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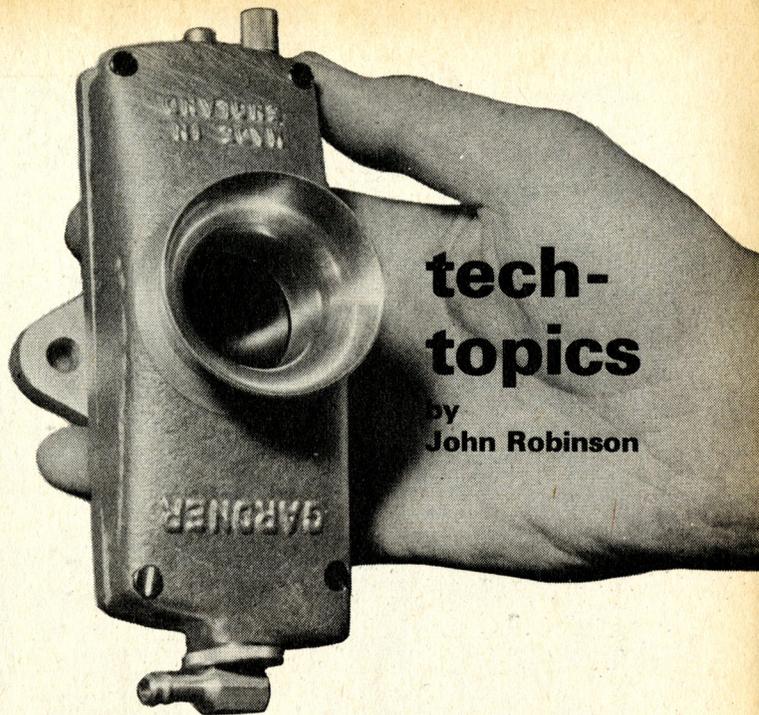
## DRESDA SPECIAL ROAD TEST

## HONDA 500-4 EXCLUSIVE



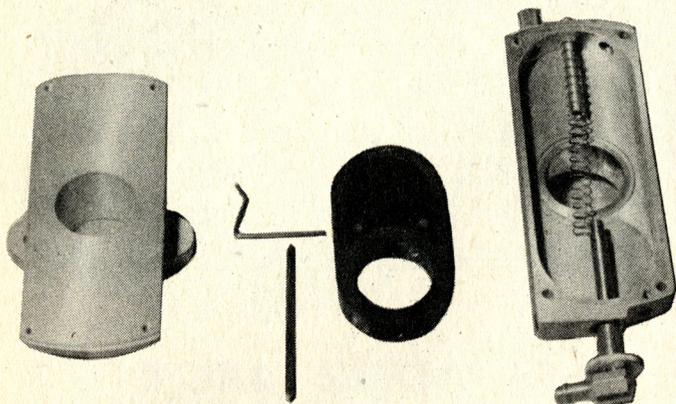
# GARDNER—

## THE JET IS SET



**tech-  
topics**

by  
**John Robinson**



**Last month I mentioned Gardner carburettors, mainly with the idea of comparing carburettors to fuel injectors.**

**However, I also said that as injectors were improved there was the possibility of a better carburettor being produced, and now Ron Gardner tells me he has one.**

He knew all along, of course, it's just that he likes to keep these things to himself.

The new model is really a development of their 400 series and is called, predictably, the 500 series. As the 500 was developed primarily for two-strokes, and mainly competition ones at that, it does not make the 400 obsolete and this range will still be produced.

The major changes built into the 500 are due to the different needle arrangement. The needle now moves with the airslide and the jet is fixed. This means that the airslide moves upwards and the cable now comes out of the top of the instrument.

We have a prototype model pictured on this page which was built using the old 400 castings and that is why the front section appears to be upside down. The profiled needle and its accurate fit into the jet tube are still basically similar to the 400 series.

The advantages of the new layout, particularly for scrambles and trials two strokes, are that it is more compact, easier to install without the jet block fouling the gearbox and can be completely sealed. Gardner has also found that the carburettor's characteristics suit those of high

performance two-stroke motors.

Tuning and adjustments remain as for the 400. All jet sizes are the same and once you've selected the right needle the only adjustment is to raise or lower the jet by means of a screw at the base. (Lowering the jet richens the mixture.) The screw adjuster has a flat on one side and there is a spring-loaded plunger in the base of the carb, which holds the adjuster in position and also clicks as it is turned. This is a help in tuning and also means that the carb can be stripped and then rebuilt with exactly the same setting, by counting the number of clicks.

Like earlier models the 500's performance depends upon the very accurate fit between needle and jet which gives extremely precise metering of fuel into the airflow. There is no "compensating" mechanism for acceleration because when the throttle is snapped open the needle acts like a plunger pump and brings excess petrol up to momentarily richen the mixture.

There are two other factors to consider when using the Gardner carburettors; the bell-mouth length and the float chamber. On normal production instruments there are two bell-mouth lengths available; as a rough guide Ron recommends the longer one for four-stroke motors and the short one for two-strokes.

All Gardner carburettors will run satisfactorily without a float chamber and this is even advisable for engines running on dope. Still, there may be problems connected with the changing head of fuel in the tank and the fuel has to be switched off the second the engine is stopped, so where petrol is used it is best to fit a float chamber. The float level, which is not too critical, should be set about  $\frac{1}{4}$  in. below the top of the jet tube.

Gardner started work on "a new carburettor" back in '68 and hit on the 500 design about 15 months ago. Since then the instrument has been tested rigorously on bench, road

and track under all conditions.

A selection of the machines used for testing are: 175 roadster Bantam, 125 racing Bantam, 250 racing Montesa, 250 trials Montesa, 250 scrambles Montesa and, just for a change, a 650 AJS roadster.

The general results are claimed to be clean carburation and pick-up with normally a slight increase in power and better fuel consumption than other carburettors.

The 500 series comes in sizes ranging from 25 mm (525) to 35 mm (535), priced from £10 to £16 which is the same as the 400 series. Heavy duty float chambers are also available at £8 each, or you can of course use your own—any remote float will do.

For full details of the complete range, send a stamped addressed envelope to the Gardner Carburettor Co Ltd, 45 Newport Road, Burgess Hill, Sussex, or better still, see them for yourself on John Tickle's stand (No. 51, New Hall) at the Show.



*Stages in the assembly of the latest Gardner series 500 carburettor*