

4-Cycle Tips and Tricks

In low horsepower spec motor classes making the best use of the horsepower you have is the most important thing. Inefficiencies in the drivetrain and chassis configuration eat up time on the track. Here is a checklist of things to go over on your set-up.

General Motor Maintenance:

Oil should be changed after every day at the track. 15 U.S. Fluid ounces or 443ml. B&S suggests well known synthetic oils. I use Mobil 1 5w30

If you don't have one, get the magnetic drain plug.

Make sure the pulse tube for the fuel pump is not filling with oil. Make sure it is lower than the fuel pump itself so the pump does not fill with oil.

Wire tie the exhaust bolts in such a way as to keep them from rotating loose from the heat and vibration.

Add a wider flat washer on the exhaust bracket mount to give it more surface area to absorb the vibration.

Use a wide chain guard to keep your suit clean.

Clean the air cleaner often. Let it dry, then spray a light coating of K&N air filter spray on it.

Drivetrain:

No kinks in chain and chain is clean. Chain should have about 2cm of play up and down for tension.

For multi-piece motor mounts- make sure the engine is aligned on motor mount. The torque and vibration of the motor will have a tendency to pull it off center over time.

Clutch should be clean and dry of any lubricants. If the clutch has a plain bearing/bushing, a light coating of thick grease should go on this to keep it lubricated.

Gearing-The LO206 motor has an electronic rev limiter pre-set at 6100 rpm. Ideally, you want the motor to just reach the rev limiter at the end of any given straightaway. Depending on head wind, the motor might reach the rev limiter on one straightaway but not the other. Sometimes the draft will also cause you to gain more speed and you will end up bouncing off the rev limiter so gearing for this occurrence is sometimes needed for racing. I have run ratios between 16/57 (3.56:1) to 16/62 (3.875:1) at Strathmore Motorsports Park and depending on direction.

Chassis:

Tires should be equal circumference from left to right. If your alignment is set and the kart pulls to the left or right on its own, then a tire on one side is probably larger. Inflate the smaller one and leave in the sun to stretch until equal.

Typically you want as much grip as the chassis can generate to be able to carry your speed through the corners without lifting off the throttle. Front and rear ride height (ground clearance) will be set as high as possible. If you have understeer(push) then lower the rear. If you have oversteer(loose) then lower the front.

Bearings – All wheel and axle bearings should be free running and noise free. This is one of the biggest horsepower drains. The rear wheel axle assembly, ready to race, should rotate freely with no resistance.

Axle should be true with little or no run-out. Any out of roundness of the axle will be magnified at speed and drag power out of the motor. A bent wheel will do the same thing.

Make sure the axle cassette height is set the same on both sides of the chassis and that the bearing does not have any slop in the cassette.

Steering assembly – All steering componentry should not have any play in them. Replace worn rod ends and make sure the steering wheel hub is tight. Any significant play here will make it difficult to carry speed through the corners consistently from lap to lap.

Floorpan—This is a stress member of the chassis and serves a purpose other than keeping your feet from dragging on the ground. A floorpan with a bolt missing or broken piece on one of the front attachment points will affect the handling. All bolts should be in place with a plastic/nylon spacer between the floorpan and tab to allow some flex in order to preserve the floorpan.

Seat-This is also a stress member of the chassis. Fibreglass seats come in different stiffnesses and will affect the handling in different ways depending on the chassis manufacturer. The seat should not be worn through or have holes on the bottom as this will make the seat softer than originally intended. Quarter inch rain drain holes are okay. Seats that are cracked on the side also need to be repaired or replaced.

Seat struts-pretty much every chassis will need at least one seat strut on each side of the seat. The seat struts will allow the driver's weight to transfer to the outside rear tire more effectively through a corner and will also help release the inside rear tire to free up the chassis.

Tires-The Vega Green tires are very consistent, last almost forever. Tire pressures will vary between 14 and 16 lbs from chassis to chassis and also depending on the raceday air temperature. More air generally means more tire temperature. If the tires are squealing around the corners then they need more air pressure.

Updated June 8, 2020 – John Kwong