

Part Two

Yamaha 500 XT/TT/SR Rebuild

In Part 1 of this engine rebuild series, we went through the basics that you would need to get started - so now let's get the show on the road.

Firstly, in regard to any Yamaha 500 engine rebuild, I prefer to use the SR500 'road' unit, as it has slightly longer cooling fins, a 2mm bigger inlet valve (as did later XT/TTs) and most importantly - a pumper carb teamed up with CDI ignition that really works quite well - great for a VMX bike.

Moving to the bottom end, the early SR had heavier flywheels as well (4mm bigger in diameter) and a steel band around the clutch basket that meant it became virtually bulletproof.

riding to tell you guys that a 'half baked' rebuild is a misery. Now guys, it's 2007 and parts cost more now than in '76, but these 500s, even hotted up, are still cheaper to maintain and are more reliable than any new competition dirt bike available today - Japanese or European.

The quality of rebuild we will show you is rarely seen in any shop, you would need to find a reputable national level engine builder and pay approximately US\$7,000! File these rebuild articles, as what you're reading is the result of years of R&D with a state of the art Dyno cell, testing everything, then designing our own engine parts. I did this for Ken, VMX and YOU, not for the money! This is secret men's business!! Now, off to the shed and the bike.

Undo all the engine mount bolts, split the joining link on the drive chain, drain the oil from the frame and motor, undo oil lines, undo all electrical plugs from the engine and undo the carby clamps. Remove the exhaust system and remove engine from the clutch side of the frame. Then undo the clutch cover (points as well on XT, TT), and remove spark plug and tappet covers. Now turn the engine over until it's on Top Dead Centre on the compression stroke, (if in doubt, check the manual that I am sure you have bought!!) then undo the head nuts and the three Allen head screws on the rocker cover. It will be stuck down because of gasket goo - so, look near the exhaust tappet cover area and you will see a little "ledge" near where the decompressor bracket bolts on. Put a big flat head screwdriver under this ledge and tap upwards with a hammer then gently prize the cover upwards, trying not to ruin the rubber on the kick indicator window as the rocker cover lifts up.

With the clutch cover off, remove the clutch pressure plate (6 x 10mm bolts) and remove it and the six springs as well. Now remove the front generator cover on the chain side of the engine.

At this point, if you do not have an air impact (or rattle) gun go to your friendly, local motorcycle shop and ask them to undo the cam sprocket bolt, left and right hand crankshaft nuts, clutch hub nut and countershaft sprocket nut as well. Also, ask them to remove the flywheel (make sure they only use an internal thread puller - it's a common tool). If you have been a good customer, it will only cost half an hour's labour but save you lots of grief.

But, if you have been very loyal to said shop you will get it done on the spot and probably for free (it pays to support one shop). At this point you can decide if you want to split the bottom end apart yourself, or get the shop to do it - again, it's not that expensive. I'll throw in the reminder again that a workshop manual is a good idea!

With the cam sprocket bolt undone you can undo the tensioner and remove the cam and sprocket as well. Undo the Allen head bolts front and rear of the cam chain tunnel and the nut near the spark plug. Now you can place a small block of softwood against the head, camchain side is good, and tap the wood with a hammer to break the seal on the head gasket. Then lift and wiggle off the head from



This is our minimum layout of parts that are required for Stage 1 rebuilds and it should be your minimum too.

As a generalization, the 'donor bike' will ideally have low genuine miles/kilms and if possible no 'ticks or clatter' from the top end. Check around the cases for evidence of previous strip downs etc, remember these bikes are on average twenty-five years old and that leaves a lot of scope for bad repairs, merciless thrashings and the like. That is why we (and you) should always do complete engine strip downs and complete rebuilds only!

It is very rare that any previous engine rebuild would have encompassed any more than a re-bore and piston and possibly a cam chain. Usually any head work was just a basic seat cut and valve re-face, done by the cheapest reconditioner in town who may not realize that clearances in bike engines are much tighter than old V8s. I have seen so many freshly rebuilt bike engines blowing a little smoke when cracking the throttle open when stationary, or a faint trail of smoke whilst