

Building a Smoke System for your airplane. A few tips.

The smoke oil injector is held into the exhaust pipe with a stainless steel hose clamp. The only requirement is that you use a slightly wider than normal clamp. I found them at a NAPA auto supply store and they may be a special order part. No problem because they can get them overnight. Just ask for them to look up “clamp hi torque”. Be very careful drilling the hole in these clamps, they can get away from you and chop off a finger.

Mounting the injector in your exhaust pipe. You will notice two small beveled edges on the injector. This is where your clamp should contact the injector. This aligns the spray pattern inside the exhaust pipe.

Inside the engine compartment I have had good luck with Aeroquip braided stainless steel hose with a Teflon liner. A local hydraulic hose company can put the ends on it for you.

Most tanks and pumps are mounted in a baggage area behind the pilots. If yours is mounted there, **DO NOT USE ¼ INCH HOSE FROM THE PUMP TO YOUR FIREWALL.** Firewall forward it is ok. The small hose creates a restriction and you will not get enough oil flow for good smoke.

Where you locate the smoke oil injector in your exhaust pipe is not critical. Common sense tells us that the longer the oil is inside a hot pipe the more time it has to burn. But do not interpret that as having to place it very, very near your cylinder head. Just put it in a easy to reach spot. Try to keep the oil inside the pipe for at least one foot, more would be better.

What kind of oil do you use for smoke. A very light weight oil such as the oil that builders use to spray on their concrete forms works well and you can get it in 5 gallon buckets. It is known as a **concrete form release agent**.

Aeroshell makes a very good oil simply called aircraft smoke oil but I think it is only available in 55 gallon drums. I may be wrong.

## **FOR ALMOST FREE SMOKE OIL :**

A good alternate is used automatic transmission fluid.

For used automatic transmission fluid be sure to filter it thru a spin-on oil filter or it will damage your pump or wear it out quickly but it is by far the least expensive oil. I have been using it for years with good results. I simply hooked an automotive oil filter to the hand pump on my 55 gallon drum and it works good. A 55 gallon drum of this costs less than a single 5 gallon bucket of the real stuff. But it really makes a mess if you spill it.

**Never, Never**, try diluting thicker oil with kerosene or diesel fuel to make it work. At some point you will add too much diesel fuel, now instead of a smoke system, you have just created a flamethrower. **It will set your airplane on fire.**

The pump and the smoke oil injectors are the heart of the system. Everything else is just plumbing.

Have fun....

For personalized help with your smoke system, call or email.

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