

Recent Remote Oil Filter Installation

I haven't designed a Tiger remote oil filter installation in many years. In that time, many of the hardware items I used in past installations have become obsolete or otherwise unobtainable. This new installation was a chance to update the hardware that is available and see how to make it work successfully on a Tiger.

The first basic piece needed is an adapter to fit the block that will clear most commonly available headers from Sunbeam Speciaties or CAT. The Canton 22-595 clears fine, and has 1/2NPT threads which accept a wide variety of AN plumbing hardware. I decided to start with that adapter. The next situation is the requirement to be able to create enough offset in the area in front of the Adapter to avoid interference with the Tiger steering shaft. This can be tricky, but in the photos you will see that with the proper pieces, that clearance can be created.

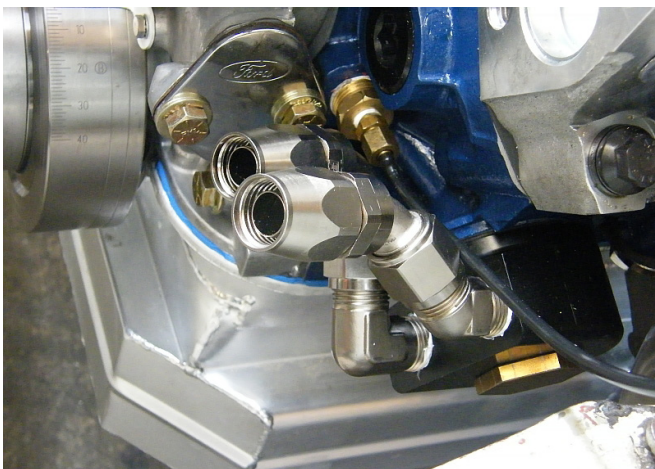


Figure 1 Here is a picture from the side showing the 45-45 and the 90-90 AN style fittings I used to create steering shaft clearance. Although the shaft is not shown, these offsets work just fine and the hoses end up in a very workable location to clear the shaft and fan shroud.

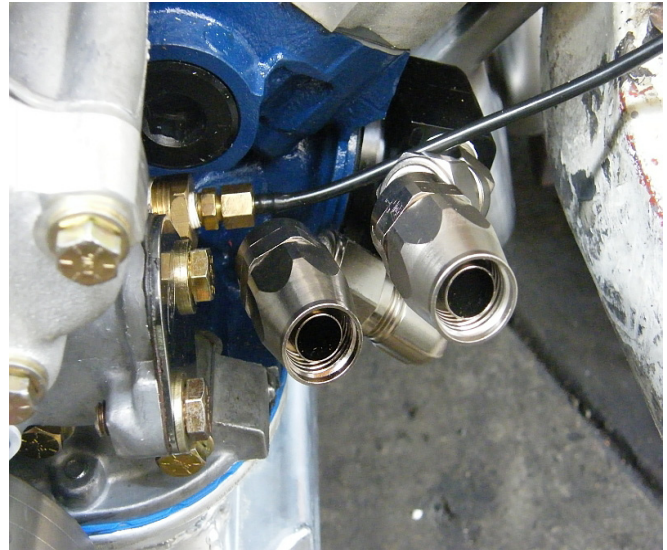


Figure 2 Here's a shot from the front that clearly shows the diagonal clearance produced with this combination of fittings.



Figure 3 Here's the general hose routing to the side of the engine compartment. All neat and out of the way.

The next area of concern is the Remote Filter mount itself, and how to locate and neatly attach it to the chassis.

ModTiger Engineering - Tech Tips

I choose to go with an old favorite of mine that is still available, Earl's 2178ERL billet adapter. It has a lot of things going for it including 1/2" NPT threads, and the strength that comes with the billet design and less worry about cracking a cast piece.

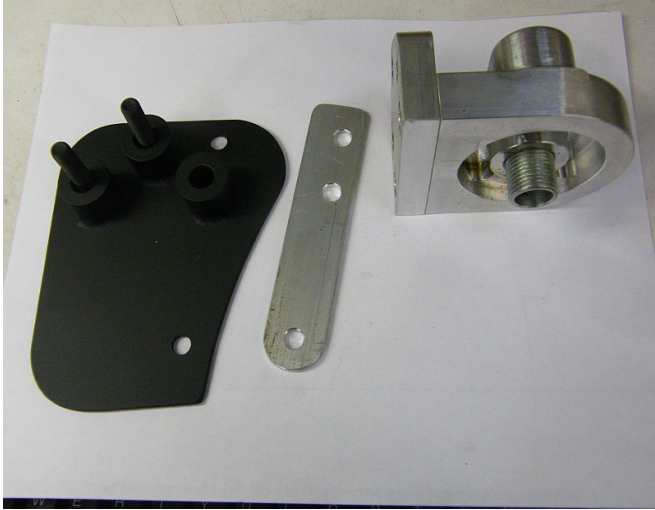
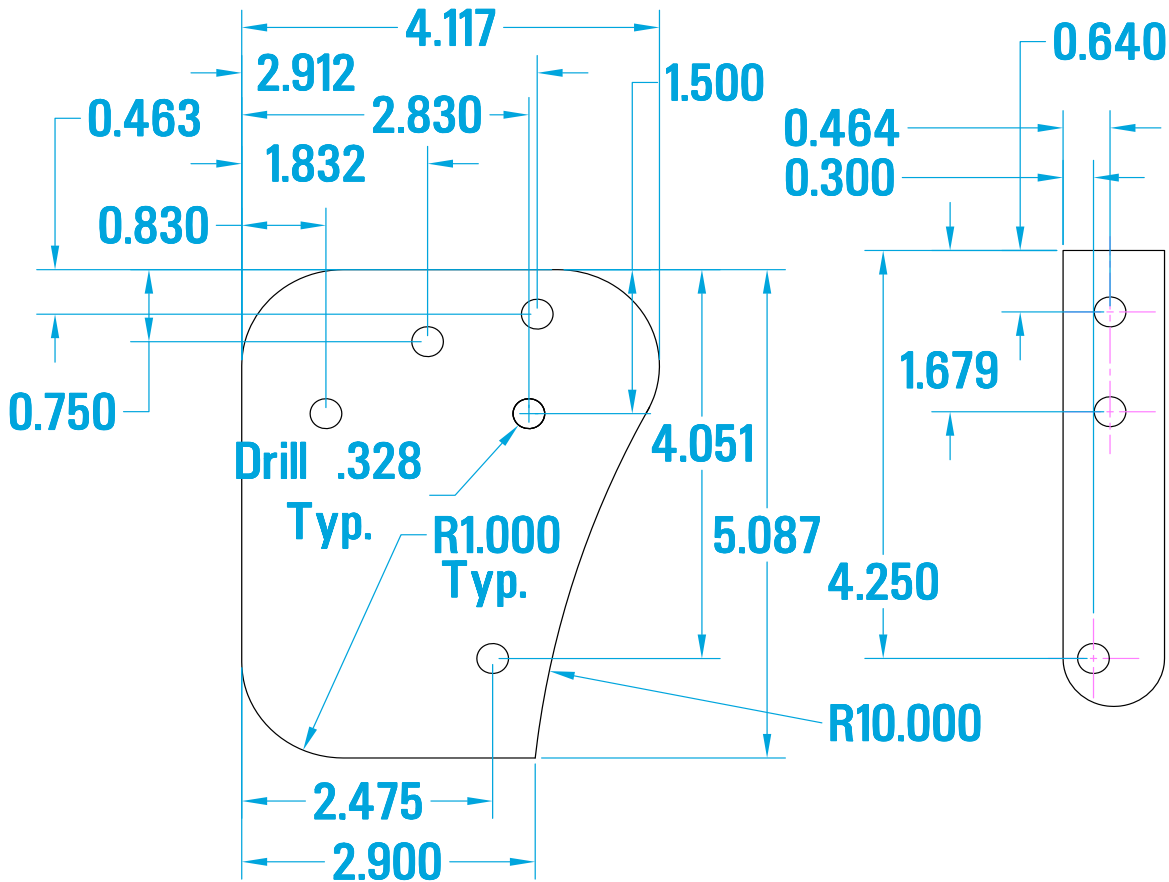
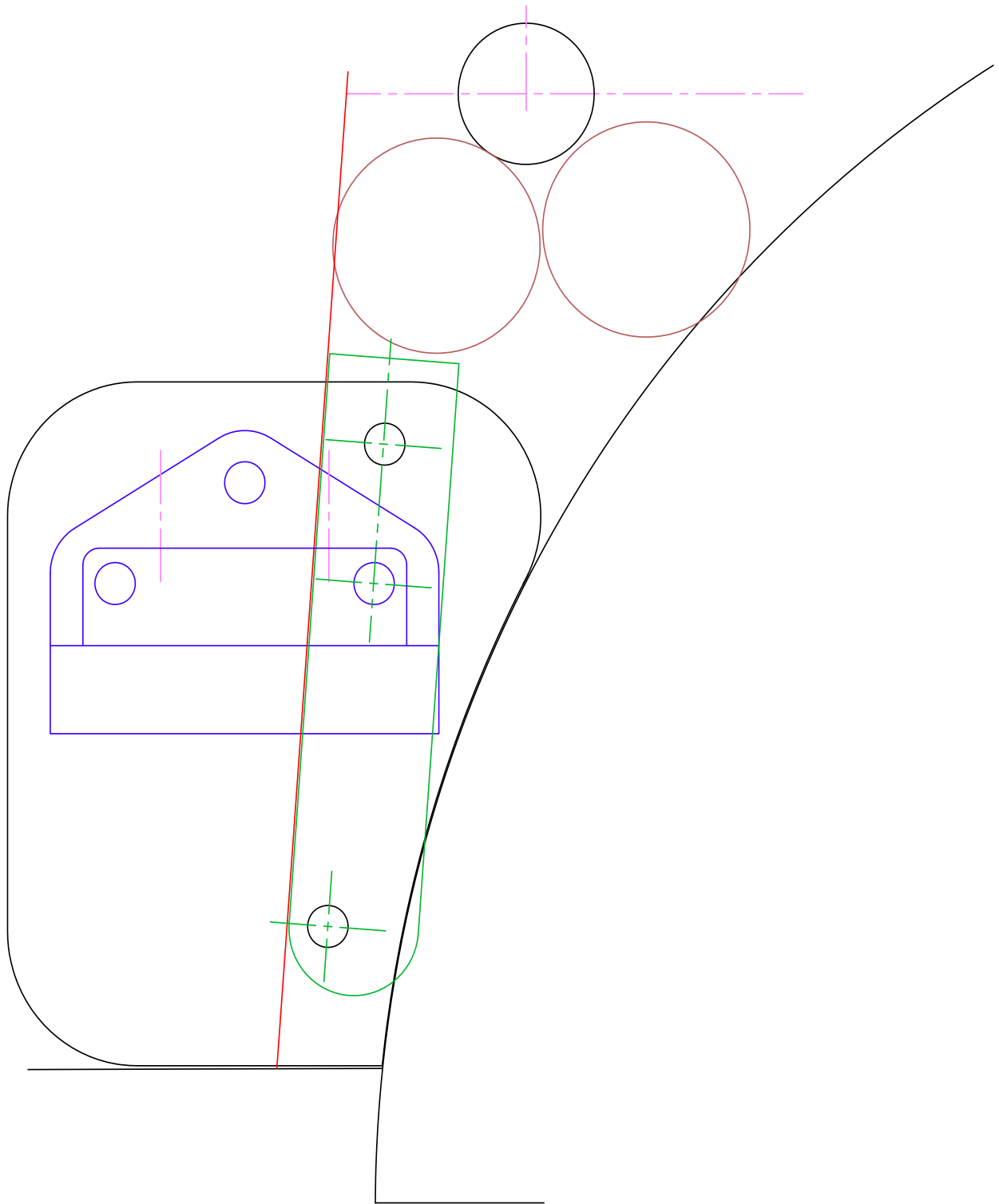


Figure 4 Here's a photo of the adapter and the mounting I designed to fit it to the inner fender well. An outside plate for stiffening, some standoffs and studs for mounting and side clearance, and an inside plate to spread the load across the side of the fender well.

The dimensions are shown on the sketch below. I used 1/8" steel for the mounting plate, standoff spacers are 3/4" high, and 5/16 studs for the two left side mounts. The top right side bolt goes through the internal stiffener and the body. In combination with the two lower bolts, the loading on the sheetmetal will be very low and should prevent cracking this metal. Just above this mount is the area I selected for the two hose penetrations. The hose holes are cut with a 1-1/4" hole saw and the bushings are McMaster #9307K83 (7/8 ID x 1-5/8 OD). The general locations are shown on the next page, but it's quicker to get the bushings and hold them below the electrical bushing and mark the centers for your best fit. Then you can drill them confident that they are in the proper locations.



ModTiger Engineering - Tech Tips

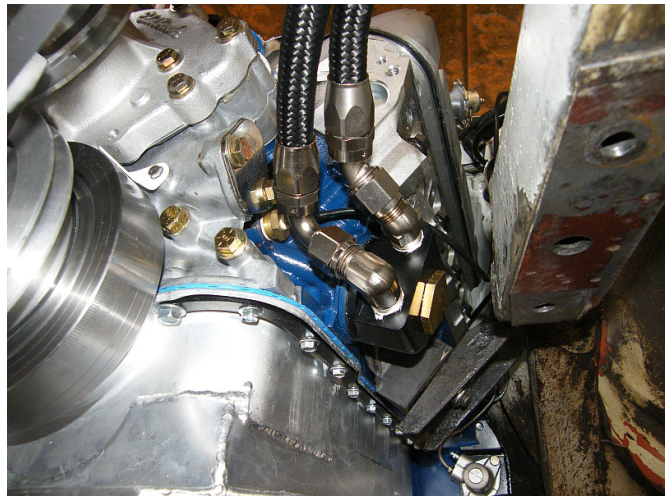


Here's the general layout in the fenderwell area. The red line is the radiator support metal. The black curved line on the right is the arch of the inner fender. The black filter mount should be made to the dimensions of the sketch and then sanded as required to fit your specific installation. Then you can drill the three mounting holes from the outside to the inside and it should all go together with the green inner stiffener.

ModTiger Engineering - Tech Tips



Figure 5 This is the side of the fender well after all the holes have been drilled. Now you can see why it's easier to hold the rubber bushings in place and mark the centers where you want the penetrations to go through the side. That way you can be sure that nothing gets in the way of having the hoses run through the bushings without overlapping or interference with other things in this area.



A parting shot from the bottom showing how nice the clearances are for the installation of the crossmember and steering shaft. This hardware doesn't come cheap, but the end product is worth the effort and cost, and makes this one of the cleaner installations I've done in quite a while.

Tom Hall
Modtiger Engineering LLC
modtiger@comcast.net

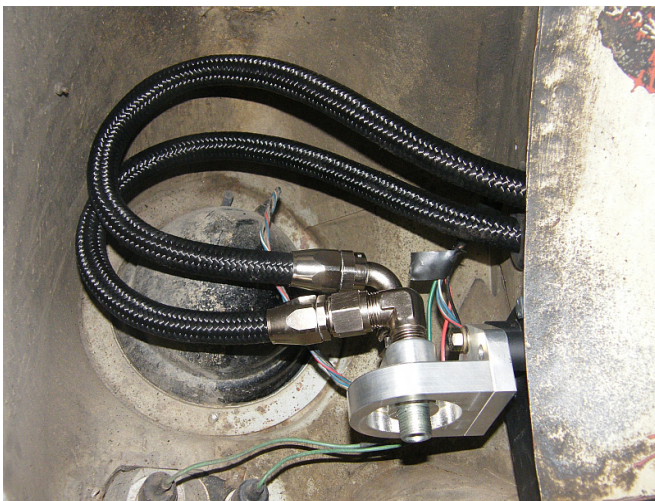


Figure 6 This is my best routing for the hoses with good curves and no kinking. Note here that it takes another set of 90-90 and 90-90 AN hose end and fittings to make these connections both smooth and non-reversible. You don't have to worry about connecting the "in" hose to the "out" fitting when you take it apart and reassemble because it just won't look right if you try to do it "wrong".