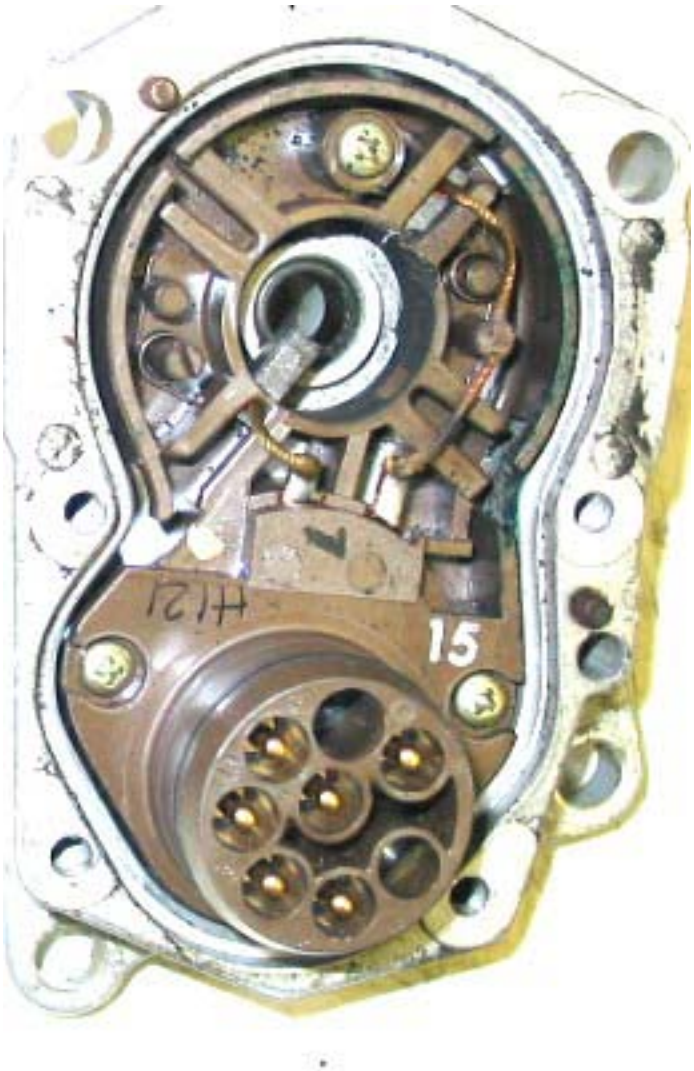
DK Motor clean up

When first tested, I applied 12 volts, current limited to 2.5 amp thru the motors of the DK Pin 3 and pin 5. One DK opened the throttle plate but the other did not. I then measured the resistance between pins 6-8, 6-7 and 1-8 in both conditions of closed and open throttle. The units were in spec but quite a bit different between the two.

I then opened up the DK that did not move when 12 volts was applied to pins 3-5. this is what I found.

One brush was stuck out and would not make contact with the commutator.



This is what the commutator looked like when removed

After cleaning looked like this

One thing that caught my eye was the condition of the feedback resistor set up. This is part of the DK that tells the EML how far open or what the position of the butterfly valve is. There is also a resistance that opens up at about 10 degrees of movement of the throttle plate. (between pins 1-7)

The black stripes are resistance material that is deposited on a substraight. Attached to the throttle boy shaft is a set of wipers that make contact with the resistance material. The wiper position is preset at the factory. As the throttle plate moves, the wipers also move along the resistance material and the resistance value changes.

Major concern on this DK set is the amount of wear on the resistance material. When the wipers wear thru the resistance material, the resistance readings sent back to the EML will not longer be correct or may fluctuate wildly during throttle plate movement. This certainly would set off the EML light and may initiate “limp home” mode.

More to follow as the investigation continues.