

Searching For A Short

In a previous issue, you explained how to find an electrical short, but I can't remember where the article appeared. Can you point me to the article or provide easy directions for locating a short? For example, how can I tell if there actually is a short in the system? My BMW K75 1992 OEM battery kept discharging this winter and finally died. The new battery went dead after sitting one month (it was charged by the dealer, but maybe not enough?—The bike started when installed). I am not blowing fuses and assume I have a slow drain. I have read that a bad alternator (at least in autos) is a common cause of a slow drain (worn brushes). Are there other common causes for a slow battery drain (especially in a BMW K75-RT/ABS)? Thank you for your help.

Joseph Cote
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Joseph, the easiest way to find out if there is a continuous drain is simply to disconnect a battery cable and connect an ammeter between the cable and battery post. This will tell you how much current is flowing. An even simpler test is to just disconnect the cable and then touch it to the post. If it sparks, the current is obviously flowing. Disconnecting fuses one at a time will help isolate the offending circuit.

Of course, any component that stays on when the key is turned off, like a clock or alarm, will draw current.

Also, a common lead-antimony battery will lose approximately 1% per day from self-discharge, just sitting, and varies depending on the outside temperature. When the battery is approximately 50% discharged, the bike will not be able to start. Maintenance-free batteries self-discharge half as quickly.

Re: Softail Mosquito Killers

Just received my July 2003 issue in the mail today. I am referring to the letter called "Softail Mosquito Killer." Thanks for all your help. The dealer tried all the answers you came up with, but none of the ones you suggested were the problem. I was there with them when they tore the bike apart trying to find the problem, and they found that the rear cylinder had 1/8" of oil sitting on top of the rear piston and the oil was being passed out of the breather by the air filter. Anyway, it was proven that the rear cylinder was out-of-round right from the factory.

Things were fixed right away and now the bike is running great. It has over 3200 miles on it and no problems. They said that a while back, Harley-Davidson did have a problem with their cylinders, but that was taken care of. I guess it isn't fixed 100% yet. My suggestion to anyone doing big

bore work is have the dealer check things out before moving ahead. It could save a lot of problems. Thanks again for the help.

Roger L Christensen
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Drive Chain Wear Tolerance

In regards to Triumph Tony's question in the May Downtime Files, I would like to offer the dimension he was seeking. The method you described to check for chain wear is an adequate "rule of thumb" method. The more precise way to measure the wear of a chain is to measure the increase in distance over a series of pins.

Regina's recommendation of the maximum acceptable wear limit for an O-ring chain such as Tony's 530 ORP is 10.098" over 16 pitches. This measurement is taken starting from the center of the pin (let's call it pin "0"), counting along to the center of the 16th pin. The measurement should be taken with the chain under a tension of approximately 45 lbs. One can do this by engaging the transmission and having a helper rotate the rear wheel while taking the measurement. A value less than 10.098" indicates it is still acceptable to use the chain, a value over indicates it is time to replace the chain (and sprockets, as you suggested). Further information is available at <http://www.regina.it/oldregin/products/chose.htm>.

Keith Foster
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YZF750 Valve Problem

I have a 1997 YZF 750R. Whenever possible, I use premium gasoline. The original owner put the first 6000 miles on, and the only modification I am aware of is a Vance & Hines muffler. I'm no weenie on the bike, but I don't pop wheelies or otherwise abuse the thing.

As you probably know, the manufacturer recommends the first valve adjustment at about 27,000 miles. At about 25,500 miles, my bike quit starting. I had a certified mechanic inspect it, and we discovered that the exhaust valves and all their valve seats were fine, but the intake valves were shot. All else appears intact.

What on earth would cause the engine to burn up the intake valves at such low mileage? Is this a manufacturer defect? Thanks for your expertise.

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It is very unusual that the intake valves would burn before the exhaust valves. One possibility is that the seat-to-head contact area is too narrow, and the valves are not then dissipating their heat into the head.

Another possibility is that the valve adjustment was too tight and that caused the duration to be too short, but this is unlikely since you do not report any poor running conditions before the engine stopped running. We doubt that there was a general problem with these valves or we would have heard a lot about it by now. We also don't think the use of high test fuel, or your exhaust system, has anything to do with the problem.

Yamaha R6 Battery Failures

This is in regards to Brannon Weatherly's letter regarding leaking Yamaha R6 batteries. I currently work as a technician in a Yamaha dealership and have seen at least six R6's come in with this problem. As far as I know, Yamaha has stepped up and paid for every one of them, with each bill being a minimum of \$1400-\$1600. I would recommend that Brannon get a hold of someone from Yamaha and bring this to their attention. Good Luck.

John Niemeyer
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Mysterious Shadow Problem

I have a leftover 1998 Honda Shadow ACE Tourer that I bought new three years ago and it has given me trouble-free service. But the last time I rolled it out of the garage for a ride, it wouldn't start. I turned the key, the lights went on, I heard a "click," then everything went dead.

Well, no problem, just replace the main fuse, right? The 30-amp main fuse and all the 10 amp subfuses were fine. Going by the Honda Service manual, I checked continuity on the starter relay switch ground—okay. I checked for voltage across the battery; it's fine (I keep it charged with a Battery Tender). I checked for continuity on the sidestand switch. Fine. I checked continuity on the ignition switch. It's fine.

Voltage across the starter relay switch is about 2 VDC when the start button is pushed. I'm tempted to replace the starter relay as my first trial and error step.

The only additional load I have on the electrical system is a Cobra light bar and an Electrical Connection LED taillight conversion kit. Both have been on for two years with no problem, except for when a diode went bad on the taillight kit.

I'm baffled. I wanted to give you guys a shot at it before I get giggered \$90 per hour by my local dealer.

Jerry Brown
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This sounds like a classic example of the Yuasa "snap" failure that we've gotten so much mail about. The internal welds can

crack, but the battery will still show voltage with a meter, but cannot hold a load. A new battery is the cure in this case.

But, in case this is not the problem: With 2 volts on the terminals of the relay, we would look at the connectors in-line with both sides of the relay feeds. It may be like you have developed corrosion on the terminals in some of the plug-in points. If so, the best bet is to locate them one at a time, and unplug and clean them all. If this does not solve the problem, then we would measure the resistance of the relay coil and compare it to the specification in the service manual. If the resistance is low, then we would replace the unit.

Carb Lines Overflowing

A buddy of mine is just getting into motorcycling and has bought a 1978 Honda Hawk CB400T. One of the few problems with the bike was that the carbs needed to be cleaned. I offered to help him with the project and we completed it successfully. The only problem that we ran into (and the reason I am writing) is this: When we started taking the carbs off we noticed that the previous owner had blocked off the breather/drain tubes of both carbs.

During the cleaning, we checked the drains and found them to work perfectly.

After the cleaning (and with the breather tubes unplugged), when we turned the gas back on, we found that gas was running right out of the drain tubes, even with the bike running. What causes this to happen? Is it an easy fix or should we look for new carbs to keep the bike running?

FYI, after cleaning the carbs, the bike seemed to run much better than it did before.

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Bob, the carb float needles and seats need to be replaced. This is a common wear item in carburetors, and that's exactly what happens when they leak.

BMW ABS-Model Battery Types

I've never before felt the need to comment on the advice given in the Downtime Files, but the question concerning maintenance-free batteries and BMW motorcycles caught my attention. The question concerned the battery power and the BMW ABS system. On the generation of bike in question (the 1100 Oilhead series), there is a problem with the ABS setup and batteries. If the computer doesn't read the right voltage, when the ignition is turned on it will fault the ABS. When we put a maintenance-free battery on my wife's bike, this would happen probably six out of ten attempts,

regardless of the state of charge (even after a full night on the charger or after hundreds of miles riding). We never had this problem with the original battery, nor did we have the problem with my bike (same generation) when we replaced the original battery with another lead-acid battery! When I talked to two dealers and several other owners, they reported similar results.

I'm not a battery specialist so I don't pretend to understand the physics of it all, but the facts seemed simple to me: The ABS computers worked with the original batteries and with BMW replacement batteries, they didn't with the Westco maintenance-free batteries. The newer ABS (as on the 1150 series) must have this fixed, as I've heard that BMW is now offering a maintenance-free battery on some models.

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The problem is likely not to be the fact that a maintenance-free battery was installed, but rather the state of charge of the battery. We have found that, often, maintenance-free batteries are not serviced correctly at the dealer level, and delivered to the customer in less than a fully charged state. When the customer first uses the battery in this condition, it sets up a kind of memory, and the battery will never achieve a full charge state later. This is more common with older battery designs, as the newer ones do not seem to be as prone to this 'memory' effect.

RFG & Spark Plug Colors

I read with interest your comments to the Harley owner who wanted to install Screamin' Eagle pipes but was reluctant to rejet his carb. I have tried to establish whether my 2002 750 Nighthawk is running rich or lean after some mods, using the method you describe, without success. The reason is that the fuel we get today is full of detergents 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 tell now is if your bike is running really lean, because of burning or spotting on the insulator from extreme heat. Am I correct in these assumptions? I installed a Dynojet Stage 1 Kit to make sure I was not running too lean after I noticed that my bike was making heat noises after I turned it off.

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In Florida, we also have those additives in our fuel, but we have never had a problem observing the colors on the insulators.

Fatboy Mods Make It Worse

Help! I have a 2000 H-D Fatboy (TC88) with a carb. In order to improve the sound and increase the power a bit, I pulled the baffles on the stock pipes, added a Dynojet kit and a high flow H-D air filter. This is the same thing my son and I did with our '97 Evolution series engines with excellent results. Unfortunately, what I accomplished was atrocious gas mileage (dropped from about 50 mpg to 30 mpg) and a decrease in power. But the engine runs smoothly with no backfiring and no carb cough, and the spark plugs have perfectly white insulators, no deposit on the electrode, and a bit of powdery black deposit on the metal part of the plug. I spoke with a Dynojet rep who told me that this was all normal and that I would have to replace the baffles in order to improve the power and mileage. I did this, but there was no change. Again, I spoke with the rep. He suggested a bit of adjustment of the mixture screw, and to move the circlip on the needle from slot 4 to slot 3. Still no change whatsoever. I'm using the recommended jet, though I have used larger ones supplied with the kit with no improvement. I'm concerned about using smaller jets because of the potential lean condition with the high flow air filter. Any ideas?

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You are right to be concerned about the lean condition. We suggest that you take the bike to a service facility that has an E.G.A. machine and then rejet the bike properly with the accessories set up the way you are going to ride it.

Downtime Files
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Please keep in mind that since the AMI staff has not seen your motorcycle, the answers given are best-guess assumptions based on prior experience and education, and may not necessarily be correct. When in doubt, take your motorcycle to a qualified shop.

Send your typewritten questions and photos if possible to:

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