

Installation of Sprint ST Pannier Rails

Contributed by Daniel Hienzsch
Friday, 08 June 2007
Last Updated Friday, 09 January 2009

Obtaining the Pannier Rails (the racks the hard case luggage installs on) for my 2000 Triumph Sprint ST was quite an ordeal. I purchased the rails and cases on eBay and had them shipped, only to discover that nearly all the mounting brackets and hardware was missing. The owner had wrecked his bike and just took the main rails off the bike thinking that the mounting and strengthening brackets came with the bike from the factory. Well... they don't.

Actually, obtaining the brackets and hardware involved placing a \$300 parts order with his dealer. Because of all the confusion, the seller on eBay agreed to split the unexpected extra cost with me 50/50. I had actually planned to do the installation about a week before heading on my first trip to Yosemite on the Sprint ST, but the difficulty in assembling all the stuff meant that I was actually doing the install the two days before.

I had all the parts laid out and read through the instructions over and over and over again. Something didn't gel quite right. There were a lot of things that were supposed to be mounted to the mud guard. I didn't have one. The guy I bought the bike from (again on eBay) had hacksawed the thing off for a more sleek appearance (rather than purchasing an after market under tail and reserving the mud guard for an occasion such as, I don't know, NEEDING IT.) So now, the day before I leave for a tour that will be in excess of 1,000 miles, I had to run around and try to find a machinist that could make the rails work with my bike.

I finally went by Elco Welding and Engineering in Venice, CA and went about having him build some heavy duty spacing blocks that would allow the tail end of the mounting rails to actually fit onto the bike. There is a strengthening bracket that is supposed to go behind the license plate, and I don't have any meat left under there to mount that bracket to, so the custom solution was the right one.

I want to digress for a moment to talk about how much I enjoy watching a machinist at work. This guy took block of aluminum he had "laying around", a block that you and I would only have been able to use as a paperweight, and over the course of the next hour, painstakingly turned and milled it down to the odd composite-angled spacer that I use to this day. Watching him work the three hand wheels on his milling machine was seeing an artist in his element. Two wheels to move the cutting head forward - back and left - right and another to move it up and down. He moved the cutting head fluidly in three dimensions, manually, eyeballing it the entire way for the initial fabrication. CNC is cool... this was beautiful. The first pass through the milling machine produced a block that was very nearly the correct shape, the rest of the hour was spent fine tuning to ensure the lowest possible amount of play and distortion of the rail. From the milling machine, out into the rain to hold it to the bike and use his grease pencil to mark it down some more... back inside to the mill, back into the rain... back and forth without a complaint (or a word really) until he had it ready to be tapped for bolts. Perfect. (or almost, since I was on the bike at the time, all I could take with me was the unmounted rail. It wasn't until I got home that afternoon and had everything mounted that a sharp edge on the aluminum prevented the cases from sliding down the rails like they were supposed to. A few minutes furious filing resolved that though).

That wasn't the only bit of difference between a standard install and mine. I have a Two Brothers Racing exhaust installed in a high mount that really shows off the single-sided-swing-arm and chromed rear wheel. Well, that exhaust needs to be lowered so that it will pass under the right hand hard case. I had all the hardware for that but no instructions, so it was up to me to figure out how to make that jigsaw fit together without a picture. I only found one copy of the mounting instructions for the cases online and one text document describing how another guy managed to do it. So I'll get to the point now and do a little show and tell on how I mount mine up. Mind you, I'm going to skip the installation of all the mounting plates, the repositioning of the rear seat lock, and the installation of the side stand lifting handle. Why might you ask? Because I don't recall how I installed them... just that I did :)

Remember, this is specific to my bike and I have the Two Brothers Racing exhaust system... your method of installation will almost certainly be different. This will at least be interesting reading :) Before you start, take off the rear fairing completely; you have to get at bolts that are hidden behind it.

First I have to drop my silencer into the low mount configuration. This picture will give you a good view of what the muffler looks like in its normal high mount position. This is a somewhat straight forward process now that I have clear pictures that show which hardware to use and what position to put the offset bracket in. First I get under the bike and loosen the pipe clamp that holds what I call the Exhaust Tube to the exhaust manifold. Then I loosen up the hardware that mounts the offset bracket under the tail of the bike's body. Once everything is loose to the point where I can undo things with my fingers, I wrap a red-rag around the main part of the silencer and hold it steady while undoing the bolt... just in case everything's already really loose, I don't want to drop my \$300 titanium exhaust on the ground! Normally though, that connection between the tube and the manifold is really grungy and sooty so it takes a little twisting and shouting to get it to come loose. Twist and wiggle it... DO NOT bend it or you could go crimping the exhaust manifold and then you'll be very, very sorry.

So now you're standing there with a muffler in your hands... now what. Grab a can of your favorite lube and squirt it up under where the tube goes into the manifold. A little goes a long way so don't irrigate it, just lubricate it. You'll want to wait a couple of minutes afterwards to allow capillary action to carry the lubricant between the two pieces. If you have a rubber mallet, now would be a good time to retrieve it.

Take off the little spring clips and keep them safe. If you have someone else there to hold the muffler that's probably better, but if not, this can still be done, just more awkward. Hold the muffler steady (either your helper or clamped between your whithers) and twist that exhaust tube while trying to pull it out simultaneously. You will almost instantly notice that you are trying to maintain a solid grip on a piece of lubricated, chromed, steel. Yeah... good luck with that. I haven't found a real solution beyond holding tighter and cursing harder. Eventually though, it does come loose (just like when the tube was connected to the manifold). Take that rubber mallet if you have to, and give the rear face of the muffler a couple of love taps to encourage it in your efforts. Not too hard, you want to encourage, not punish. I punished and wound up breaking one of those spring clip eyelets right off. Once it all comes apart, take a red rag and clean all the oil you used off of the pieces, make sure to wipe nice and clean around the inside of the end of the muffler... probably best not to leave too much of that stuff in there when the hot fumes start flowing again.

The trick now is figuring out what angle to use for that stubby exhaust tube. It's obvious which end goes where because it has the loops on one end to hold the spring clips. But how, exactly does that thing get positioned. Apparently, the answer to that, is trial and error. You have to get the tube into the manifold, the muffler clamp against the offset bracket, the offset bracket against the inside of the passenger foot peg and make sure that once all of that is done, that none of this is actually touching the rear wheel.

Using those pictures as a guide, you can generally get an idea of how to work it into position. It is supposed to point down and in from the bike (duh). Get it into the position, or at least as close as you can get it, and then slide the pipe clamp over the end of the exhaust tube. The tube fits OVER the manifold so it seems to be helpful to shove the pipe clamp there rather than down on the manifold. You will see that the tube has three "tabs" of a fashion on the end (you'll see what I mean in the pictures just above). These afford you the ability to very gently bend the tabs when you are trying to put the tube on the manifold. (here comes an awful description) Try pressing the bottom two tabs against the manifold from below so that you think "they must be bending a weency bit". You do NOT want to actually see them bend, that's too much force. Then, at the "weency" level of bending, push in and up to slip the top tab over the lip of the manifold. (You know... it's such a finesse thing, you would think I'd have pictures of it. You'd be wrong though.) Now that the tube is over the manifold, make sure it's all the way down on it. You should be able to let go of the muffler and leave it hanging there. Don't leave it like that though. That joint isn't meant to bear weight, just be enough to prevent loss of combustion

gasses. The weight is born entirely by the offset bracket that holds the muffler clamp to the passenger foot peg. Assemble the jigsaw puzzle as illustrated on the previous page, noting that you now flip the offset bracket from it's original position. It normally holds the silencer away from the bike, now it's holding it inline with the bike.

Once you get all the hardware finger tight and you have quintuple checked that nothing is touching the rear wheel, begin tightening everything down, starting with the pipe clamp. You'll want a really long extension on your socket to do that, probably on the order of 8 to 12 inches to save your fingers. Then tighten the bolts holding the bracket to the footpeg. Finally, make sure that the exhaust clamp is positioned correctly around the oval of the muffler and tighten that down. Congratulations, you just made your motorcycle 10 times less attractive! Next section... mounting the rails...

Getting the rails on is somewhat tricky. They go outside the frame of the bike, outside the strengthening bracket, but inside the passenger foot pegs. So, where to when three things have to align all at once. Well, I start in the middle. I get the center of the pannier rail loosely fitted against the frame of the bike using the bolts. A nice place to get the bolts to is just as the nylon of the nylock starts to bite. Stop there and you'll have plenty of play to work with.

Now move to the passenger foot peg. There are two tiny bolts that mount the rail to the inside of the foot peg and they take a 5/16" socket. The rest of the bike is metric... and these are 5/16" bolts. I am at a loss. Anyway, with the center nice and loose, it shouldn't be too hard to line everything up. Probably hard... but not too hard. Again, make sure that they are attached loosely so that you can move the rail in and out along the threads a little. Be careful not to get too crazy with moving the rail or you might grind the threads a little and that would be bad... but hey, this thing is made out of metal so go ahead and manhandle it a little if you have to.

Now go back to the end of the bike and have a look at the situation. Chances are, your bolt holes aren't lined up with where the bolts are supposed to pass. In my case I only have to through the strengthening bracket into the spacing block, but I think the OEM brackets are even more complicated. I firmly believe that the only way to get this to work and line up is brute force. Remember, be careful of the loose threads at teh other two mounting points, but to get these to line up, grab a nice strong screw driver and jam it into the hole and drag that SOB around until you can hold it in position and get a bolt started on it.

Once you've got that started, make sure you can get all the bolts finger tight then in the same order you started in, tighten everything down to their torque values. Be very careful with the bolts that go into the foot peg. The foot peg is aluminum and could very well strip out. For me, I had the machinist use a very strong alloy so that it would accept a fair amount of torque, but don't sit on the wrench. This stuff needs to be tight, but not crazy tight.

When its' all done though, you have the satisfaction of sitting back, looking at it... and realizing that you now get to turn the bike around and do the other side!