66% afishinsee



**Ki1o (/member/Ki1o/)**

4 years ago

[Reply](#)

I wonder if it would be possible to make a mini afterburner to add thrust to it.

(/member/Ki1o/)



**Tobor 2.0 (/member/Tobor+2.0/)**

4 years ago

[Reply](#)

every try adjusting it so it creates more thrust

(/member/Tobor+2.0/)



**tzq33tdq (/member/tzq33tdq/)**

4 years ago

[Reply](#)

i've been wondering how to make a jet engine for some time now and i have finally found out how.

(/member/tzq33tdq/)



**killerjackalope (/member/killerjackalope/) (author)**

tzq33tdq

4 years ago

[Reply](#)

There are a lot of better options than this one, it's more or less just a model, no serious thrust...

(/member/killerjackalope/)

Pulse jets are a cheap way to start...



**115494 (/member/115494/)**

5 years ago

[Reply](#)

since you know how to make a jet engine i was wondering if you know how to make a mini gasoline engine because i am trying to make one. thanks.

(/member/115494/)



**killerjackalope (/member/killerjackalope/) (author)**

115494

5 years ago

[Reply](#)

Look at two stroke engines, the simplest type of piston engine if you're going to build one from scratch that's a good place to start.

(/member/killerjackalope/)



**fly\_boy\_bc (/member/fly\_boy\_bc/)**

5 years ago

[Reply](#)

Um... Jet engines have thrust. This is NOT a jet engine it is a camp stove or cigarette lighter. Suggestion :read read read. There ARE working jet engines AS SIMPLE AS THIS ONE but they actually produce thrust. No moving parts required. It's called a ram jet but I would reccomend a pulsejet since it has STATIC thrust.

(/member/fly\_boy\_bc/)



**For Better Or Worse (/member/For+Better+Or+Worse/)**

5 years ago

[Reply](#)

Why are the pictures not showing!!!!!! I'm trying to build one but I cannot see how you did yours.

(/member/For+Better+Or+Worse/)



**Pyro-crazy (/member/Pyro-crazy/)**

6 years ago

[Reply](#)

Here are the new nozzle pictures again. Do you think these will work?

(/member/Pyro-crazy/)



**Pyro-crazy (/member/Pyro-crazy/)**

Pyro-crazy

6 years ago

[Reply](#)

the images

(/member/Pyro-crazy/)



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**rug (/member/rug/)** Pyro-crazy

5 years ago

Reply

(/member/rug/)

how does those work if u could have a look and answer a questain i posted on how does a jet lighter work . thanks



**junits15 (/member/junits15/)** Pyro-crazy

6 years ago

Reply

(/member/junits15/)

if you jb weld a nut the size of the threads on the to the back it would make fo and easy removal, but it might eventually burn up and fall off, if you know how and have the tools you cloud weld it on



**killerjackalope (/member/killerjackalope/)** (author) Pyro-crazy

6 years ago

Reply

(/member/killerjackalope/)

Perfect looking one, looks just like the original ones I used. I can see the hole in the cross section, that's the one that needs to be outside the barrel with only the hole where the mixed gas and air comes out inside. Any objects you can find that stand the heat and make a good shape are game for experimentation, some people had luck with spent Co2 capsules by drilling holes in them - click view all comments and look at them for a few ideas.



**Mario1 (/member/Mario1/)**

6 years ago

Reply

(/member/Mario1/)

When is this "soon" going to be ???

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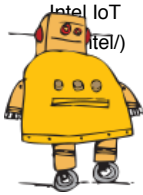
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