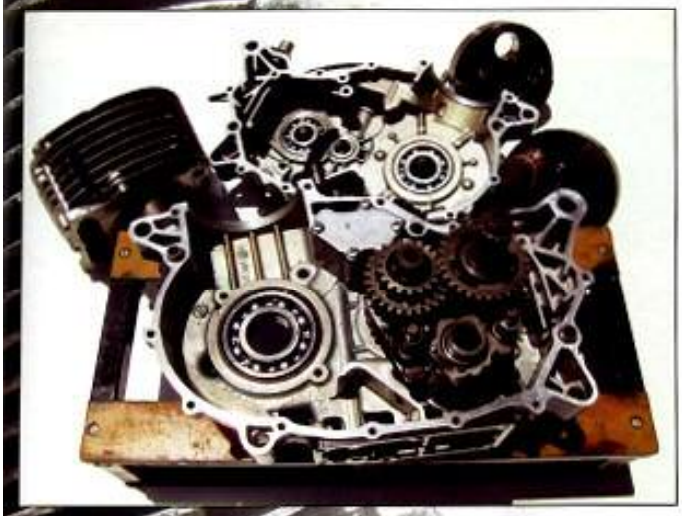
Part One

Yamaha 500 XT/TT/SR Rebuild

I have been working as a bike mechanic for almost thirty years and that amounts to countless motor rebuilds and the chance to build some really special bikes, many based around the venerable Yamaha 500 four-stroke single. I bought my first 500 Yam in 1984. It was badly smashed and a dog had eaten most of the seat. But I rebuilt it, registered it and so began an affinity with its nature and 'character'.

Being a single, it is a perfect choice for research and development. Every crazy idea has been tried and tested on this model. That R&D is still an ongoing happening at my shop, Caferacer, in Wattle Flat, NSW. Yes, we do motor work and complete bike projects for off-road and on, but don't let that Caferacer name fool you, some of our best projects are indeed dirt bikes. Just to set the scene a little on where our R&D has been heading in the last few years – on the tar first of all. A converted XT500 with our engine won the 500cc class, in Unlimited "Period 5", and came third for the year in Supermono in Victoria, against bikes more than double the capacity.



Off-road, the results have been equally impressive. Just recently I was told that two bikes, equipped with our motor parts ran away with the Tassie State VMX title, half a lap in front, with strong opposition from big name Victorian tuners and their young whippet riders.

Our Stage One HL500 (with a stock SR500 carb) ran rings around another "highly tuned" HL500 at Classic Dirt 2, with our man Peter on board, and at 110kg, Peter isn't exactly the lightest 'jockey' around!

Many, many of our engines (not just Yam 500s of course) are powering around Australian roads and race tracks (dirt, road and longtrack), from Western Australia to Cairns in the north and down the east coast to Tassie, giving owners immense joy every time they choose to crack it open.

So, when VMX approached me to put together a series of articles on rebuilding the Yamaha 500 for 'power and reliability', I jumped at the chance to share some of the experience and knowledge that goes into every one of my motor rebuilds. I am still amazed at the following the Yamaha SR/XT/TT 500 has across the world. And no wonder, as it responds incredibly well to a good rebuild that can give you more than double the rear wheel horsepower. Even better, it doesn't have to cost a fortune, it will be reliable, and it can be achieved by you at home, with only a bit of help from people like me for the "sticky bits". But that's it, it's really not that hard.

Oh, and the "healthy" Stage 2 engines readily dispose of the likes of YZ426s - don't scoff, these claims are all backed up by Dyno results, not suburban myths!

First off, don't be scared of a project. So many of you have more talents than you probably give yourself credit for - think of all the brackets and other odd bits you've made over the years. Maybe you did the welding chores as well, or got a friend or the local fabrication/welding shop to finish it off but you probably did all the hard work. We have seen these engines in just about every frame you care to mention - pay attention to the chain alignment and you're on the home straight.

So whether you want to put a Yamaha 500 motor in a Montesa frame, an HL replica, a Husky frame or whatever, we've "been there and done that". Most have been done with just a handyman's tool set by the way, not a shop's setup. Or you may just like to borrow my friends' (Scotty and Alan) experience with cutting and shutting an XT/TT chassis to handle as well as pretty much anything – that is also not beyond you at home.

Over the next two issues, we'll show you a complete XT/TT/SR engine rebuild and standard chassis modifications that are proven trophy winners, year in, year out. You will likely find some good advice in there for many other four-stroke single rebuilds as well.

For now, we'll just get you ready by providing a brief rundown on what you'll need to tackle the sort of work we will be outlining in the coming issues. Basic stuff in many instances and you'll likely have most of it already (we're going to assume that you already have some decent spanners and screwdrivers!):

- a good 3/8" drive socket set, [single hex 6 sided sockets are good for bikes]
- a rattle gun [or air impact gun] is very handy but we can get around that later
- a large sharpening stone
- a torque wrench [or a mate's one] and note that even cheap torque wrenches are usually accurate enough in the 18 to 40ft lb range required for motorcycle work
- a couple of good quality long Allen or Hex keys - 5mm and 6mm for these engines
- a copper or plastic "dead blow" hammer is a great investment for all mechanical work, and finally,
- a cheap valve spring compressor is good, but we can work around that part later too if you don't borrow/buy one.

The Yamaha 500 motor is fairly straightforward - so if you have stripped a two stroke down before, you will have most of the skills already as the 500 is split vertically down the middle as well. Last of all, workshop manuals are still in print for these engines from Clymer and Haynes etc, so go out and buy one! The project will run even smoother with the hints and help that these well worked out publications offer on many levels.

Words and photos by Carl Batey