

Big Bore Honda Issues:

Reliability has been an issue with the 'Big Bore' GX200 Honda and Clones. We have seen barrel separation from the crankcase and extreme amounts of blow-by on some engines.

The problem is the piston and ring combination using the Wisco 3" piston and long rod. We are not currently working on resolving the problem of the big bore engines as we have not been able to procure a suitable piston at reasonable cost. We have received quotes for a piston designed to our specifications but the quotes are in the neighbourhood of \$250.00 US each! Plus still have to get piston rings. Total Seal piston rings are the only practical supplier for such a bore and piston. The rings will cost around \$100.00 per set. Prices quoted are circa 2009.

We realize that some racers are willing to pay such a price for parts but most are not. However, we are willing to work with customers if they are interested in our approach to solve the current problems of the big bore engine.

Purchasing the parts is only part of the problem. Machining is another issue. We have the experience and more importantly we have the tooling and machines that can do an excellent job for the 'big bore' cylinder. The main problem with the Honda engine is that no shop that we know of finishes the cylinder bore good enough. At Kart Works we finish bores with the same technology that is used to finish cylinder bores used on NASCAR engines. We use a Sunnen CV-616 Cylinder King honing machine and tooling that includes custom made Sunnen cylinder brushes and fixtures for the Honda engines. Honing a Honda engine using a hand held hone will not produce an acceptable quality cylinder bore.

I mention the cylinder bore finish technology because all of the problems with blow-by into the crankcase are caused by poor ring seal. Poor ring seal is directly affected by the cylinder bore finish and to some extent by the piston and ring design. We tried several machine shops in the area to rebore the Honda engines for Kart Works and none of the shops could do a job that was up to our standards so we bought all our own cylinder boring and honing equipment. Now that we have the right tools to refinish a large bore Honda maybe we can resolve some of the blow-by associated with the big bore Honda. We are willing to work with customers on this issue using the Wisco piston.

If an engine has a lot of blow-by into the crankcase it should be resolved by the cylinder bore, not by enlarging or modifying the crankcase ventilation. The 'poppet' check valve in the valve cover should be left stock as this valve helps create a small vacuum in the crankcase to help the engine make more power and help keep the oil from getting past the rings and into the combustion chamber. Disabling this check valve is not in an engine's best interests. Enlarging the crankcase vent to the cylinder head will not harm nor help the blow-by issue on a well sealed engine.

The fuel pump pulse fitting may be installed in the intake port. This is the only place the

pulse can be taken when crankcase pressures are not managed by proper piston ring seal. However, when crankcase pressures are controlled the best pulse is generated by the crankcase. Crankcase pulses are 2 times more often than the intake port. Also, some fuel pumps (round plastic) are vented to the atmosphere and when attached to the intake port a small air leak is created that may affect fuel mixture settings at idle.

Head gasket issues are solve by custom made gaskets to accommodate the larger bore.

We hope this information will help you make the right decisions for your racing engine. Remember, reliability is number one. To finish first, first you have to finish.

Best regards,
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