

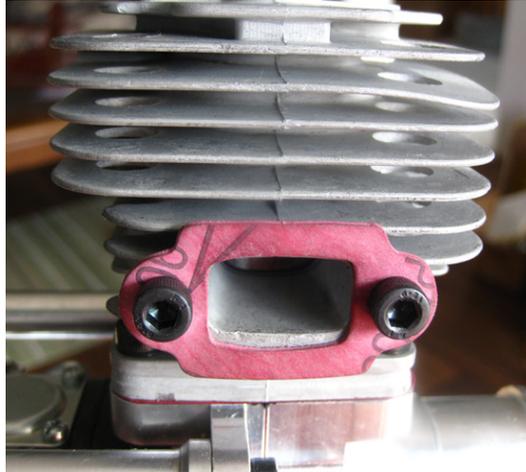
Preventing Loose Mufflers on RC Engines

by Henry Zwolak, RC Aero Products

Here is a simple update that most anyone can do to prevent their side mounted mufflers from getting loose and falling off your rc engine.

This situation has been reported to so often on-line and to the various sellers of engines (oh yes..... me included), that the easiest thing to do is show guys how to keep them on.

I am going to use the RC Aero 28cc engine as the example engine. The engine comes with a muffler and gasket as shown.



RC Aero 28cc with gasket and bolts on exhaust

The muffler bolts are 5mm x 12mm (this will vary between engine types). They are installed by putting them down through the muffler tubes. They lie against the muffler base plate which is the part that sides up against the engine exhaust. So a flyer will normally attach their muffler by installing the muffler with the gasket between the muffler and the engine exhaust.



Typical way of attaching a side muffler to engine

Hey, an astute flyer may even Loctite the muffler after attaching it. The picture shows you how it looks. Looks good doesn't it! No matter how much you tighten it down, eventually the muffler will

loosen, you will lose bolts and maybe even the muffler. And this will almost always happen at the most inopportune time.

So how does one make the muffler stay attached, and keep happy?

First off, let's go back to the beginning and work our way to forward again. Take the muffler off the engine. Take the gasket and bolts off too.



RC Aero 28cc Exhaust opening



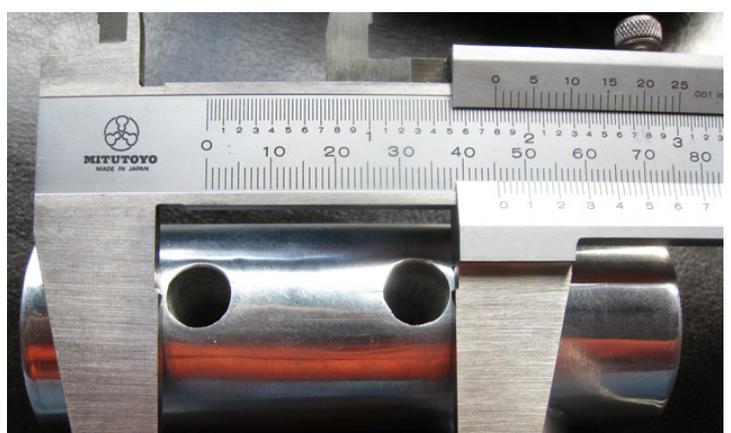
Original gasket and bolts (5mm x 12mm)

Put the bolts and gaskets away as you will not be needing them any longer.

Now go into your scrap bin, or a nice trip to the hardware store. Pick up a piece of steel bar - 3/4" wide x 1/8" thick x whatever length they sell the bar, usually 2 -3 feet long. You will not need a lot!



Steel bar - 3/4" wide x 1/8" thick x whatever length the store sells it at



Measure the distance between the two muffler bolt holes

Now get your muffler and measure the distance between the two bolt holes. Use the outer distance of the holes and add about 1/8" to each side.

Measure and mark this distance onto the steel bar and cut. Measure the center to center distance of the bolt holes and mark these onto the steel bar you just cut.

The muffler uses 5mm bolts. You will need to use a 1/4" drill. Drill the holes along the center line. Your steel bar should look like this when you are finished.



Steel bar - here is how it looks when you are done cutting and drilling.

This steel bar will fit across the top of the muffler. You will need to get some longer 5mm bolts. In the case of the RC Aero 28cc engine, the correct length is 55mm.

You are almost done.

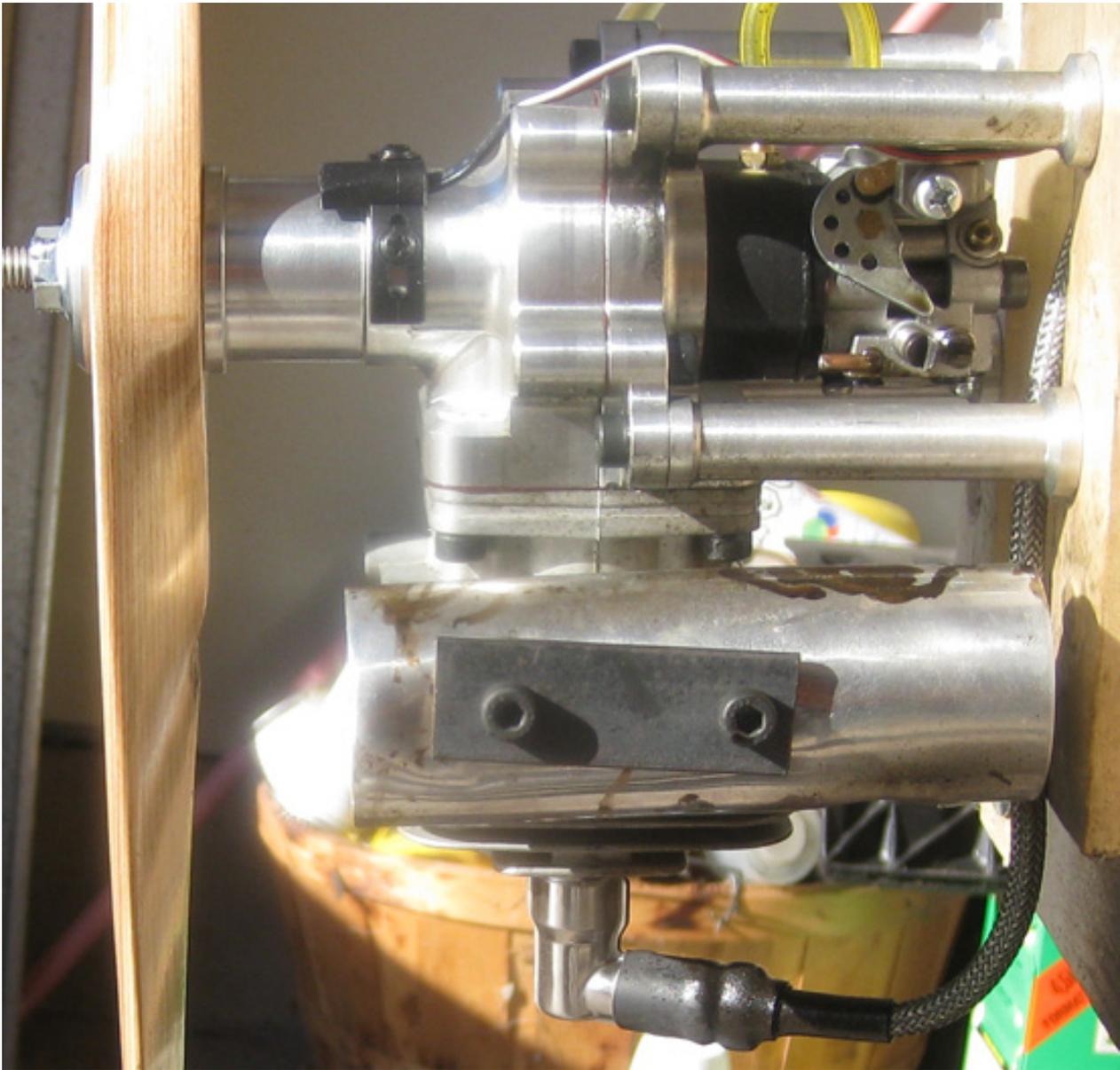
Apply liquid gasket to the exhaust opening. I use Permatex Aviation Form-A-Gasket, but any quality liquid gasket will do. Follow the instructions to apply.



Apply liquid gasket to the exhaust opening and muffler inlet

Put the bolts through the steel bar, through the muffler. Apply some Loctite to the thread ends. This is your insurance policy.

Install and tighten the bolts. Your finished product will look something like this.



The finished mod. This muffler will never get loose or fall off unexpectedly

The muffler bolt tubes are basically crush tubes. Once you tighten the bolts down, the steel plate is holding the outside of the muffler rigidly to the engine. This particular muffler has been on numerous engines (26cc and 28cc size) and probably has over 40 hours plus on it. Never a problem!

Do remember to once in a while check the muffler bolts though. This is common sense, and proper safety sense.