

Revised 6/8/23

# ***SXR tank and tail mounting instructions***

## ***Taillight wiring code***

Red=power. Yellow=brake light. Black=Ground

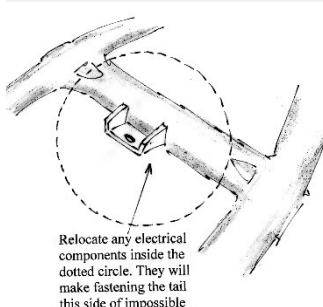
## ***Ethanol fuel-The SXR tank is not warranted in California, Washington and New York***

We have just starting using an exotic resin which is impervious to ethanol. No other company in the motorcycle tank industry even knows about it. I've believe ethanol is now a historical issue for my tanks. The three above states have some wild fuel that in the past has caused me fits. I will sell tanks in these states but until I know different, these three states are off the warranty list.

If ethanol fuel is available in your state-use it even its more expensive. If you live in these states, make a giant effort to track down sources of non-ethanol premium fuel. Some stations sell this fuel for vintage machines. You could check the availability of aviation fuel, maybe marine fuel or perhaps a racing fuel without ethanol. If you can't find such a fuel without ethanol, you could blend it 50/50 with your purist grade pump fuel to minimize tank problems. Evil ethanol just sitting dormant in your scooter for longish periods will totally screw up your engine with gummed up carbs and stuck lifters. Disassembly is the only cure.

**Do not use fuel additives** with Methylene Chloride ([Lucas Gas treatment](#)) or Mineral Spirits ([Marvel Mystery Oil](#).) If I see a tank with derogation from these chemicals-no warranty.

***I am resisting selling SXR kits for later 2002 and 2023 Sportsters***



I had a problem with a lovely Canadian customer who had fits trying to install my kit on a 2003. I am suspicious that the seat rails & cross piece on a 2003 are different than earlier models. For starters the cross piece is different and the Screaming Eagle electronic module may also be getting in the way. If you have another electrical module attached to the cross rail where my tail mounts it will not allow proper level tail mounting. Find a creative new place to mount the electrical stuff under the level of the seat rails and cross bar. I recently had a metal working customer who modified his frame by moving the module under the seat rails and some other futzing. If you are game, I'll send you a kit

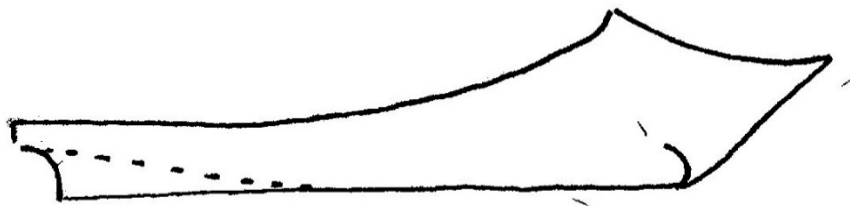
## ***Warning***

### **How to tear off your license plate, taillight and break your tail section**

- [ ] Use short stock length shocks (14.25 or 15" are best)
- [ ] Use spring weights not suited for your weight
- [ ] Hit huge pot holes
- [ ] Attempt to ride two-up

## ***WARNING***

Some parts I offer do not met DOT or SAE guidelines for safety. This is especially true of my fiberglass gas tanks. Metal tanks crush upon impact. Fiberglass can break and leak upon impact. This of course is a source of fire and a danger to you and others. By purchasing any of my tanks (and other non-compliant DOT and SAE parts) you are assuming the risks of; danger, injury and death. If you will not accept the risks, don't purchase my products or return them unaltered for a refund.



## ***New tail design***

Recently I redesigned my tail to add depth to the sides to cover more of the frame tubes. At the same time I ran the lower edge far forward so it better met the lines of my battery cover. If you don't like the abrupt jog you can simply grind the corner off to a look more pleasing to you. I shan't be offended

## ***Fitment on a pre-Evo frame***

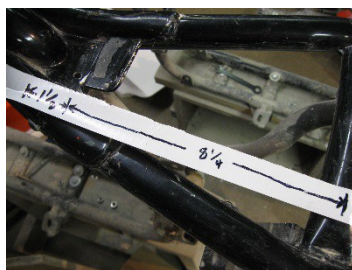
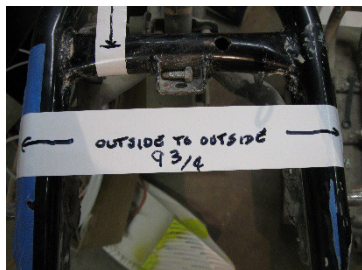
I'm not worried about the tank. The two holes in the backbone seem to be consistent over the years. I suspect they were used in the production conveyor system. The real issue is tail mounting. Near as I can figger my tail will fit Sportys back to 1980, models where the shocks attach to the very rear of the S-arm.



Tail slips under front tab

Tail bolts to tab on the cross tube

My tail is designed to fit the seat rails which are  $9\frac{3}{4}$ " wide outside to outside and the cross tube is  $8\frac{1}{4}$ " from front tab to center of cross tube. If your frame has these characteristics my stuff will fit. If not some craftsmanship will be needed to change your seat rails to Evo specs-or change the tail. I know on pre 1986 frames the tail has to widened by  $\frac{3}{4}$ ".



## ***SKR Tank mounting***



Little hands on the slotted mount brackets catch the tank studs

The tank mount straps bolt to the backbone. The frame center-to-center holes are 14 5/8. The tail gets mounted in a fixed place and the tank floats around it to butt up with the tail using slotted tank tabs. You may have to tweak your straps to get your tank to fit right. It's odd but there are slight variables in frames and some in my tanks as they hand assembled. The backbone mounting holes are a constant as are my mounting straps. None-the-less tweaking may be required on your part. This tweaking may include shimming the tank to level the tank with the tail. If you need to raise the back of the tank, shim rear mounts. Same goes for the front.

My tanks and tails are never the same. Glass thickness is the largest variable. Weld heights on the frame sometimes come into play

- [ ] Bend forward tab down to stabilize the tail or bend a corner down to tweak tail angle
- [ ] You may have to lift one side of the tail. Use rubber blocks glued with JB Weld etc.
- [ ] To lower or raise one side of tank shim the mounting studs with washers
- [ ] You may have to elongate the tank mount bracket holes to get more play in the tank's position

### ***R and SS model coils block tank fitting***

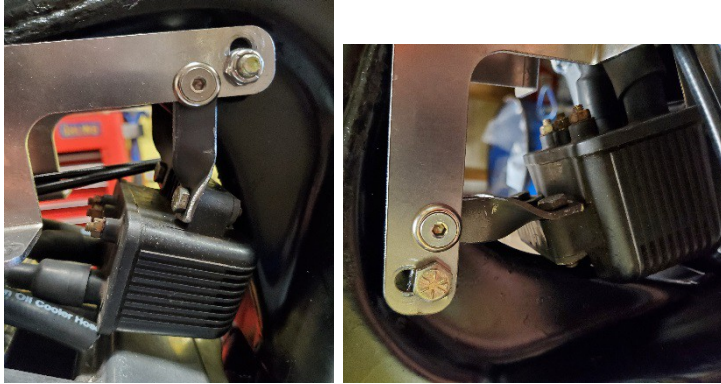
**R or SS model** coils have to be remounted to clear the front of the tank. Others have done this but not shared plans with me. It may require a new bracket or repositioning the original. Here's one man's approach. He made a dashboard on the left side for; coils, ignition and choke...



### **Clearance issues with your mag?**



Tracker builder, Roy Bienemann had a solution to move the mag away from the tank bottom. A couple of twisty brackets lowered the mag down without hitting the forward valve cover. I notice here he repositioned the forward tank bracket mount hole. Maybe his twisty brackets were too long and he adjusted for that. But you got the idea so this is his cheap solution



### ***SXR tail mounting***

Every tail I make varies in thickness and frame welds also vary. Sometimes the tail and the taillight can be slightly tilted. I try to eliminate this when I mount your tail on a frame I have in my shop. If your tail and the taillight are tilted just shim the offending part. It is wise to hammer down the front frame tab to kiss the tail. This offers more secure holding power. You can also affect tilt by pounding down just one side of this tab



The tail mounts simply. The front tab (blue painters tape) secures the tail front. Often you'll have to bend this tab up (for more clearance) or down to tighten the clamping power on the tail front. Notice the dropped area with the frame poking through. That is for a 1/4-20 screw-the only fastener that holds the tail in place

Ideally a floating tank and a locked down tail will result in a kiss fit between tank and tail.



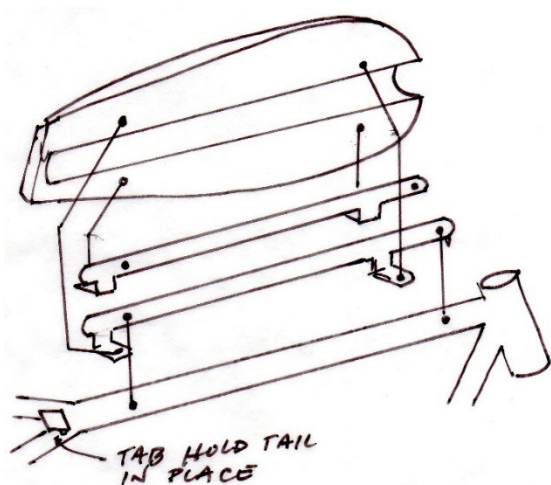
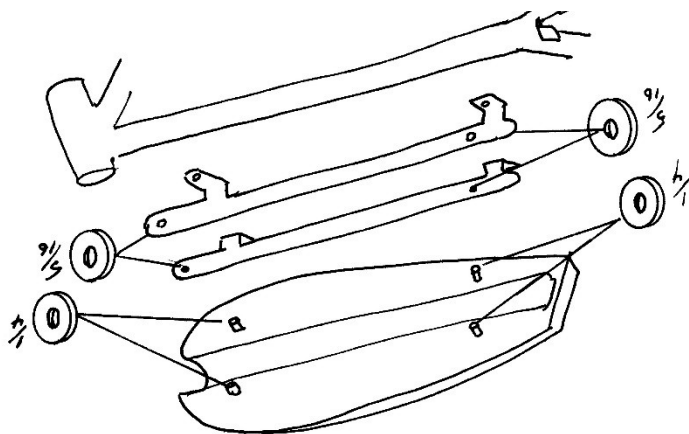
Here's the front tab and rear frame bracket on a 1994-2003 Sporty. You'll need to whack off about 7.5" of the set rails so the tail hides them



Close up of rear mounting tab. This is stock on Sportsters from 1980 to 2003. See my little 1/4-20 screw resting in the tab. I have this frame and another pre-1993 frame in my shop. Each body kit I sell gets mounted on one of the frames so I know the bodies will fit on my bike

### ***Cracking tank brackets***

Originally, my brackets cracked from vibration so we made thicker ones. That lessened the failure rate but every now and then, the issue reappears. I am now sending out 1/4" and 5/16" rubber washers placed as per drawing. That should help eliminate vibration cracking. If your set up doesn't have rubber washers get some from the hardware store.



### ***Tank mounting procedure,*** (this is the worst part)

The tail is in a fixed in position and the tank adjusts around the tail for a kiss fit. I have fitted your tank and tail on a frame to make sure of the tank/tail junction.

Your thankless task is to fiddle with the mounting to replicate my work-its not a fun job. While you are fiddling put my four Nyloc nuts aside and use regular  $\frac{1}{4}$ -20 nuts-it will speed things up. If the front of tail moves around take a rubber mallet and depress the forward tab down-the one just behind the tank.

1. Check the center-to-center span of the two holes in the backbone-they should be  $14 \frac{5}{8}$ ". For years this has been a constant with all Sportsters- pre 1993 and 1994 to 2003 frames. In 2014,

one customer reported his span was a ¼” longer. He did what you will have to do in this case-drill or elongate the bracket-to-frame holes. I cannot tell you which way to go on this because his example still stupefies me.

2. Mount the tank brackets along both sides of the backbone. You will have to demount the wiring cables so nothing gets between the bracket and backbone. Reconnect the wiring later. Use the long bolt in front and the shorter bolt in the rear. Now attach the brackets to the frame semi snugly-you do not want the tank to move involuntarily but only when you nudge it. Both brackets-to-frame and brackets-to-tank holes are slotted.

After you’ve snipped the tie wraps that hold the wiring to the back bone, you’ll want to mount the tank. You’ll have to spread the arms on the coil mounts so they fit on the outside of my bracket like this photo. If you mounted my bracket outside the coil mounts, the tank suds wouldn’t match up to the brackets



3. Mount the tank with four ¼-20 lock nuts/lock washers/flat washers. Again just snugly, so you can move tank forward/aft and up/down with a nudge.
4. Mount the tail fender and tighten the one mounting bolt (it will come off again so you can do the wiring). At this point move the tank around until it lines up with the tail. You may have to use flat washers as shims if the tank is low or cocked.
5. If the tail front has a tendency to move side-to-side I suggest dropping the forward tab (with a soft hammer) to put pressure on the front of the tail to trap it.
6. Once you have kiss fit, tighten brackets on frame (with Loctite) and remove tank to hook up fuel lines. Run the fuel line down the left of the backbone. Exit the tube on a line with the



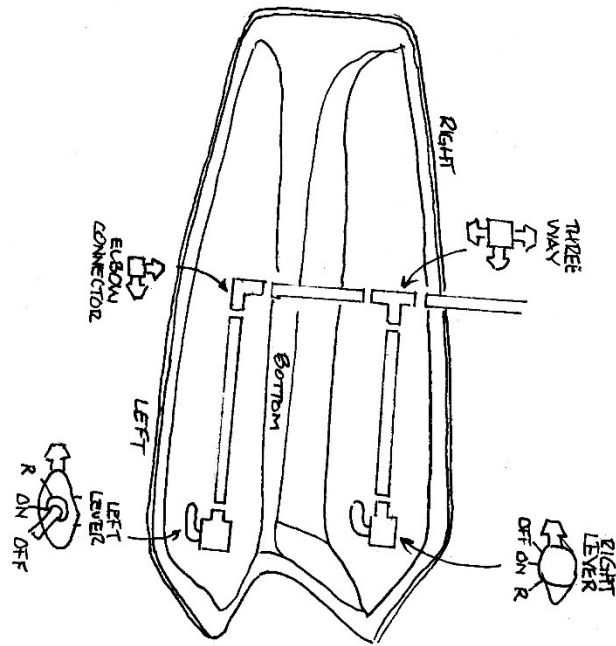
carb (which is between the cylinders) under the backbone. This way you can keep the lines and filter away from the hot valve covers. Do not forget a fuel filter.

7. Re-secure your wiring.
8. Position the tank over the frame and connect your fuel lines
9. Reinstall tank with Loctite on the four bolts. That's it. You should have a seamless tank-tail joint and you are ready to go. When removing the body pieces-it is easier if you remove the tail first.
10. I supplied 4 rubber washers to fit between the tank mount brackets and the frame to cushion the tank from vibration



### ***Attaching the seat cushion***

This is the easy part after you've installed the body parts. You can create your own Velcro pattern. Use available flat spaces you can. Deploy Velcro at the 'four corners' of your seat for max holding power. Start with either seat or tail and layout your pattern. Cut and apply a corresponding pattern on the other part. You will find your scissors all gummed up with adhesive when you are done. Lacquer thinner cleans scissors jiffy quick. You will be surprised at the holding power of 2" wide Velcro -it really sticks!



### Fuel line routing

Items needed;

- [ ] Gas line
- [ ] “L” ¼” fitting
- [ ] “T” ¼” fitting
- [ ] Line clamps
- [ ] Fuel filter-but keep it away from the hot engine



### ***Fuel line scheme and petcocks***

Over the years, I have used many petcock styles. Currently I am using this style. You’ll absolutely hate these petcocks. They are way up front and hard to reach. I did that to keep the

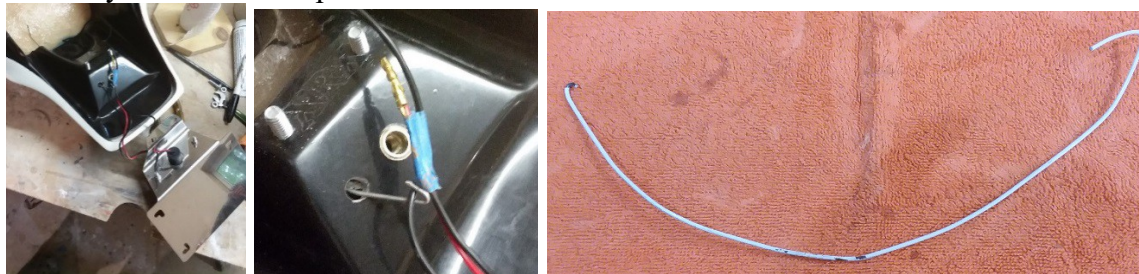
right one away from the front cylinder. The right lever is behind the petcock body and hard to reach. I could have placed the lever on the outside but then we'd have unsupported lined knocking about and maybe resting on the hot valve covers. You'll get used to it in time. The petcocks have a reserve built into them. Want another reserve? Easy. Fill the tank and turn on just the right petcock.

Fuel will drain from the top and one side of the center channel. When you run out, turn on the other petcock-you'll have a  $\frac{1}{3}$  to  $\frac{1}{4}$ <sub>th</sub> fuel left.

**ALWAYS USE AN INLINE FUEL FILTER** to trap particulates. Keep an eye on the filter and change it if/when junk occurs. Keep filter(s) away from hot engine parts

### ***Attaching the taillight/license plate mount***

If you need to remove taillight assembly, this is how you re-snake the wires back through the hole. Make a wire hook like the one on the right. Snake the little hook into the front side of the support plate. Sneak it through the hole and attach to the wires. It helps if the wire ends are taped. Pull through hole with tension on the wires and your puller otherwise the wires will fall off and you'll have to repeat



I still have metal license plate holders which I'll use up. When they are gone I will start making my own licence plate holdes from carbon fiber which is cheaper than my old metal plates. My old plates had 'L' shaped holes for mounting license plates for various states with diffening sized plates. I will send carbon fiber plates without predrilled holes. Just tape or clamp lense plate to the holder and drill four  $\frac{1}{4}$ " holes for your plate. From hardware store buy four  $\frac{1}{2}$ " long,  $\frac{1}{4}$ -20 screws and

four 1/4-20 chrome castel nuts-if I did not send them. Insert the screws from behind so castle nuts show outside. Use blue Loctite or split washers in the mix



***New tank cap***

I may be getting older because I had a hard time twisting my old round caps on. I now include these and they are easy

Thanks Phil Little Phil Little Racing.com Cell 952-607-6063