



*Manufacturers of Cylinder Sleeves Since 1945*

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## 4-STROKE BREAK-IN PROCEDURES

L.A. Sleeve sizes its cylinders to extract maximum horsepower. Due to this, it is necessary to run your motor through a break-in process. Four stroke motors also need to have the rings seat. If you do not allow the rings to seat you may experience excessive smoking. Use petroleum product for break-in. Do not use synthetic oil. We recommend using Diesel engine oil RPM Delo 400 15/40 or Shell Rotella T 15/40. After break-in, we suggest you use Kal Gard Pro Comp 4 10W40 synthetic lubricant.

1. When setting up the motor to start the break-in process, set up two fans, one from the front and one blowing across the exhaust head pipe.
2. We recommend running the main jet two sizes larger and the needle clip one richer (one position down raising the needle) than normal through the first tank of fuel.
3. Set your motor at a high idle about 2000 RPM's and run the motor for about fifteen minutes straight without shutting it off. Do not whip the throttle or vary the RPM's. After fifteen minutes, shut the motor off and let it cool completely. Repeat this cycle one more time. We like to heat cycle the motor several times before riding. Next, with the fans set up, start your motor and run for about 10 minutes (run the RPM's from 1500 to about 3500). Don't be alarmed when doing this; it is normal to see the head pipe glow red.
4. The first ride should be easy not to exceed half throttle or half RPM's (about 4500), ride for about ten to fifteen minutes like this. Through the break-in process, never run your motor at a constant RPM for longer than 100 yards. You should be accelerating or decelerating. This does make it hard to break-in the motor on a flat road, as you may have a tendency to cruise down the road. It's just easier to ride off road where you can accelerate or decelerate. Let the motor cool completely before riding again.
5. The next ride you can go up to  $\frac{3}{4}$  throttle and  $\frac{3}{4}$  RPM's. After that, for the next ride and balance of the first tank of gas, you can go to full throttle but do not rev out the motor, short shift at about  $\frac{3}{4}$  RPM.
6. Jetting needs to be checked after you run the first tank of fuel through the motor. You should not have to run the motor hard enough during the first tank of fuel for jetting to be critical.
7. Replace the spark plug with a new one. Ride the bike for five to eight minutes at a moderate pace, vary the RPM and shift up and down the gears. Once the engine is up to operating temperature you can make a jetting pass. Start in second gear and ride at full throttle through fourth gear, fully revving out fourth gear. With the throttle wide open in fourth, hold the kill button down, pull in the clutch and stop. This is called a "plug chop".
8. Read the spark plug. With a pocket flashlight and a magnifying glass, look at the porcelain part of the plug only. As you view the plug from the center electrode, look down the length of the porcelain to its base, at this point there should be a dark chocolate colored smoke ring. There was not sufficient time to thoroughly color the whole plug, so the nose of the insulator may still be white. As long as there is a visible dark ring at the base, everything is fine. Remember, we want break-in jetting so the plug should read rich/dark. Richen the jetting as necessary. If you are having a hard time reading the spark plug, after the jet pass put the plug in a vice and hacksaw around the plug at the washer. Break the threads off with vise-grips, and the porcelain will be easy to read.
9. We recommend you re-torque your head and check or re-set your valve clearance after the second tank of fuel.

### Cylinder Head Torque Spec.

- Raptor 660 Cylinder 30 ft lbs 7 ft lbs on Allen bolts, Cylinder 27 ft lbs and 7 ft lbs on rocker cover bolts.
- Raptor 700 25 ft lbs on bottom bolts.
- LTZ/KFX/Arctic Cat 400/440/453 kit 33 ft lbs and 7.0 on 6mm bolts
- YFZ450 35-38 ft lbs and 7.0 on 6mm nuts
- TRX/CRF450R 40 ft lbs
- 400EX cylinder head nuts 33ft lbs and valve cover bolts 8mm 17 ft lbs
- 250F'S 35 ft lbs