



Crankshaft Balancing

The importance of crankshaft balancing cannot be underestimated. Out of balance crankshafts lead to premature bearing wear, loss of horsepower and damaging vibration which can be felt throughout the motorcycle. These vibrations increase with the square of engine speed (i.e. double the speed and the vibration forces increase four-fold).

If you are running a stock or a superbike engine and are changing the connecting rods and/or the pistons, it will also be required that the crankshaft is rebalanced. This is because the SV style twins (90 degrees) require that the crankshaft is fitted with "bob-weights" on the throws to represent the mass of the rotating and part of the reciprocating masses before the crank is balanced. This extra counter weighting is determined by the weights of the pistons / rods / bearings / rings / piston pins and pin locks if used.

The out of balance forces are centrifugal, pulling the crank towards the bearings as it rotates. They can be thought of as being similar to a rock on a piece of string being whirled around your head, as the rock rotates faster, the force trying to pull the string out of your hand increases. Because of the rotating speed of the engine crankshafts, even small amounts of unbalance can produce startling centrifugal forces.

Thank you for looking,

Gregg Spears