

Recalibrate Your ST1100 Fuel Gauge

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To make the light come on at a more reasonable amount of fuel remaining:

1. Drain the tank.
2. Disconnect the wires to the fuel pump and warning light (top of tank) and the wire to the sender (left side of tank about 1/2 way down).
3. Disconnect fuel cap breather hose, fuel line at the filter.
4. Remove the four bolts holding the tank in from the top.
5. Lift out the tank by sliding toward the rear while lifting (if you have trouble, loosen the air cleaner, but we removed the tank on both of our, 93 & 94, STs without doing this)
6. With the tank out of the bike you can remove both the fuel pump and light sensor from the top, and the fuel gauge sender from the left side.
7. Actually, you can remove the warning light sensor without pulling the tank, but you must pull the tank to get at the fuel gauge sender on the side. The STock fuel gauge on our STs was very inaccurate from the factory. The gauge stayed on full, without moving for 100 miles. It then descended fairly linearly until it touched the bottom peg on the gauge where it still had about 50 miles before actually being empty of fuel.
8. To change the low fuel sensor so that it comes on with .8 gal remaining (instead of STock 1.4 gal), remove the small philips screw holding the sensor to the fuel pump mounting bracket. Drill a small hole, the same diameter as the STock mounting hole, 1/2" farther down the mount than the

STock hole. Then remount the sensor at this new location, and your low fuel light will now

indicate when you have 30-40 miles left (in our case....YMMV ;-}

Now the real reason to go to all of this trouble in the first place...to

adjust the gauge sender so that you fuel gauge more accurately represents what fuel is actually in the tank:

10. When you remove the sender from the left side of the tank, you will see a

float on the end of a long piece of bent metal rod.

11. The idea is to "adjust" this rod so that the float will travel the full distance from the top of the tank to the bottom. In our case, the STock float

stopped before touching the top or the bottom of the tank.

12. There are limit tangs on the sender itself that keep the rod from traveling the full distance necessary top to bottom of the tank.

13. By bending the tangs and the rod you will be able to fine tune the sender

so the gauge will indicate, in a linear fashion, the true level of the fuel

tank while the fuel is between the top and the bottom of the tank.

14. Here's the "catch"...you will see when you have the tank out, that it is

not linear in shape from top to bottom. IOW, there is no way to get the gauge

sender to travel up into the "top stack" area or the "sump" area on the bottom

of the tank. So your gauge will still rest on the top peg until the fuel drops

to the bottom of the "top stack" where the sender float can read it (.85 gal or

appx 30 miles in our case). Also when the fuel reaches the bottom of the tank,

and the float bottoms out, the gauge will rest on the bottom peg and there is

still .8 gal of fuel in the sump (where the fuel pump lives). I've never run

totally out of fuel (I've added 7.5 gal at the "pump" on 1 or 2 instances 8>0 ,

but I filled the tank after this mod using a graduated beaker. Here are the

results of my measurements as I added fuel to the TOTALLY DRY tank with the "modified" gauge and light:

.8 gal..... gauge on bottom peg...light first on steady
1.5 gal..... gauge on red mark...light first starts to flicker
2.0 galgauge at bottom white mark
6.4 galgauge at top white mark
6.9 galgauge on top peg
7.5 gal.....fuel at bottom of fill tube
7.75 gal.....fuel at very top of fill tube (my tube is modified to allow easily doing this if I desire)

I have done over 40,000 miles on my bike since I did this mod and have had no problems with the gauge or sender due to its wider range of travel, YMMV of course. Also, this mod requires handling flammable liquid and carelessness could result in you and your beloved ST catching fire. If you are uncomfortable with this fuggedda 'bout it