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REF: Carburetor, Intake Manifold & Exhaust - Sub-01P

Testing an S&S Intake Manifold Spacer

Article by biknut of the XLFORUM ¹⁾

The purpose of this was to evaluate what effect if any, a 1" manifold spacer has on performance in 2 areas;

Horsepower and piston ping.

The carburetor in this case is an S&S Super E.

It's been said you can control or influence flat spots (caused by reversion) in your power band by changing your intake runner length.

This theory was put that theory to the test. There were two expectations.

1. Stop the pinging.
2. Improve the mid range performance.

In my recent tuning experience with the newest exhaust system I have;

It has shown that I have a big honking zone of reversion starting about 3100 rpm lasting to about 3900.

With extensive modification to the carburetor and jetting, arrived at by very thorough testing;

I've succeeded in minimizing it to the point that the flat spot is now hardly noticeable.

There is however still a slight problem with light pinging about 3700-3800 rpm accelerating in top gear on partial throttle (3/4).

It doesn't show up under full throttle acceleration.

I've already tried different jetting and timing in an effort to get rid of it, but it always results in lost performance.

My conclusion is that the jetting and timing is as good as it gets, and reversion is the cause of the pinging.

I'm pretty sure if I baffle up the exhaust to stop the reversion it will also result in loss of power on the top end.

So that brings us to the intake side of the equation.

Most of the evidence, that changing the intake runner length will help with this problem, comes from the automotive world.

I have found scant little information about the effects this will have on a motorcycles performance.

So we're operating in basically unknown mostly territory here.

Manifold Spacer Blocks:

This is one reference from the ThunderJet tuning instructions provided by Zippers:

When tuning a long stroke engine, increasing runner (manifold) length may help control fuel stand-off and improve low- and mid-range carburetion.

Different cams, exhausts, strokes and other changes will affect this area dramatically.

If you are a serious tuner, we suggest you purchase spacers and insulator blocks and experiment with them in your applications. http://www.zippersperformance.com/do...nst_101508.pdf

I've found a lot of places that sell intake spacers for Super E's, but when you ask them any questions about what they do you mostly get a big zero.

The Spacer I have was purchased on eBay for \$16. It came with a V-Twin Manufacturing label, and it's 1" wide.

The seller advertised that it was to extend the carb farther out from the bike to clear over sized gas tanks.

It does fit the Super E manifold.

Results of testing;

The effect on piston ping was noticeably positive. Compared to before the spacer was installed it's very difficult to make it ping now.

Not quite impossible, but there was a very noticeable positive effect. Most stock bikes ping easier.

[You can read more about the testing here:](#)

[More testing by biknut:](#)

[O2 Meter Carb Tuning.](#)

[S&S Jet Testing.](#)

[How to install a AFR meter.](#)

[How to install a KOSO Power meter.](#)

[Installing a ThunderJet® on a Super E.](#)



You have to space out the air cleaner back plate with longer bolts to install it.



4)



5)



6)

This is how far the carb sticks out with the spacer installed.



7)

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photo by biknut of the XLFORUM

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