

Altoz Volume

What's the big deal about big alternators? I notice guys, right after being on some new bikes, plug them in, and I see some "diagnostics" scattered into bad comments, requiring some creative engineering. But back when I rebuilt auto engines, it was all about voltage static stacks—man, ah.

I have rebuilt 1980-2000 (and-on) bikes to use K&N poly-fiber individual cone filters, but several shops have said "No, no, you have to use the original brand, with no leaks." As a regular MCN reader, I see specs on valves, ports, pipes, mapping, etc., but help me understand why the static is so tedious. Thanks very much.

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It's all about flow. In order to have the intake system operating properly, one needs to have a large amount of still air available at the intake of the metering system. Turbulence in the air causes eddies, which decrease the efficiency of atomization of the fuel. Since the air is being fed to multiple devices by the large alternator, the pollution from each cylinder drawing air causes a siphon effect for the air entering the bike, which then affects with separate air cleaners, and this helps the air to more smoothly enter the air cleaners and then on to the carbs.

Stack Meter

I own a 1985 Honda 700 Interceptor that I have in storage for two years. It has 10,000 miles on it from the time that the gas tank developed a leak and was packed. I have purchased a new tank, but have discovered that the meter will not turn over. Any idea, magic portion or miracle that you can suggest to fix up the meter and get it running will be appreciated?

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The first thing that has to be done is to find out where the bind is. We often find that when there is a fuel system problem, gas has flowed into a cylinder, and since it cannot compress, it hydraulically locks the engine, so it stays in its current state, either the kill switch off, and bump the starter button. Save your face and other things away from the plug holes, because if that's the problem, you will be amazed at how the fuel will fly out of there. If it was fuel hanging things up, as soon as it's cleaned out, you need to change your meter oil. The amount of fuel some of it will have flowed past the rings, and the oil is contaminated.

If that does not solve things, the next thing we would try is a quality amount of pre-wetting oil down those same spark plug

holes. Give it time to work, a couple of days perhaps, and hopefully, this will help to free up any stuck, stuck piston rings.

What does not work is it's time to start taking things apart and inspecting them.

Synthetic Oil Break-In

I was reading the "New Synthetic Break-In, How Long?" letters in the February 2004 issue of the *Downtime Files* and I am sure a few readers had the same idea. There's '98 M100 and a '00-9965. Both are running Mobil 1 (automotive grade), 15W/50 full synthetic, and I change the oil every 1,500 miles or so. The thing that worries me is that I have been running the synthetic oil in both of them, since around the time they turned 2,000 miles. I was content to break them in by the book, but did not know that using synthetic in a bike had much later in the bike's life. The M100 has 10,200 miles and the 9965 has 4,000 miles. Every time I change the oil, I replace the filter, clean the oil "sock," and do find a small amount of carbon build-up and shavings stuck to the drain plug as well as on the filter. I am curious to know why synthetic oil is bad taking until 5,000 miles, and am I damaging my bikes, or have I just been delaying the break-in by doing this. Also, will going back to petroleum-based oil for 5000-4000 miles help this. Is in the game?

Mark Sullivan
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Since you did not run the engine on petroleum based oil for the time that you put the first 2,000 miles on, both engines probably broke in just fine, and the real test of this is their gas mileage and performance. Because you say the bikes are running well, we would not switch back to petroleum-based oil. We do, however, wonder about the metal you are still getting in the filter... it is not a good problem, but it is not a problem, so you should not be worried if it is steel or aluminum.

Suggested Carbon Core

Having owned several BMW GS models over the last 10 years, I can say with confidence that they are great bikes. I can also report that they occasionally try to kill you because of unexpected power loss under increasing load, resulting from premature detonation or "pinging," which seems to be caused by carbon build-up. According to my dealer and all the chatter on the internet, all of the BMW engines ping. I can only thank the GS, because of the way it is set up, are prone to this problem, and the often recommended "tune" is to occasionally blast out the problem with extreme high-rpm operation. Unfortunately, this is not always

possible or safe. So, my question is, does the new dual spark setup also help eliminate the carbonization and pinging problem or does it just affect the timing and environmental issues?

Thank you,
Bob Ross
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The dual plug design may help a bit with the carbon build-up thing, but apparently not enough, assuming that your air fuel mixture were correct, and that the cause of the build-up is the shape of the combustion chamber. But, here's a trick we have used many times successfully. We instruct "Motor Mystery Oil" into the intake manifold with the engine running, a few teaspoons at a time. The bike will want to stall, so keep the revs up. This does several things: first, it makes enough exhaust smoke to clear every molecule away from our part of Florida tank that is a great trick by itself, and it also cleans the valves and shavings, removing finely large chunks of carbon, which come flying out of the exhaust pipe. Do not do this for too long, because it is not environmentally friendly, but since your bike will be burning cleaner for quite a while, it balances out in the long run. We can't guarantee this will always work, but it's worth an inexpensive experiment.

Clutch Freeway Mystery Solution

I thought you might be interested in the solution to why my clutch freeway was slipping in second oil for the time that you put the first 2,000 miles on, both engines probably broke in just fine, and the real test of this is their gas mileage and performance. Because you say the bikes are running well, we would not switch back to petroleum-based oil. We do, however, wonder about the metal you are still getting in the filter... it is not a good problem, but it is not a problem, so you should not be worried if it is steel or aluminum.

When having your Honda Turbo transmission serviced, make certain you specify that you would also like to have them "NCOS-out the shift drum in 5th gear." It is absolutely imperative that this be done.

If the shift drum is not modified by this procedure, the lateral forces on the main shaft created by the underslating will eventually cause the mainshaft bearing to wear. Eventually this bearing will wear enough to allow the entire clutch assembly to move forward just enough to unseat the clutch in 5th gear, causing the clutch freeway to disappear until acceleration, and only the clutch to slip in 5th gear just—just as I experienced.

Eight thousand miles after my tranny was serviced, the clutch began to slip. After going through three clutches in rapid suc-

cession, I then noticed that the freeway was disappearing under acceleration only in 5th gear. Mark at R&D Motorsports, who originally ordered my tranny, contacted me and found what was causing the mainshaft to move forward under acceleration in 5th gear, thus causing the clutch freeway to disappear and the clutch to slip. Although the mainshaft M1 gear is bolted right up against the transmission housing, Mark discovered that the shift drum was "out." That is, my axial forces present will cause the shaft to move, depending on whatever end play is present.

When the shift drum is rotated into 5th gear, the shift lever slides the M1 gear dogs into the mating slot in M5. M1 is a sliding gear, and M5 is held in place on the main shaft with a circlip. This circlip prevents M5 from moving forward on the shaft, causing it and the shaft to be one axial unit. But, when M1 slides into M5, the dogs and slots engage only about 75% of the way. That is, the two gears are not bolted right up against each other. The axial forces, when the dogs and slots are undercut then again, cause a sliding force to be created between the two mating gears.

Mark determined that the whole problem was created by the fact that M5 does not normally fully engage with M1. When the gears are not undercut, this is not a problem, because the two gears are not attracted toward each other, hence no axial force is created. However, once the gears are undercut, the attractive force present due to the undercut dog tries to pull M5 toward M1. Since M5 is held in place on the main shaft with a circlip, this forward force pulls the entire mainshaft forward as far as any nut on the forward bearing will allow. This explains why the clutch freeway disappears only upon acceleration, and only in 5th gear.

Any axial forces present between the other gears would cause the shaft to move forward, but since it is held in place, the clutch plates would not be unloaded.

The solution? To make sure that M5 gear gets all the way over into the M5 gear. This is accomplished by "NCOS-cutting" the shift drum in 5th gear, which allows slightly more travel in the shift fork, thus allowing the M5 dog to engage 100% with the slot in M5. In this way, with the two gears bolted right against each other, the attractive forces between the two gears are cancelled, and there is no axial force on the shaft.

Although Mark has performed this shift drum lubrication before, he says he is surprised that it occurs on the Honda GS Turbo, because he would normally see these types of forces because a problem "only in high-powered sportbikes" is that the high-rpm operation is aging 650cc bike to create such large forces without

"NCOS-cutting" (only in those terms for the press, because this is a modification they perform as a matter of course on undercut transmission which has known to be going into Nitrous Oxide boosted engines). Anyway, NCOS-cut it, and forget it.

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To Rejet Or Not To Rejet...

I read with interest your comments to the Harley owner who wanted to install Scimitar's Eagle pipes but was reluctant to jet his carb.

I have tried to establish whether my 2002 750 Nighthawk is running rich or lean after some modifications using the method you describe, but without success. The reason must be that the fuel is held in place by the carburetor and oxygenating compounds, such as MTBE, which prevents the spark plugs from turning any color at all. It seems to me that the only thing you can learn now is if your bike is running really lean, because of being air restricted on the isolator from carburetor.

Am I correct in these assumptions? I installed a Dynajet Stage 1 kit to make sure I was not running too lean after I noticed that my bike was making head cracking noises when I turned it off.

Yours sincerely,

John Gibson
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Here in Florida, we also have these additives in our fuel, but we have never had a great carburetor jetting problem on our isolators. Rejetting your carburetor is not at the base of the isolator, not the jet.

Idle Irregularities

This is in response to a letter that was printed in the November 2003 issue, volume 34 number 11, page 916 titled "Strange Rides." I have an awesome magazine and I am in awe with the 1100 Shadow but it is not connected with the normal jetting curves.

The following is an e-mail I sent directly to Ray Barker, but I think that you may serve others by sharing the process and printing it for all to read.

You have an awesome magazine and if I was only able to keep one of my six motorcycle magazines subscription, yours is hands-down my only choice.

Email to Ray:

Being an avid motorcycle rider myself I try to share my knowledge and experience with other fans. I read your letter to MCN and think it might be able to help you. In your problem I have come across a 35 different motorcycle (not including our trainers, 45 motorcycles—I'm a riding school). As each I

experienced the same issues you are having in your Shadow when I installed a set of Vance & Hines pipes on a project bike (1996 1100 Shadow). My friend also had the same problem on his 1994 Shadow equipped with Cobra pipes.

The problem is not the main jetting, since you are not having backfiring during your normal riding. It is your idle jets, air-fuel mixture, or both. This is what you need to do. On the outside of each carb a small brass flattened screw located near the float bowl. I don't want to mention which side you start with. Conating the turns, turn the screw in all the way (do not turn it in too tight or you may damage the needle) then back it out. As you back it out, the bike will begin to idle later and then slow down again. You want to leave it when it generates the fastest idle. Then repeat for the other side. Once you have done both sides, reset your idle with the idle adjustment screws and double-check the carb sych (this should not have been affected, but it is good to check again). Make a note in your maintenance book of how many turns you used. This procedure will fix the backfiring at closed throttle for both of our bikes and it worked for two other people, also. I hope this helps you, since it sounds like you're getting the same symptoms as the others.

Best Thanks
John Gibson
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Here in Florida, we also have these additives in our fuel, but we have never had a great carburetor jetting problem on our isolators. Rejetting your carburetor is not at the base of the isolator, not the jet.



Downtime Files

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