Revised 8/6/19. Print this out for later reference

**SX R tank and tall mounting instructions**

**Taillight wiring code**
- Black = Ground
- Yellow or brown = Taillight
- Red = Brake light

**Ethanol fuel**

**The SX R tank is not warranted in California, Washington and New York**

Prior to 10/1/18 we progressively used three different coating systems to protect tanks from ethanol fuel. Largely we were successful but we’re getting repetitive issues from three states; California, Washington and New York. Ironically, these liberal states are requiring some wicked fuel. Every time we would make a coating change, it seemed like these states kept reformulating their fuel.

We have now starting using Phenol Novolac Epoxy. This is a 2-part coating that we hope will end the issue. It came highly recommended by Jeff Pancer who sells Norton glass tanks. I believe ethanol is a historical issue for us but until I know different the above three states are off the warranty list. If you live in these states, make a giant effort to track down sources of non-ethanol premium fuel. 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. For practical purposes, if you find such a fuel (without ethanol), you could blend it 50/50 with your purist grade pump fuel and minimize tank problems. Junk ethanol gas 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.

**Notice**

If you have an 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.

**Warning**

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

[ ] Easy, 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 meet 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.

**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 1986, models where the shocks attach to the very rear of the S-arm.
My tail is designed to fit the seat rails which are 9 ¾” wide outside to outside and the cross tube is 8 ¼” 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 ¾”.

**SXR Tank mounting**

Little hands on the slotted mount brackets catch the tank studs

The tank mount straps bolt through 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...

**SXR tail mounting**

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 ¼-20 screw—the only fastener.

Ideally a floating tank and a locked down tail will result in a kiss fit between tank and tail.
that holds the tail in place

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 ¼-20 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

**Tanks mounting procedure**, (this is the worst part)

**A race failure**
Today 9/3/19, I got an email from Dan Mischler, National Hooligan racing champion. He showed me a photo of a broken stud in my SXR tank which he uses on his race bike. The
mount studs are ¼-20 elevator bolts. This has never happened to any of my customers in 10 years of making this tank. If something is going to go bad-racing will do it. Today I have ordered metal bonded sealing washers and will install them above and below the mounting straps which mount to the four studs. These rubber washers are bonded to stainless metal washers. The rubber reduces vibration and the steel portion adds strength so the rubber doesn’t squish around. Hopefully this is the fix. It will be SOP from now on

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 ¼-20 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 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. I suspect 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.

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. Cross the lines 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.

**Fuel line routing**

Items needed;

[ ] Gas line
[ ] “L” ¼” fitting
[ ] “T” ¼” fitting
[ ] Line clamps
[ ] Fuel filter
**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!

**Warning -filters**

**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

**Petcocks**

Dapco Gold

Over the years I have used many petcock styles but I’ve come back to Dapco’s Gold threaded petcocks (1/4 NPT). The gold is their latest model-don’t use their silver ones. They work perfectly fine but they have one draw back. The seal inside the petcock body depends on fuel for lubrication. If you let the bike sit for a length of time the seal dries out. Then when you turn the lever the seal sticks and gets out of place. **The only solution is that you have to pull the tank in the fall and spring.** You must put a bunch of drops of oil down the spigot then turn the lever to work the oil around the seal. I use three-in-one oil. Now if you **don’t do this and the seal goes bad I won’t warranty them.** You’ll have to buy a pair from Ebay. Sorry to put this to you like that but if I had better options-I’d be using them on your behalf.

**Petcock On-Off**

Turn the lever straight down that is open. Turn to 90° for off. **Want a reserve feature?** Easy. Fill the tank and turn on one 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 1/3 to 1/4th fuel left.

**Tank cap warning**

The cap seals fuel two ways. Cork gasket presses on filler neck and there is a spring-loaded check-valve under the cap. The check valve closes when a fuel surge is detected by the floating ball valve. If you fill your tank completely full the cap can weep fuel onto your stickers and paint because the ball doesn’t close when fuel sloshes latterly (side-to-side). The upshot is, One) don’t fill your tank to the very top or, Two) epoxy a 1/2” length of aluminum pipe over the valve surround. Drill two tiny 1/16” holes in the sides of this short pipe. This remedy stops fuel weeping from sloshing even with a full tank. I had a customer who parked his bike with a full tank and it leaked and lifted his stickers. I don’t know whether this extension will cure that but a less than full tank will. Use 2 ton epoxy—that stuff is strong but requires curing overnight.

![Tank cap warning diagram]

**Fuel cap aside**

Between us girls, I hate the Stant caps I use on my tanks. I don’t like the style. I prefer the old smooth chrome ones but they’re not made anymore. Jeff Smith from Northern Ireland says a cap for Austin, MGB, MG and Mini Cooper (UK) will fit perfectly and they are totally round and shiny. You can get them on Ebay for about ten bucks. They look much better.

Thanks Phil Little  
Phil Little Racing.com  
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