



## **Engine set up Guide** **Read Fully Before Continuing**

Congratulations on your purchase! You have chosen wisely, the Engine you have bought is one of the best available. We put every conceivable effort into the specification and sourcing in order that you enjoy your machine to the full.

We usually get asked the same questions over and over. So we have put this page together to answer some of the most frequently asked questions.

Hope it helps you out, if not we are still always on the other end of the phone or email if you are still stuck:  
[gary@ridestomp.com](mailto:gary@ridestomp.com)

### **TAPPETS**

Set valve clearances on ALL engines. This will need to be checked on all new engines and also at your regular service periods. This will help you get the most out of your engines performance so it is good practice to keep on top of this. Out of spec tappets can give the symptoms of many faults, a good 20min of your time will keep you on track longer and less time in the pits.

Symptoms of a tight tappet can be:

- Cutting out when hot.
- Back firing through the carb whilst idling.
- Difficult to start.
- Low compression.

We recommend to set the valve clearance to 0.004"(0.15mm) inlet and 0.006"(0.20mm) exhaust for optimal range.



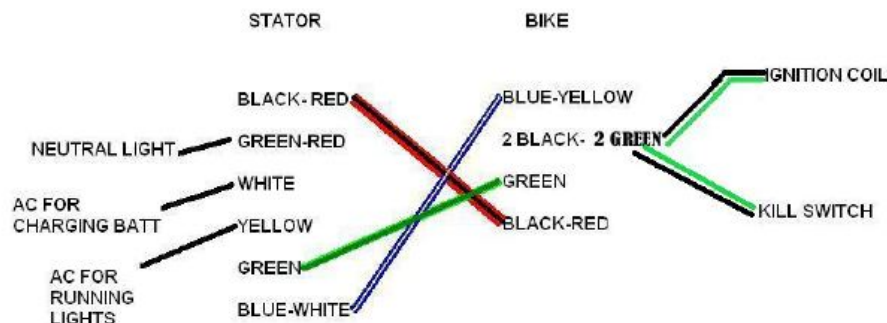
Remove generator cover, valve caps and spark plug. Turn the engine to the T mark, watching the rockers. If they are rocking on the T mark, turn the engine another 360 deg to the T mark. This is the firing stroke.

Undo the locknut on the inlet rocker. Wind out adjuster. Put the feeler gauge in between adjuster and valve. Wind down the adjuster to the point of contact, back off quarter of a turn, and tighten locknut. Check resistance on feeler gauge and repeat process for exhaust.

## **Basic off road engine to bike wiring**

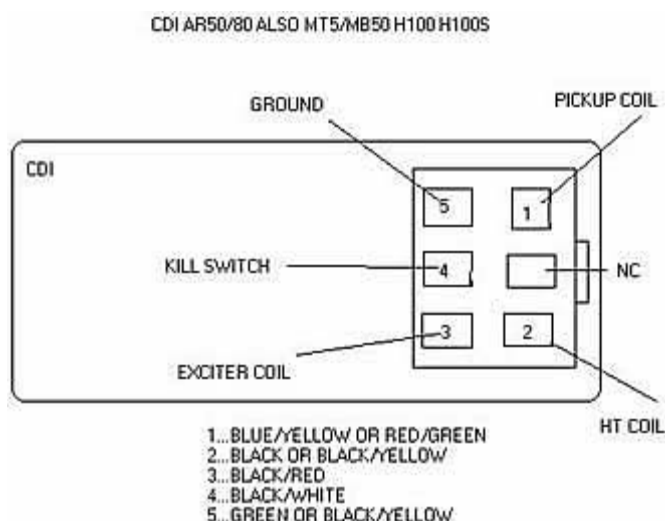


## CRF50 & XR50 WITH OUR (ALTCDI) STATOR



THIS STATOR IS THE SAME AS MOST ALL LIFAN AND ZONGSHEN

### The CDI unit



The CDI itself is really just an amplifying switch with time delay. It sits there storing up electricity in a capacitor (ie the "C" in "CDI"), then the pulse sensor spikes the input, the CDI waits a small amount of time and then puts the burst of electricity it stored into the coil. That small amount of time represents the advance curve of an engine, ie at idle an engine may need 10 degrees advance but at full revs it may need 40 degrees advance. By delaying the signal and having the pulse sensor in the right place, the CDI can make sure the engine is getting the right advance curve.

### Pulse coil (Pick-up Coil)

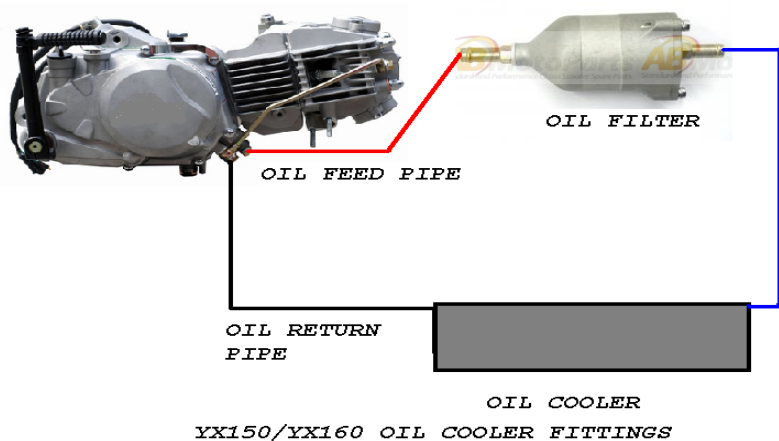
Another coil, but only a small one. It too has a magnet spinning near it - but the magnet only passes by the coil once per revolution and it's a really small magnet. This means that most of the time there is no electricity flowing in the pulse sensor - but when the magnet passes by the coil, you get a tiny spike of electricity. This tells the CDI to make a spark as the magnet is cunningly positioned so that the spike hits the CDI at just the right time. Make sure you have a 0.015" thou 0.40mm air gap.



## YX 150/160 OIL COOLERS

An oil cooler on these high performance engines is very important. Keeping the oil temperature lower on these engines will help, not only with the performance, but also help the life of the engine. On the YX range of engines there is a small link pipe on the oil cooler outlets on the bottom of the Engine. To run a cooler you must remove this and screw in the oil cooler fittings that are supplied in the engine kit. These must be plumbed up the correct way via the external oil filter. **If you fail to do this then you will stop the oil feed and cause serious damage to your race engine.** If this happens you will void your 28 day manufactures **warranty!**

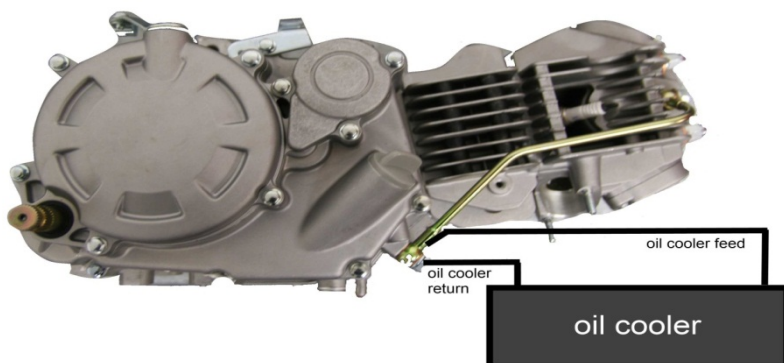
Please take a look at the following diagram:



**Caution! If you choose not to run a cooler please leave the link pipe in place. If you do not, you will restrict oil flow and cause serious engine damage!**

## Oil cooler Z155

Z155



**Warning! These engines come WITHOUT link pipe fitted! Running the engine without a oil cooler or a link pipe will cause major engine damage and also void any warranty! You Have been told!!**

Fitting a oil cooler to the Z155 race engine is the same as the YX150/160 as above. The only difference is there is no external oil filter. (The z155 has an internal oil filter that should be changed with every oil



change at a max 5 hours riding time.) So simply remove the two bungs on the bottom of the engine and screw in the two oil pipe fitting.

And then connect the oil cooler pipes.

## **Engine break-in ALL ENGINES**

Run bike at no more than 2/3's throttle & do not allow engine to rev to a high speed. Engine break-in should be no less than 2 hours.

### **2 Hour Service**

- After 2 hours carry out the following checks & procedures:
- Drain oil & replace with **Putoline DX4 semi synthetic 10w 40 4-stroke engine oil**
- Check all nuts & bolts & tighten where necessary (use PDI data as reference)
- Check flywheel nut
- Check spark plug gap ~0.6mm-0.7mm
- Check Tappets : INLET 0.15MM EX 0.20MM

### **Riding Tips For Long Engine Life - IMPORTANT**

- ü Do not over rev your engine as you may cause damage to valves. Under load the engine is capable of revving into major valve bounce that can cause permanent damage to your engine. If you feel the power dropping off or start to hear valve bounce it is critical that you change up a gear or ease off the throttle.
- ü It is good practise to carry out the above checks on a regular basis, ideally each time you ride your machine. We advise an oil change after every 5 hours use.
- ü Do not stamp through the gears – always use the clutch.
- ü If you miss a gear do NOT stamp into gear from high engine revs.
- ü Do not drop your clutch heavily, or slip it unnecessarily.
- ü Do not allow your air filter to fill with fuel.
- ü If the engine back-fires while the air filter is filled with fuel, it may ignite – check air filter regularly while riding.

### **Problem Solving:**

- × *Exhaust Glows Red (fast tickover)* – Carburetion too lean, richen mixture via raising needle
- × *Engine misfires at mid to high engine speed, open throttle* – Mixture too rich, drop needle
- × *Engine Pops & bangs on over-run* – mixture too rich, drop needle
- × *Engine kicks back hard whilst starting* – Ignition too advanced, or mixture too lean
- × *Engine difficult to start* – engine flooding or mixture too rich – check float height
- × *Weak Spark* – Pick-up coils too far from rotor (where inner rotor kit fitted) or bad earth
- × *No spark* – Either poor earth or faulty Rotor Coils/CDI/Coil/Lead/Cap/Plug – use moving coil multimeter to diagnose
- × *Fuel leaks from overflow* – Floats set incorrectly or blocked by debris or sticking
- × *Engine runs fine, but then starts to misfire* – faulty rotor coils/CDI/Coil/Plug
- × *Rattles from engine* – Tappets set incorrectly
- × *Engine will not tick over when warm* – tappets set incorrectly
- × *Engine will not return to idle & races* – sticking throttle cable

### **Correct jetting**

Take out the spark plug and check the electrode; the colour should be golden brown.(SEE PLUG GUIDE ABOVE!) If it is white, the engine is running too lean (not enough fuel). If it is black (sooty colour) it is too rich (too much fuel). If it is white & black, the engine is VERY lean & causing misfire, which you should be able to detect whilst riding. As your jets are close to what they should be for the UK, minor alterations can be made by adjusting the needle height on your carb, without the need for different sized jets.

To add more fuel, raise the needle one notch. This is achieved by removing the carb from the engine, removing the throttle slide, removing the needle & adjusting the position of the circlip. Conversely, if you need to reduce the amount of fuel, drop the needle one notch. Re-assemble the carb & continue testing, remembering to check the colour of your spark plug.

Once you have achieved the correct full load fuelling, you can set the idle mixture screw. The 140 engines like to run very rich at idle, this way you get a clean progression from idle jet to main jet. To achieve a richer mixture, turn the air screw (next to filter) clockwise. Idle speed may need to be adjusted at same time to keep engine running.



DRATER