

How to make a Snail's Ear into a Silk Purse

As promised in the last issue, another article on engine tuning (there's no excuse now, you know).

This article was written by Peter Reason of 17 Darracott Close, Deal, Kent CT14 9PU and describes some of the tuning modifications he made to his engine. Unfortunately, Peter has now sold his Lomax and bought a Lotus 7 (What a comedown!!), but says he would be happy to give advice or help anybody contacting him. Since writing this, Peter has come up with a few alternative thoughts which I have added to the end of Peter's original text. So, over to you Peter!

"Although we were very pleased with our Lomax 223, we found the sight of the rear ends of lorries a little boring after a while because the Lomax was lacking in the 40-60 mph acceleration range, so we decided to see what we could do about it. Fortunately, the local breakers yard appears to be a breeding ground for spare Lomax engines. Upon acquiring an engine and reducing it to its component parts, the first thing we did was lighten the flywheel. (NOTE: Before removing any metal, drill the 6mm timing hole in the back of the flywheel another few mm deeper so that it will not be lost when metal is removed). If you turn the back rim off the flywheel, (ie. side facing engine) this will remove approximately 4lbs. I have been told by Graham Harper that you can remove another 3-4lbs above the clutch holding bolts although I have not done this yet. The other thing to do on completion is to rebalance the flywheel. For this I used a Black and Decker Workmate which has an adjustable slot in the top, and two steel rules."

"The next step was to have the barrels bored out to take 652cc Visa pistons. I used second-hand pistons, but apparently Mahle make spare pistons this size. If you are using second-hand pistons, new rings can be obtained from branches of Edmonds Walker Ltd."

"When having the cylinders bored, get the re-borer to take the initial cut 10 thou under finished size, release the clamps on the barrel, re-clamp and finish bore (2-3 thou over piston diameter). This double boring of the cylinder prevents distortion as the cylinder walls are fairly thin after taking out 3mm. Fortunately the gudgeon pin diameters are the same and the pistons will fit straight onto the standard rods. I also removed a band of metal 10 thou deep by 3/16 in wide from the top of the piston where this comes up under the edge of the cylinder head. This is to give a reasonable clearance when the engine is running."

"Next step! We took the camshaft to Piper F.M. Ltd, Ashford, Kent, where for the princely sum of £52.40 (inc. VAT), and only a weeks wait, they re-profiled to a high-lift Ford hot road grind with timing of 24-62."

"We then purchased two second-hand Dellorto 30mm motorcycle carburettors. These are ex-Moto Guzzi 850/1000cc motorcycle parts and come as a handed pair and with them you require TWO RIGHT-HAND ONLY Moto Guzzi inlet manifolds. These carburettors are fairly easily obtained from Moto Guzzi breakers for an approximate cost of £30 per pair - see Motorcycle News for breakers. Now you need to make two adaptors from 1/2 in dural sheet to convert the three bolt fixing round bolt tract Moto Guzzi manifolds to two bolt oval tract Citroen cylinder heads. This I found NOT EASY! requiring the use in approximately equal amounts of engineers' blue and blue language!"

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"I then took the manifolds, roughed out adaptors, and stripped cylinder heads to B.V.R Racing where for £75 (inc VAT) he did an absolutely superb job of gas flowing both heads complete with manifolds and adaptors. This included grinding the valve seat inserts where they protrude very badly into the gas flow. On rebuilding the heads, I used Visa outer springs with 2CV inner. To fit the Visa springs to the head, I had to grind the outer circumference of the bottom coil so that it would fit in the spring pocket in the head. These springs are appreciably thicker than the 2CV item and therefore, hopefully prevent valve bounce at high R.P.M."

As I said above Peter has come up with a few changes to his original text. These are:-

- a) use the original 2CV valve springs rather than change them for Visa items.
- b) use the original camshaft although if you want to raise the rev limit have a rally grind as opposed to a fast road/race one.
- c) turn down the base of the barrels to increase the compression ratio but be careful to ensure that the pistons do not come into contact with the head/valves when you have reassembled it.
- d) when using the Moto Guzzi carburettors, raise the needle by one notch.
- e) after doing these mods you will have to retard the ignition 3-4 degrees.
- f) on reassembly make sure that the heads are fitted perfectly square on the barrels.
- g) Peter recommends that after doing all of the above work, you should use Mobil 1 oil, a little pricey but worth it, and fit Lomax free-flow twin pipe exhausts.

After you have done all of the above modifications, you should have an engine which a greatly improved power output, in fact according to Peter, you should be able to outrun an Escort 1600!!

A few words of caution to anyone contemplating tuning their engine in this way. Derek Smith has mentioned this mod to Roy Eastwood, proprietor of ECAS and a 2CVGB member, who has told of stories of seized tuned engines (OUCH!!) when Citroen twins have been so modified. You have been warned!

I said at the beginning of this article that Peter no longer has this car, having sold it back to Lomax. They, in their turn, have sold the car on. But they still have the engine!! David Lowe has implied that if there was enough demand, that Lomax might just be persuaded to make up sets of inlet manifolds based on Peter's originals. So give them a ring and exercise the power of the consumer.

For those of you who wish to go even quicker and have pockets deep enough to afford it, you will find elsewhere in this issue an advert for STP tuning parts which are now being distributed in the UK by Peter Bird's Falcon Design concern. He has told me that for the very well-heeled (and with rubber underwear) it is possible to build a 1600 GSA engine which liven things up quite considerably.