

## Powerdynamo Ignition Kill Options – ‘Position 5’

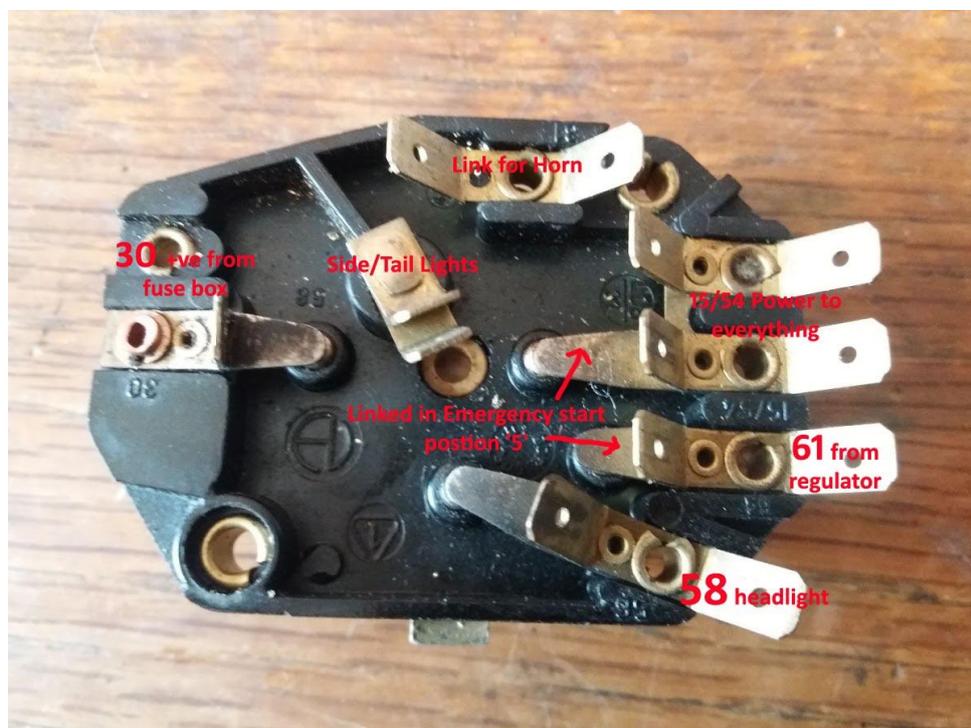
I am a great fan of the Powerdynamo (more correctly VAPE) electronic conversion for MZs and many other makes. One of the features and potential issues is that it is essentially a modern version of the flywheel magneto and needs some external method of preventing it from sparking when you want to stop the engine. The coil does have a blue/wht wire which is a low tension earth connection to kill the sparks and the VAPE documentation suggests three methods to wire this up; all of which I have tried over the years.

The most elegant is to connect the cutout wire via a relay which is energised by the battery when the ign switch is operated. Works a treat but does of course depend on having a charged battery in the system – else no sparks as the relay remains earthed. Plus of course you have some degree of security by removing the ignition key. However, you can get round this easily enough by disconnecting the blue/wht wire if you have flat battery or if you are a knowledgeable thief or indeed a screwdriver to operate the MZ switch.

The second method is to wire in a separate switch to earth the low tension current. Simple and effective but finding a suitable switch and a secure place yet accessible to locate it and keeping it waterproof is not so simple.

The third method, which is the one I tend to prefer, is called ‘Position 5’ referring to the emergency start position on the standard MZ ignition switch of the type fitted to ES and TS models. The ETZ type switch though apparently similar does not have a connection for pin 61 - see picture at the end.

What VAPE suggest is to connect the blue/wht low tension wire to position 61 on the switch. In position 5 (The emergency start position), pin 61 is connected to the adjacent 15/54 pins. In normal



operation these are energised from pin 30 when the ignition switch is in any of its three live running modes (ign only, sidelights and full headlihts). By connecting pin 61 to pins 15/54 effectively the dynamo is providing its full output to the bikes electrical system

bypassing the battery and regulator to provide an emergency start option. I have never personally seen this work though I am told it does if you run the bike down a steep hill in a low gear.

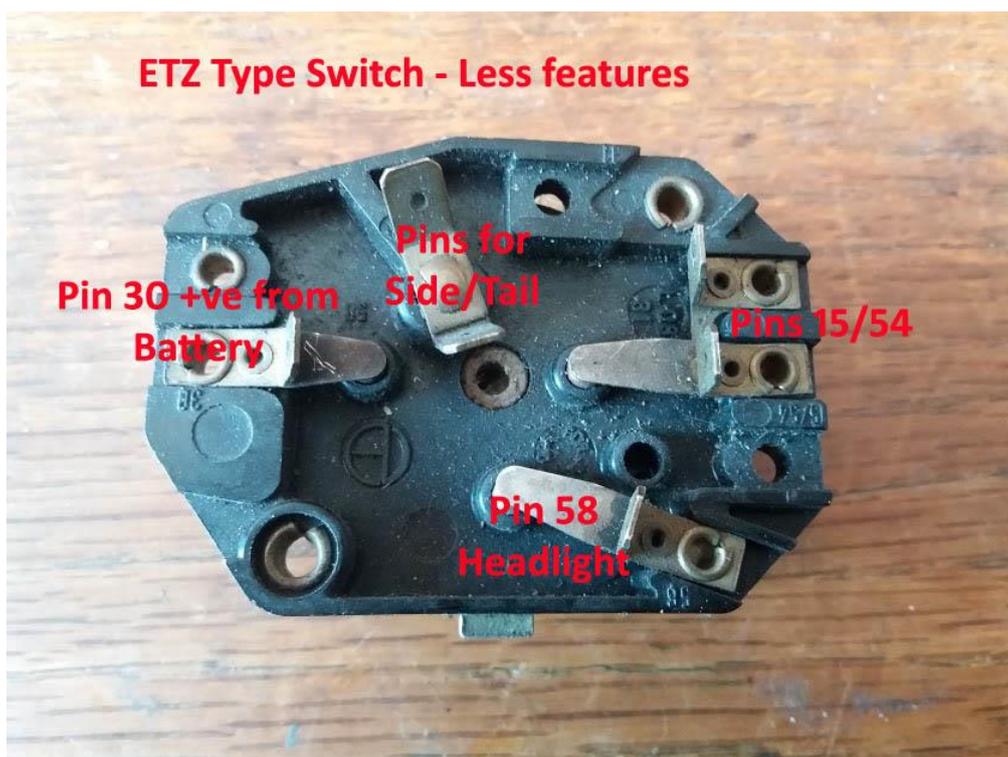
By connecting the low tension cutout to pin 61 and putting the switch in Position 5 you are in theory shorting it to earth through the bikes electrical system. Indeed I have used this method quite

successfully on my bikes but sometimes it does not work and I finally I decided to figure out why. The answer as always was very simple and blindingly obvious. There has to be something connected to pins 15/54 which provides a path to earth. Candidates are the coil – now disconnected and the neutral light but only if the bike is actually in neutral and the bulb is not blown,. The horn, stoplight and indicators are also candidates but they would need to be in use when trying to stop the engine. The final one is the ign warning light but like the neutral light it needs a working bulb to provide the earth path. As it's not needed with the VAPE system, on my TS250 I reassigned the ign warning light to be a main beam indicator a while back. Also it is not uncommon to forget to change the instrument bulbs to 12v so they may well be blown even if still properly connected.

Anyway this morning I managed to prove my theory on the TS250 to which I had recently refitted its original 4spd engine. Sure enough, when I made sure it was in neutral and the light was working, Position 5 worked as expected. Jiggle the gear lever so it's still in neutral but the bulb was not glowing and Position 5 no longer worked. I guess operating the horn or the rear brake lever would also have worked but I lacked the dexterity to try these but it's worth remembering should your engine not stop when you select Position 5.

I have now modified the wiring slightly to remove dependency on the neutral switch by moving the instrument illumination connection from pin 58 to pin 15/54 so they are always on. As there are two bulbs it's most unlikely both will fail. They don't much power, the VAPE system has plenty and I normally run it with headlight on all the time anyway. As belts and braces, I also moved the wire which provides power for the headlamp flasher from pin 15/54 to pin 61 so operating the flasher button also kills the engine. That works for me as I have never used the headlamp flasher. Covid-19 has a lot to answer for but it did provide the time and motivation to sort this enigma.

As an aside, the ETZ type switch has far fewer pins and does not have an emergency start position – probably difficult (Impossible?) to provide from a 12v 3-phase alternator. VAPE do provide a kit for ETZs but I have no experience of fitting one, ETZ 12v electrics are generally more robust than the 6v dynamo equipped models and I have never felt the need to upgrade. I imagine you only have two options, the relay method or a separate switch – or I suppose the headlamp flasher.



### **Addendum – TS125/150 Issues**

A few days after writing the above I fitted a VAPE system to my TS125 Sport. The ignition side worked fine, but trying to use Position 5 and the headlamp flasher as kill buttons would not work. I also had problems getting the neutral light, stoplight and horn to work, though the headlight and tail light worked fine. After a lot of head scratching, I found that running an earth wire direct to the engine solved most of the problems. You also need to move the green/red wire that connected pin 61 to the neutral bulb to pin 15/54.

I can understand why this affected the neutral light (6v dynamo wiring does include an engine earth wire) but why it affected the stoplight and horn operation is beyond me, however, I record it here just in case anyone else runs into the same problem.