MIKE HASWELL

# RACING ahead

# advice for new racers

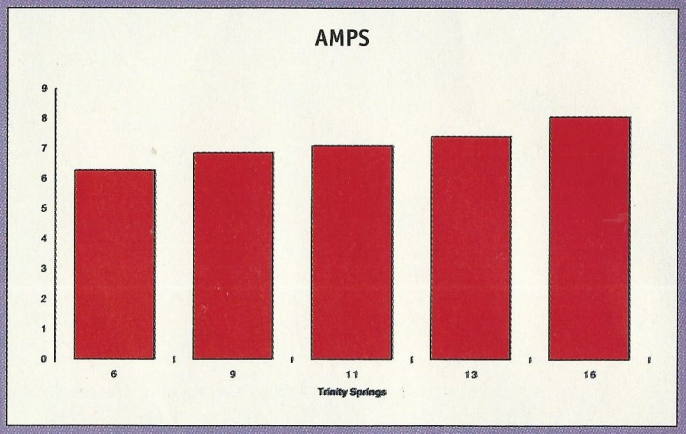
**THIS MONTH MIKE COVERS BRUSH SPRINGS IN THE 540 CLINIC**

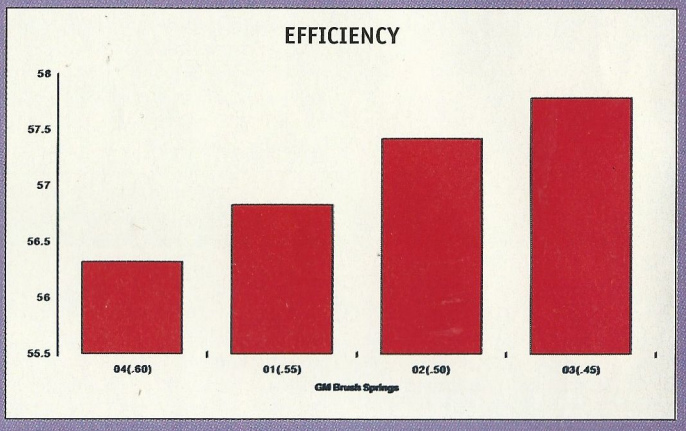
An area of the motor that is often neglected is the springs These are the very things that do the vital job of keeping the brush on the commutator and ensuring the flow of power from your batteries to the motor. All too often drivers don't even know what springs they are running and the standard reply is 'whatever came with the motor'. Most manufacturers have a 'standard' spring that they fit to all their modified motors and another for their stock motors

Here is what some of the major manufacturers are fitting to their hand wound modified motors as standard :-

GM - GMBS01
Orion - TM3103
Reedy - 741
Trinity - 4033/4389

Springs are made from steel, come in differing thickness and some are colour-coded, i.e.. Black, silver, copper, gold, etc. so that you can differentiate between them. They also come with differing amounts of pre-tension on them and this is expressed in degrees and can vary from 90 to 180 degrees, although 150 to 180 degrees are the most common.




Generally the stronger the spring is the more power it will put out (see fig.1), however if you go beyond a certain point then friction losses will cause a drop in power.

As you can see from fig.2 a stronger spring will also cause an increase in the current drawn. They will also provide slightly more torque, but the efficiency will decrease and wear the comm more. Fitting softer springs will reduce the current draw and increase the efficiency (see fig.3) but the brushes could start bouncing on commutator causing wear.

If you are running on a very rough surface then you might want to use a stiffer spring to prevent brush bounce and if you are running on a smooth surface (i.e.. On road) then you might consider going to a lighter spring. Also the weight of the car you are driving plays a part with spring selection, a 1/12th scale car weighing 879g will be able to run a lighter spring than a truck weighing 1700g.

That's all for this month, next month we will be looking at motor brushes. If there is anything you would like a further explanation on then you can e-mail me at Mike_Haswell@compuserve.com or MHasw50833@aol.com RRC!