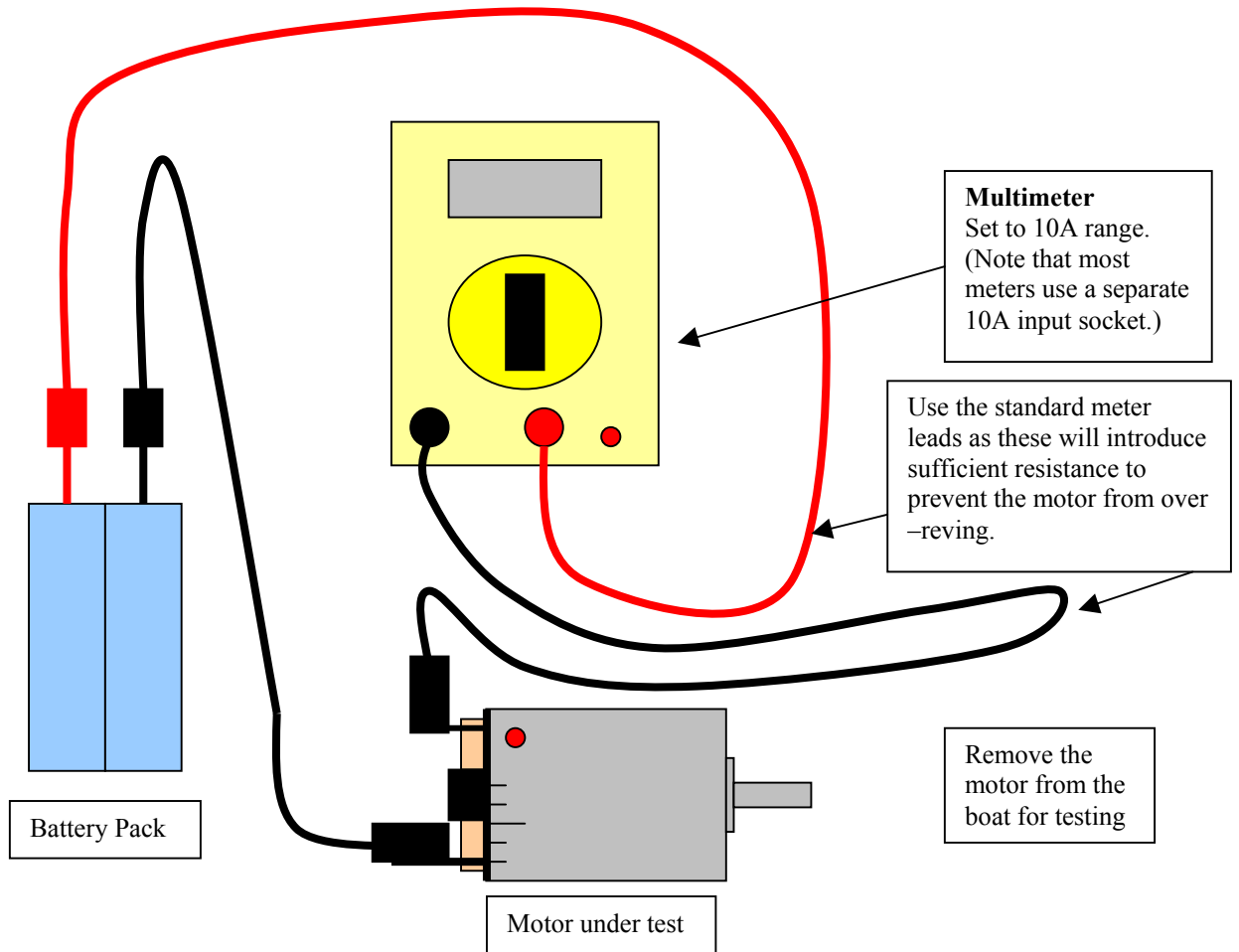
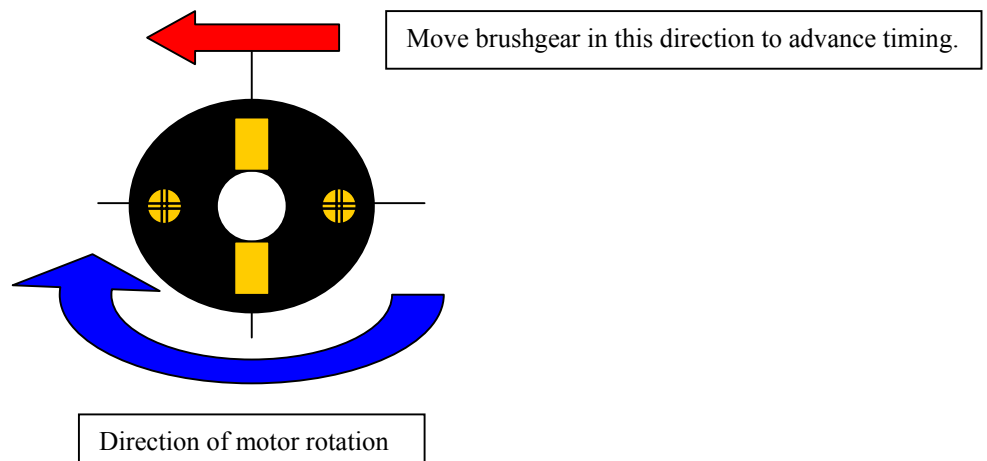


Adjusting the timing on a modified motor

Equipment set up



1. Before you start. Scratch a mark between the motor case and brush assembly so that you know how far you have adjusted the timing.
2. Run the motor and measure the current drawn.
3. Slacken the two timing screws and adjust the brush assembly in relation to the motor can for the lowest current reading on the meter. This is the zero timing point.



The zero timing setting will give you the most efficient set up and longest run time.

For additional power you can advance the timing by turning the motor brush gear against the direction of motor rotation. However, the price you pay is additional current from the battery and shorter run times. If you need to run large amounts of timing advance you should consider changing to an armature with fewer turns.

Moving the brush gear in the opposite direction will result in retarded timing. If the motor is retarded beyond the zero mark it will have less power and low efficiency. You should never run your motor with the timing retarded.

The exact amount of timing advance required can only be decided by measuring the run time. If your battery runs out of juice before the end of a race you need to reduce the amount of advance. If there is still plenty of life left in the battery at the end of the race you should consider advancing the timing to increase speed.

As a starting point, I suggest between 10 and 25 degrees of advance. Motors with a higher number of turns tend to need more timing advance than those with fewer turns.

When testing your motor you should hear it speed up as you advance the timing. The current drawn will also increase.

Because the motor current will increase and its efficiency decrease, the motor will run hotter. Check that the motor is not excessively hot after each run.

Reversing a modified motor

You may need to run a modified motor in reverse. This may be necessary when using contra rotating props or if you use an aircraft style gearbox.

To reverse the motor rotation you will need to remove the fixing screws and rotate the end bell by 180 degrees. You can then re-time the motor but remember to **twist the brush gear in the opposite direction to advance the timing.**

Neil McGrath
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