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# EVO: Carburetor, Intake Manifold & Exhaust - Sub-06F

## To Drill or Not to Drill the Keihin CV Carb Vacuum Slide Hole

Do not attempt to drill the slide. That usually causes more problems than it is worth. Put in a lighter spring if you want a faster response. <sup>1)</sup>

One of the main advantages of the CV carb is it avoids problems with the slide opening too quickly and starving the engine for fuel.

Drilling the vacuum slide hole is supposed to give you quicker throttle response.

It's also the first thing the instructions say to do in a DynoJet kit.

*("Remove the vacuum slide from the carb. Remove the stock needle & spacers, noting the order of assembly. Locate the slide lift hole. With drill bit provided (DD #29) enlarge your slide lift hole)*

- As the larger port reduces air pressure above the diaphragm quicker, so the slide rises quicker. <sup>2)</sup>  
The problem is that it is easy to overdo it, and make the port too large.  
This makes the slide rise too quickly, and possibly overshoot the proper position.  
You can get the slide 'hunting' around, back and forth above and below the 'correct' position (ie: that which gives the required constant depression).
- The problem with making it too large, is that you can't make it smaller again.  
If you end up with a too large hole, the only solution is to get a new slide and diaphragm.
- Some of the jet kits come with a 1/8" drill, which is definitely too large.  
The stock port is 0.097" in diameter.  
What you are looking for, according to Buzz Buzzelli in the Harley-Davidson Sportster Performance Handbook, is a 20% - 25% increase in cross sectional area of the transfer port.
- Drilling to 1/8" would be a 66% increase in the area.  
Buzz Buzzelli recommends drilling with a 0.105" diameter bit.  
A similar size which some might be more likely to have to hand would be 7/64" (0.109"), or 2.7mm (0.106") for those with easier access to metric drills.  
These would be between 17% and 27% increase in area. \

But no doubt everyone you ask will give you a different answer.

This is from CV Performance on drilling the small hole in the slide: <sup>3)</sup>

When following our instructions that accompany our Tuners Kit, we only recommend the drilling with the supplied 7/64" bit as optional.

And this procedure typically only needs to be performed on older (original) Harley/Keihin slides which did have burs.

Some of the early slides had burs in that vacuum port hole so using a 7/64" bit was the easiest way to clean that up without going oversized.

Newer slides such as those we sell no longer need to be drilled or cleaned since they are already deburred.

Using the 7/64" drill bit is still an option at your discretion but certainly not necessary.

And if you have a new slide from us, then you are ready to just drop that in and ride.

We emphasize in our own instructions, do not follow any of the outdated information still out there to drill with a 1/8" drill bit.

Doing so may seem like a good idea to make the slide open faster;

But this also causes deceleration lean issues, poor idling, and surging due to the slide hunting up and down for the proper position.

Never drill with anything larger than a 7/64" and even then don't use an electric drill. They will wallow the hole bigger than the size bit you're using.

You can buy a 'pin vise' (cheap at hobby stores) which is made for using small drill bits to twist in by hand.

Check the hole size to verify it's not too big with the back side of a 7/64" drill bit.

If it won't fit or does 'just' fit, you're OK.

If you can wiggle it sideways a bit, the hole is too big.

You can use an index drill bit kit to rod the hole with different size bits to be sure of the size.



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