The differences and similarities of 2 stroke dirt bikes and 4 stroke dirt bikes

Dirt bikes, or most commonly known as off-road bikes, are specially designed for rough, rock and muddy terrains. Most importantly, Dirt bikes are available in two different types of engine, two stroke and four stroke. The major difference between the two dirt bikes engines is how often the spark fires. In a four stroke engine, the piston sucks in the fuel-air-mixture from the carburetor into the cylinder and compresses it. Simultaneously, the spark plug inflames the mixture which forces the piston to the bottom and presses the exhaust out of the cylinder.

On the other hand, in a two stroke dirt bike's engine, as the compressed fuel and air mixture ignites, the piston is forced down but at the same time intake port is covered. Thus, technically the two stroke engine will have twice as many combustions as a four stroke engine. In the same light, both the engines have a numerous other similarities as well as differences, but the thrill and utility that one derives from a dirt bike depends largely on making the most suitable engine choice based on ones preferences and use.

Before comparing and contrasting the performance, maintenance costs and the popularity of two stroke and four stroke bikes, it is important to establish the inherent differences among the two. The differences can be best understood by comparing a diesel pickup truck and a sports car. Both have their own unique advantages and it is hard or more appropriately illogical to declare one superior over the other. A sports car is well suited for speed while a pickup is the best option for heavy duty uses

Speaking of performance, the four stoke engine is best suited for drivers who prefer off track riding as it has a low end torque power. This is because, the bike does not jump out from underneath the driver when he/she hits a throttle. On the other hand, two stroke dirt bikes are more powerful, have a high end torque and are quicker to respond to a throttle because of its power. This empowers the driver to take wicked turns, gain speed and most incredibly, ride hanging in the air and gliding in whoops. It is also important to highlight that the travel suspension in two strokes bikes absorbs riding shocks as these bikes are specifically designed for difficult climbs, high jumps and loose dirt. Moreover, puncture is also resisted over the rough terrain. It is due to these factors that two stroke dirt bikes are considered as the most suitable dirt bikes for motocross and trick riding

Prominent differences lie in the maintenance costs and requirements of the two bikes. Two stroke dirt bikes require much more frequent and involved maintenance. More specifically, the maintenance and repairs include the rebuilding of the engines top end, changing pistons, rings and occasionally cylinder and crankshaft very often. On the other hand, a four stroke dirt bikes require little maintenance costs which include regular tune-ups and oil changes. However, it is important to note that it is more expensive to repair a four stroke dirt bike than a two stroke dirt bike. In this regard, the legendary 'Super Hunky' – Rick Sieman revealed the costs incurred to maintain a four stroke dirt bike, after an investigative research, in the following words,

"In the Honda manual, for the 450 Honda, it says '15 hours, you're ready for a rebuild' if you're a pro or an expert, and 30 hours for normal riding. That's what it says *in the manual*. Now, if you rebuild it, you're going to have to rebuild not just the head and the top-end, but you're going to have to do the rod and the whole thing. This does not include the clutch and the gearbox. The average cost: about 3,200 bucks."

While a four stroke dirt bike runs solely on regular gasoline, a two stroke dirt bike runs on a blend of gasoline and two cycle motor oil which adds to the running costs. Furthermore, as the increased combustion frequency in two stroke bikes produces heat, oil is added as a cooling agent. This further adds to the regular running and maintenance costs. Also, two stroke dirt bikes have a shorter engine life and wear faster because of a lack of a dedicated lubricating system. Another major drawback of the two stroke dirt bikes is the inefficient fuel mileage.

Despite the popularity of two stroke dirt bikes among the riders, there has been a sharp decline in the production and use of these bikes. The main reason behind this transition has been the ever growing pressure by the government and lobbyists against the two stroke bikes abandonment on account of the environmental hazards it poses. About twenty-five percent of the fuel and other oils consumed in the two stroke engine emit as hydrocarbon emissions in the year.

Another factor leading to the increasing propaganda against two stroke dirt bikes is ignited by the high levels of noise pollution it generates as compared to a four stroke dirt bike. It is argued that much power would be loss in trying to make the two stroke dirt bike quieter and thus, the two stroke dirt bike engineers have taken little or no initiatives in this regard. Furthermore, the government authorities argue that the loudness is an objectionable quality as it disturbs the animals while these bikes are being used for off-road tracking. Moreover, two stroke bikes are widely being replaced by four stroke bikes because of their high running and maintenance costs.

Both two stroke and four stroke dirt bikes come in same engine sizes from 200cc up to 600cc but, a 200cc two stroke engine is twice as powerful as a 200cc four stroke engine as it fires once in every revolution. Furthermore, it packs higher weight-to-power ratio since it is lighter. Another important plus point of the two stroke dirt bikes is the fact that it has a simple design which not only makes it less expensive than the four stroke dirt bike, but also enables it to be operated in different orientation. Thus, riders tend to prefer the two stoke engine over the four stroke engine for its power, design, cost and more specifically for off track usage. The two stroke dirt bikes dominate the super cross classes of motocross because of their light weight and high speed.

The types of the dirt bikes have a number of significant similarities as well as differences but the essence of the comparison lies in the user preferences and usage. While two stroke motor bikes are best suited for Motocross and Supercross for their high performance and light weight, the four stroke dirt bikes bag the superiority status in endure and trail circuits for being heavier and less nimble.

To conclude, two stroke dirt bikes posses twice as much power as the four stroke dirt bikes as its engine fires and the spark plugs ignite once every revolution of the crankshaft. Moreover, it involves a simpler process with fewer parts which leads to low maintenance costs. However, two stroke dirt bikes need regular maintenance and rightfully accused of creating abnormally high air and noise pollution. In contrast, four stroke dirt bikes employ a better use of gas, give off lesser smoke and most importantly, last longer. The four stroke dirt bike is not free from defects or disadvantages either. They are complicated in nature as they involve more parts to attend to and only fire once in two revolutions which make them half as powerful as the two stroke engines.