

► shape, and only needed a light hone to accept the tasty MTC slugs.

The more perceptive among you are likely wondering how we dealt with the wrist pin being lower in the piston than stock. That should throw the whole deal out of whack.

It certainly would, but there's a solution. In some cases, turbocharged 'Busa engines receive a cylinder spacer plate. This can either be used to lower the compression ratio with stock pistons or allow the altered pin location of the MTC pistons. Bill didn't like this option for it has negative effects with altered upper motor mount fitment and cam timing.

Falcon Engineering had the very clever answer. Falicon's ingenious solution was to make knife rods that are one millimeter shorter than stock. They made all the geometry line up again, and the combo of the MTC pistons and Falicon rods give this boosted 'Busa the strength it needs in the reciprocating department.

The remainder of the bottom end is surprisingly stock. Alex carefully fitted stock Hayabusa bearings to the new Falicon rods. Careful attention to detail in this area is critical to long connecting rod bearing life, as no other part of the engine will see as much force.

Stock torque settings and procedures were used throughout the mating of the cases. It's important to fully assemble and torque the lower case together in this fashion before attaching the cylinder block and head.

Cylinder Head

Bill opted to keep the cylinder head stock, with stock valves, cams, and no port work. We were surprised to learn that all of his championship-winning bikes used a similar approach. Bill told us, "Serious porting, larger valves and cams add considerable expense and reduced dependability to a bike like this, and suffer in power per dollar. There's more power to be made, but we've already shown that we can get over 425 horsepower out of bone-stock Hayabusa engines with turbos. How much more power do we need?"

However, Bill had Joey Hahn install a set of Orient Express valve springs to keep the valves stable under boost. The additional pressure in the ports at higher boost will interfere with the valves' ability to close at high RPM. Even though we are using stock valves and cams, the stiffer springs are a necessity.

One more area needed refinement – the stock cylinder head studs. They couldn't be expected to put up with the strain of this kind of power. Joey Hahn machined the cases, cylinder barrel, and head for a set of Orient's brutal head bolts. A stock head gasket was slipped under the head, and the whole assembly torqued down. With this kind of clamping force, the team was confident that Bill could pour the power on with impunity.

With the motor nearly complete, Alex reinstalled the stock cam sprockets, chain, and tensioner. Stock cams and cam timing will enhance the bike's low speed and cruising drivability, enabling the bike to run very well on stock EFI programming.

One area that would also need attention is the oiling system. The stock Hayabusa setup works quite well, with one exception – the oil tends to run away from the oil pickup during extreme deceleration from high speed, such as at the dragstrip. This condition can cause momentary loss of oil pressure to the engine at high RPM, a death knell for the bearings.

A particularly elegant solution is the Koenig billet oil pan with swinging pickup. This trick oil pan system is a bit of machining art that has several advantages over stock: it allows the bike to be set lower to the ground, it looks cool as hell, and it incorporates a swinging oil pickup that ensures oil stays flowing whether under extreme acceleration or deceleration.



The Makeover

The bike's progressing nicely at this point, but what about the second part of the equation? Has Bill managed to keep away from the doughnuts? When we last left him, he was hurting the scale at a portly and slow 235 pounds.

With a 15-pound loss so far and down to 220, Bill's made some decent progress. That 40-pound loss target still seems far away, but he's gaining ground. How's he gotten there?

He said, "Over the years, I've tried the Atkins dieting approach with decent success. This time, I decided to get serious about it. It's really effective for men, especially ones like me who enjoy meat, veggies and cheese. I was never much of a fruit eater, so that's not hard to give up. The hard part is cutting down on starches...I love pasta, potato chips, and any kind of bread. Atkins isn't just about eating only meat, unlike many misperceptions. It's mostly about cutting back on the huge amount of junk carbohydrates that have crept into our diets. Done right, it's a healthy change, in addition to the weight loss it can provide."

So, the major objective of losing weight grinds on for Bill. Like any 40-something fellow, it won't come without sacrifice. But as he gets closer to actually swinging a leg over the new boosted ride, there will be physical and mental conditioning too. Bill hopes his body and mind hasn't completely forgotten how to ride a bucking 450 horsepower beast.

