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LOTTA BOTTLE!

DO POWER KITS REALLY WORK?

VARIOUS MODELS of Japanese two stroke machines, in particular dirt bikes, are being sold with an auxiliary chamber coupled to the induction tract. They are called boost bottles and are claimed to improve both part throttle performance and torque.

Never slow to catch on to the potential of sales of easily fitted performance accessories, various manufacturers have produced kits which fit on to standard road-going bikes. The claims of performance improvement are similar to those made by the manufacturers who fit them as optional extras.

We tested two different types. Both were tested under conditions as similar as we could arrange. We carried out the tests on an LC Yamaha as this is going to be one of the most popular machines on which the bottles are likely to be fitted. The types tested were: Fresco power boost bottle kit with reed block spacer and SM racing double header bottle.

The kits differed in as much as the Fresco included two separate aluminium bottles which are connected to the inlet tract by an aluminium spacer block. To fit the kit you have to remove the carbs. The aluminium spacer block fits between the reed block and the carb rubber manifold.

A rubber hose is provided to connect the spacer block to its bottle. Worm drive hose clips are included in the kit to secure the bottle to the frame of the bike and also to secure the rubber hose to the bottle and the spacer block. Longer screws are also provided to fit the spacer block, as the standard screws would not be long enough.

The Serval Marketing kit does not feature a separate block to connect the boost chamber to the inlet tract. Instead the system which they use means that the balance tube, which is fitted to the LC to interconnect the two inlet tracts downstream of the carbs, is removed and the two pipes from the boost chamber are fitted into the holes vacated by the coupling tube.

From the aspect of fitting, the SM system is obviously much easier. There is no requirement to remove the carbs or to wriggle the air box backwards which, with its 9mm thick spacer block, the Fresco system demands.

On the other hand, the Serval system does not allow the use of the inlet tract interconnecting tube which Yamaha must have put there for a purpose and the

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volume of the boost chambers on the Serval system is less than on the Fresco.

Having selected two systems which featured significant differences in design, we were hopeful of being able to see useful differences in performance results. The results we achieved were not startling.

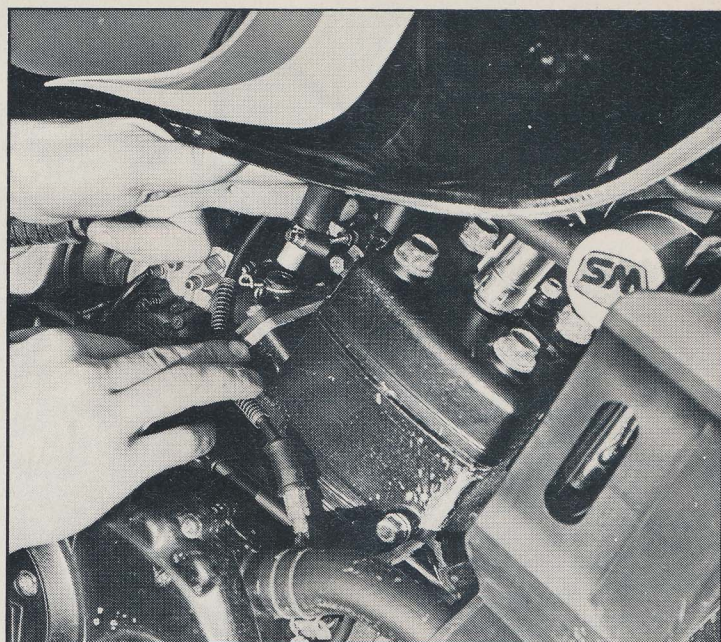
Our testing procedure required that we were able to accurately gauge throttle position. To this end we calibrated the twist grip and fitted an indicator so that it was possible to ride at $\frac{1}{4}$, $\frac{1}{2}$ or $\frac{3}{4}$ throttle repeatedly.

The tests we set up involved roll-on riding from 2000 revs in 4th gear at the three different throttle openings. The same test was carried out from 4000 revs and top gear roll-on from 30 mph for $\frac{1}{4}$ mile and fuel economy testing with normal riding over a repeat route.

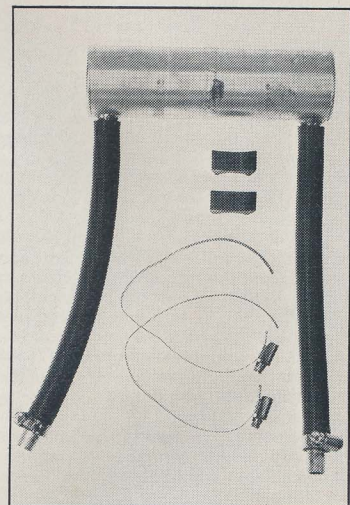
We conducted the tests with and without the bottles fitted, repeating the testing six times disregarding the highest and lowest figures and then taking an average of the rest.

It was recounted to us that the bottles act as a form of induction pulse chamber, but it would seem that if this were the case the lengths of the pipes involved in the kit could well have a significant effect on its performance.

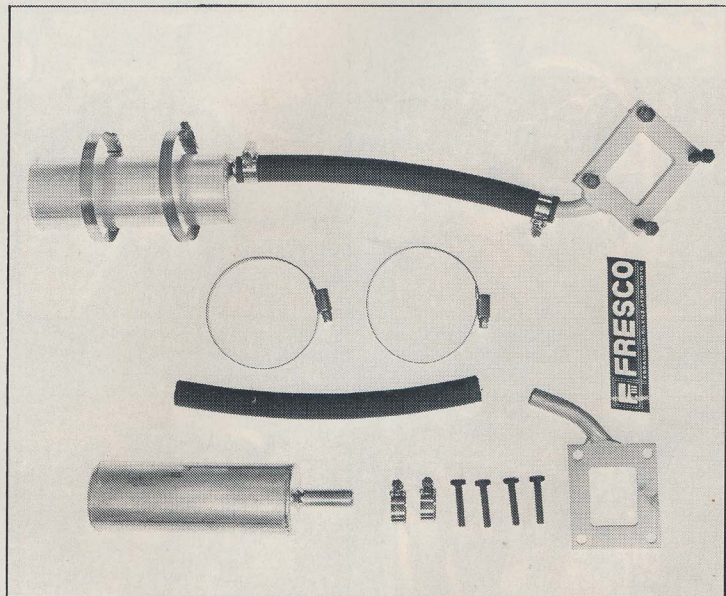
At $\frac{1}{4}$ throttle, the Fresco system does show a very slight advantage over the stock set-up. To cover 100 metres starting at 2000 revs in 4th gear as stock the bike required 8.1 seconds. With the Fresco kit this reduced to 7.9. On this test the SM racing system actually made the bike slower, requiring 8.2 seconds to cover the same test. However, on the top gear roll-on test for $\frac{1}{4}$ -mile



Above and right: The Serval double-header system combines the two boost chambers in one bottle which has a central divider. It connects to the inlet tract in place of the standard balance tube.



The Fresco system features two separate bottles. They connect to the induction tract through a spacer block which fits between the reed block and the inlet rubber.



starting from 30 mph our test did not reveal any significant difference between the stock bike and either of the boost kits.

Fuel economy did seem to be marginally better with either of

the boost bottle set-ups compared to stock. It could well be that this was an indication that the bottle kits actually tended to have a mixture weakening effect.

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