

Subj: how to shave the pickup
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Timing pickup: look at it installed and notice it's at an angle. My pickup can move up approx 4.2mm from the stock location. this still allows the O-ring to seal.

remove the steel bushes in the mount holes. elongate the holes into slots 9mm long, just big enough for the mounting screws. they do not need to be full width. Do this to allow the pickup to slide UP the case further. one of the holes will go "out" of the surrounding plastic-oh well. mark the edge of the pickup plug which faces up case when installed. Shave approx 4mm off that side of the body, in the same curve as it originally was. It will expose 2 little dots of copper (from the lead-in wire's terminals, I think). No problem w/ that. the copper is up against the O ring, it won't touch the alum case. if you look at the end of the pickup plug you'll see the little magnet in the center and 4 little dashes in a circle around it. You will still be a few mm away from those dashes. on one side of the plug you're shaving you'll encounter a harder plastic area than the rest of the plug. No problem, just file away on it. It doesn't seem to expose anything. (ha! getting you worried now?)

be sure to leave the surface the O ring seals against smooth and flat.

there you have it, approx 4 degrees of advance. Reinstall it upside down in the hole and you can retard up to 4 degrees.

>Would you mind jotting down some notes as to how you created this
>advance/retard technique. I'm in need of the same adjustability. Thanks in
>advance.

No problem-

get in there and take a look at how the pickup is mounted on the engine case. It's on the left side, behind the rear cylinder, with the wires coming out of it on the bottom. To advance the timing, it needs to be able to slide UP the case.

With the pickup still installed, mark the back of the pickup (somehow) with a vertical line, so you have a reference to what is straight up and down (parallel to the cyl bore) after you take it off. This is bkz the pickup is not "square" to the direction it will need to move, once you look at it you'll see what I mean. Otherwise if you take it off it's not real obvious where you need to remove material.

remove the pickup and use a small drift to remove the 2 small, steel sleeves which bush the mounting holes. The sleeves have a little dimple in them to help them stay in, but they come out without too much drama. support the backside of the mounting holes w/ a small socket or something when you do this, just to be safe. I've had no problems with breaking anything while doing this.

The goal of all this grinding is to allow the pickup to have about 4 mm of travel. I measured mine and it has a total adjustment of 4.2mm, and the bolt holes have been elongated to 9mm slots.

4.2mm of travel on a 4.7" diameter (2.4" radius) = 4 degrees of adjustment. I'm not sure

about how far the pickup is from the crank CL but I think that's pretty close.

look at the "plug" of the pickup, the part that sticks into the case. it is 22mm in dia at its base. You will need to remove a 4mm crescent of material from "upper" side of the pickup plug, to allow it to move 'up' in the case. so now the pickup will be 18mm wide when measured along the direction it will be adjustable, and will have an elliptical shape. It will still be 22 mm wide across its width.

Simply put, remove material from the 'upper' side of the plug to allow it to be slid up 4mm from its current location.

do not chew up the flat mounting face of the pickup, the O-ring seals against this.

the O-ring is not exposed and will still seal just fine with this mod.

grinding notes: In your adventures you will meet some other substances besides the soft, grey pickup 'case' material. 2 or 3 small bits of copper will become exposed during this process. They don't touch anything and all the pickups I've done have all still worked (on my bike). There is some blob of harder, black plastic which you will encounter just under the surface, just grind on thru it. I think the 'core' of the pickup is cast from this harder stuff.

I use a dremel grinder and a cylindrical bit.

next, elongate (slot) the 2 mounting holes to allow full travel of the pickup. You only really need to make the slots wide enough for the threads of the mounting crews to fit in, but it's a tough shot and I make the slots pretty wide cause its easier. On mine, one hole (the one on the left side of the bike when mounted) becomes a slot 9mm long. the other side doesn't have that much plastic there, you just end up opening the slot out into the open, if that makes sense. The allen bolts I'm using have nice big wide heads and still clamp the pickup in place easily. I don't know if they were stock, or if I stole them from something else, or what. Mine have wide, chromed allen heads (like the fairing bolts) and work well. I can get a small allen wrench on the pickup and adjust it in 2 minutes, no problem. loosen it up enough to easily move the pickup when doing this, if you leave the pickup pretty tight and have to push hard to get it to move, you could roll the O ring out of its groove, I suppose, but I haven't had a problem. The worst problem I had was losing Bob's O-ring, which he apparently included for some reason!!

well, that oughta cover it. To return to stock timing, just slide it down till it bottoms, and you're in the stock location. to advance, slide it up. 1mm = approx 1 degree of advance.

to retard timing, reinstall the pickup upside down so it can be slid "down" the case further than normal.

I've modded 6 pickups now and it takes about half hour each. But I have other things to do now so anyone else has to do their own! It's really no big deal.

with stock (low comp) heads, this mod alone was worth 4.7 peak HP, and boosted power everywhere above 7500 or so, rising to the +4.7 hp level at 10500 rpm. Not bad for a zero \$ modification.

as a contrast, the winner of my little expansion chamber shootout made 4 - 7 peak hp more than the other 2 pipes I tested, cost almost \$800, and did that at the expense of a dip in torque in the powerband.

with my High comp heads, things are more complicated, advancing boosts power below 10K but hurts power above that, at which point the motor needs an increasing amount of ignition retard to keep revving.

retarding the timing 4 degrees below stock really depressed power before peak, but the motor revved out (held high torque) for an additional 500 RPMs.

This is consistent w/ most high perf 2 stroke apps that I have seen or read about.

The stock advance curve is as follows:

14 degrees below 1700 rpm
tapers up to 26 degrees at 2700 rpm
flat @ 26 degrees till 6000 rpm
tapers down to 11 degrees at 9500
flat @ 11 degrees above 9500

very interested to hear what results others have with this mod! If you do 3 dyno runs, w/ timing advanced, stock, and retarded, you will be able to get a good idea of what your bike's "max power" advance curve will be. Then you can go home and stew about it like me!

Randy N.