Many people in karting circles when discussing the various aspects of kart engines talk about the Blowdown of the engine. Blowdown is the amount of time/distance/degrees between the exhaust port opening and transfer port opening.

The most accurate description of blowdown would be the amount of time between the exhaust and transfer port openings however this "measurement" would only be accurate at one RPM, so blowdown is commonly referred to in degrees of crank rotation.

However, in the case of the Yamaha KT100 engine, when you're referring to an engine of the same stroke and rod length, it is more common to refer to the Blowdown in "thousandths of an inch". A typical number would be something like .380 (considered a short blowdown) as opposed to something like .405 (considered a long blowdown).

Blowdown changes the way the engine runs throughout the RPM range. There is no set magical number, though on kart motors, it's typically between 25 and 30 degrees of crank rotation or for a Yamaha KT100 between .380 and .405 inches.

Usually (but not always) running more or longer blowdown results in an engine that has the potential to be tuned for more peak power. Here peak power does not necessarily mean top RPM, but rather more horsepower. This comes at a price however and the power is usually over a narrower RPM range.

Direct drive motors typically have quite a bit less blowdown than the blowdown of a clutch motor (but not always) and this is achieved by lower exhaust and/or higher transfers. The shorter blowdown results in an engine that has less peak power but the power is usually over a wider RPM range.