May 2022

Kill Switch Wiring and why it should never be used as an ignition switch

We have added this additional information because many people do not understand how a kill switch works and what potential damage can occur to electronic equipment fitted to your vehicle and possibly even damaging the ECU.

1. A kill switch should never be used on the earth circuit on any vehicle equipped with modern electronics. Modern electronics are not normally designed to have the negative terminal disconnected and this can damage electronics when this type of kill switch is operated.
2. When using a normal type kill switch that disconnects the 12v feed as a minimum it requires a ballast resistor, that connects the alternator/engine side of the system to ground to dump current from the charging system. There are more advanced systems available but care needs to be taken such a device.
3. Problems that can occur even with correctly fitted kill switches and more advanced kill switch systems. When the kill switch is operated whilst the engine is running, you are effectively disconnecting the alternator from the battery, at this moment in time, the alternator thinks the battery has gone flat and immediately ups its output to try and charge the battery, the higher the rpm the greater the output can be. Under this condition the current has to go somewhere so it picks the easiest route. Even with a simple kill switch with a ballast resistor, there is potential for the kill switch to go open circuit before the ballast resistor is able to dump the current to ground. At this moment in time the current has to go somewhere and picks the easiest route, this could be any electronics which includes the ECU and as described previously, this output could be extremely large and therefore damage if not even destroy the ECU or any other electronics.
4. The MBE ECU has a permanent power supply, which it uses for many features and functions and when the kill switch is first turned on, the ECU goes through a boot up function. Then when the ignition switch is turned on, the ECU cycles through various commands ready for the control features and start the engine. Every time the ignition switch is cycled, it goes through and checks functions, if your vehicle is suffering from low battery voltage, cycling the ECU between attempted starts allows the ECU to reboot various features that may have had issues due to excessively low battery voltage.

NEVER use your kill switch as an ignition switch, only use the ignition switch to engine off and on and only use the kill switch an emergency or when the engine has already been switched off by the ignition and therefore the engine is not running.

If you do not feel comfortable with making these tests, you could take the vehicle to one of our recommended mapping agents. Alternatively, we can provide help and support remotely using Team Viewer, one of our engineers could log in remotely provided you have all the mapping hardware and run tests to try to assess your problem.

Please be aware that Technical Support involving our Technicians is chargeable

SBD Motorsport Ltd
Unit 15, Red Lion Business Park, Red Lion Road, Surbiton, Surrey. KT6 7QD
Tel:0208 391 0121
Website: www.sbdmotorsport.co.uk

SBDMotorsport
sbdmotorsport