

DUCATI TECH TIPS

THE CASE OF THE SMOKING DUCATI

From Hot Bike Magazine
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Do you guys believe this crap? I mean you'd think I could start this technical piece on a serious note. But Noooooooooooo. I've got to start kidding around. I've got to stop this. I really do. I'm not a well man. OK, ok, I'm together now. Here goes.

It came as a serious disappointment when the Ducati Sport started to trail large plumes of smoke behind it. The motorcycle had but 3,000 miles on it; why; it was barely broken in. These prestigious machines are neither common nor inexpensive, and used ones are highly sought-after items. Their lines are racy and their fabled handling qualities rarely believe their legends. And so here we are, stretched out on this glorious motorcycle, drilling through the twisties and hammering along mountain roads... and the darn thing is smoking just like any old clunker.

After talking with the local Ducati wrench we discover that "Oh yeah, Didn't you know? They all do that after two or three thousand miles."

No We didn't know.

What happens is this, The ducati for reasons known only to its Italian designers and their confessors, comes from the factory fitted with these absurdly short valve guides. Moreover, the material they are made of registers in toughness somewhere between two-week-old bubblegum and seasoned shoe leather. As a result, they are prone to relatively rapid failure.

For those readers who haven't done it. Replacing valve guides is not a particularly easy chore. And when you have a relatively complex overhead camshaft cylinder head to disassemble first, one soon realizes how pleasurable it is, for example, to stick your finger into a Waring Blender, to brush one's teeth with a bat guano, or to take a summer siesta on an anthill.

But, as the wizened old sage said "A man's gotta do what he's gotta do." The bikes top end had to be torn into. But his time it was going to be different. This time we're going to replace the failure-prone stock components with good, reliable guides, so we don't have to do this again. Also, while the thing is apart we'll be performing some other closely needed chores. For example, the silly little neoprene valve seals that are stock Ducati items will be disposed of in favor of those nifty teflon ones made by Perfect Circle. The race car guys use them - sprint cars, diggers, some formula road racers - with excellent results. There's no reason we can't use them as well.

Also, we're going to port the cylinder heads, because just a quick looksee at the ports tells us that they need all the help they can get. There are ledges and all types of irregularities that restrict flow and cause unwanted eddies.

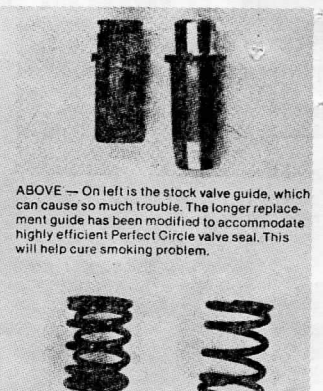
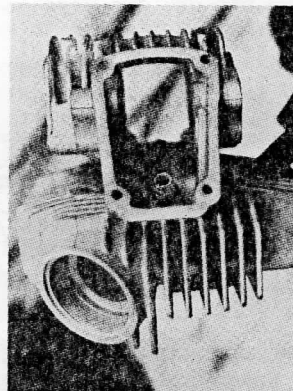
Finally, we're going to give the valves some needed help by way of S&W valve springs. The stockers are just too soft, and with time and fatigue they'll only get softer. The S&W springs use two coils per valve; the stock arrangement uses one.

Many of you readers have heard of Gary Bray, the man who will be doing the headwork on the Ducati. If you haven't heard of him, we might point out that he's been around motorcycles for a very long time. An AMA Expert rider in the late 1950's and early 60's. Bray earned himself a reputation as a good flattrack racer and as a top notch tuner and engine builder. After awhile, though, the pressure of maintaining a stable of racing motorcycles for himself and other riders proved too heavy, so he hung up his helmet and became a full-time wrench. Such luminaries as Jack O'Brien, Dan Haaby, Ralph White and others have ridden his motorcycles to victory.

Today Bray has a thriving business, Gary Bray Boring Service, 2834 Colorado Ave., Santa Monica, CA 90404. Here he handles all sorts of challenges involving boring, porting and so on. Motorcycles ranging from small-bore street multis have known to benefit from his labors. Because of his vast experience, he seemed the logical choice to massage and fettle the ailing Ducati.

Upon disassembly of the Ducati heads, we discovered that the valve guides were even worse off than expected. The worst of the four guides was that on the exhaust side of the rear cylinder. It is a wonder that, with so much room to rattle around in, the valve was not irreparably damaged. Valve-to-guide clearance was about .015"! The other guides were not so badly worn, although the exhaust guide of the front cylinder had about half that clearance. By way of contrast, the valve-to-guide clearance in the Bray-rebuilt heads is about .0005 in.

The new guides we installed in the heads are from Woods Motor Shop in Glendale, California. These items are made of a much stronger aluminum bronze alloy than the stock parts. They are also longer and offer the valve stem much more support. Price: around \$6.40 each



ABOVE — On left is the stock valve guide, which can cause so much trouble. The longer replacement guide has been modified to accommodate highly efficient Perfect Circle valve seal. This will help cure smoking problem.

BELOW — When everything is finished, the heads are glass beaded, to help check for any flaws. It also helps air flow, and (for all practical purposes, just plain looks clean, and finished!

ABOVE — On the right is the stock, single-coil Ducati spring. We're now using the dual-coil S & W springs, as on left. This will help prevent valve float.

