



## Soft-Kill™ Installation Manual V1.0 (Universal Motorcycle Application)

THIS INSTALLATION MANUAL IS FOR A UNIVERSAL, 2 WIRE IGNITION COIL KILL SYSTEM FOR MOTORCYCLE APPLICATIONS. IT IS APPLICABLE FOR 1 TO 4 CYLINDER, 4 CYCLE ENGINES, WHETHER IT'S A SINGLE COIL OR UP TO 4 "COIL ON PLUGS" SETUP. THE RAPTOR SOFT KILL IS A SOPHISTICATED, MICROPROCESSOR BASED ENGINE KILL WHICH ALLOWS PRECISE CONTROL OVER FULL THROTTLE, CLUTCH-LESS UP SHIFTING. THE SOFT-KILL INTERRUPTS OR "KILLS" THE IGNITION COILS FOR A SPLIT SECOND, ALLOWING THE TRANSMISSION TO UP SHIFT EFFORTLESSLY FOR SMOOTH, QUICK SHIFTS. **THIS PRODUCT IS INTENDED FOR OFF ROAD USE ONLY AND TO BE INSTALLED BY A TRAINED MOTORCYCLE TECHNICIAN.**

### INSTALLATION & WIRING:

1. DISCONNECT BATTERY BEFORE WIRING UP THE SOFT KILL.
2. MOUNT THE BOX IN A DRY LOCATION AND AWAY FROM HEAT SOURCES, PREFERABLY UNDER THE SEAT.
3. PLUG THE SUPPLIED HARNESS INTO THE SOFT-KILL MAKING SURE THAT THE CONNECTORS LOCK INTO PLACE.
4. CONNECT THE WIRING HARNESS TO THE BIKE AS FOLLOWS ([SEE FIGURE 1](#)):
  - a) **BLACK** WIRE WITH RING TERMINAL CONNECTOR TO THE NEGATIVE SIDE OF THE BATTERY (GROUND).
  - b) **GRAY** AND **RED** WIRE **PAIR** TO THE AIR VALVE (THE SOFT KILL PROVIDES BOTH POWER AND GROUND). NO POLARITY REQUIRED.
  - c) **BLUE** WIRE TO THE HORN BUTTON (THE HORN BUTTON MUST BE DISCONNECTED FROM THE HORN). THE HORN BUTTON SHOULD PROVIDE A **GROUND** SIGNAL WHEN PUSHED SINCE THE SOFT KILL ONLY ACCEPTS A GROUND SIGNAL TO TRIGGER A SHIFT. IF USING THE RAPTOR DUAL MODE SHIFT LIGHT WITH THE AUTOSHIFT OUTPUT, ALSO CONNECT THE BLUE WIRE TO THE SHIFT LIGHT OUTPUT WIRE (BROWN ON SHIFT LIGHT) FOR FULLY AUTOMATIC SHIFTING.
  - d) CONNECT ONE BROWN WIRE OF THE SOFT KILL TO THE NEGATIVE SIDE OF EACH IGNITION COIL FOR A FOUR CYLINDER SPORT BIKE WITH COIL ON PLUG.
  - e) FOR A HARLEY APPLICATION, CONNECT TWO BROWN WIRES TOGETHER AND CONNECT TO THE FRONT IGNITION COIL. CONNECT THE OTHER TWO BROWN WIRES TOGETHER AND CONNECT TO THE REAR IGNITION COIL.

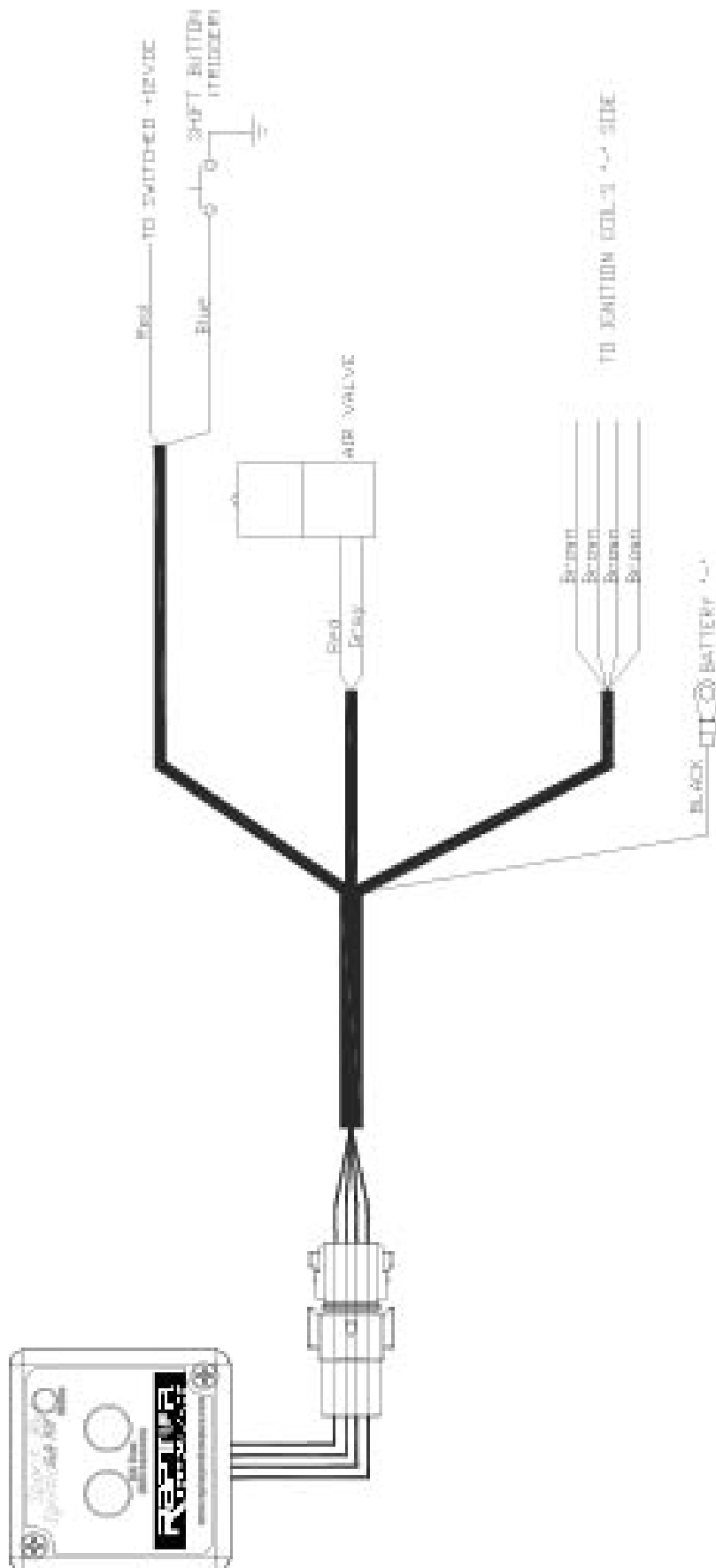


## **INSTALLATION & WIRING (CONTINUED):**

- f) CONNECT THE **RED** WIRE TO SWITCHED +12 VOLTS (POWER WHEN KEY IS ON).
  - g) RE-CONNECT THE BATTERY AND TURN THE KEY AND RUN SWITCH ON. THE LED ON THE SOFT KILL SHOULD GLOW ORANGE FOR 2 SECONDS THEN IT SHOULD GLOW GREEN. IF NOT CHECK POWER AND GROUND CONNECTIONS.
5. PROGRAM THE SOFT KILL FOR THE DESIRED KILL TIME BY ROTATING THE TWO ROTARY DIP SWITCHES WITH A SMALL FLAT BLADE SCREW DRIVER. THE SWITCH TO THE LEFT IS MILLISECONDS X10. THE SWITCH TO THE RIGHT IS MILLISECONDS X1. SO, A SETTING OF 45 WOULD BE 45 MILLISECONDS.
6. **DISCONNECT THE AIR SUPPLY FOR THE AIR SHIFTER SO THE AIR VALVE WIRING CAN BE CHECKED.** PRESS THE HORN BUTTON AND YOU SHOULD HEAR THE AIR VALVE CLICK ON AND OFF. YOU SHOULD ALSO SEE THE LED ON THE SOFT KILL BLINK RED EACH TIME THE HORN BUTTON IS PRESSED. THE LED IS ONLY ON EQUIVALENT TO THE KILL TIME SET BY THE SWITCHES. IF NOT, MAKE SURE THE HORN BUTTON IS PROVIDING A GROUND SIGNAL WHEN PRESSED. FOR MOTORCYCLES THAT PROVIDE 12 VOLTS WHEN THE HORN BUTTON IS PRESSED (ALL GEN II (2012+) KAWASAKI ZX14s), USE A RELAY TO SWITCH THE SIGNAL FROM 12 VOLTS TO GROUND.

**Never initiate a shift while not on the bike or while on the stand to prevent an unwanted shift!!**

**WIRING DIAGRAM:**



(FIGURE 1)

## NORMAL OPERATION:

WHEN THE RIDER PRESSES THE HORN BUTTON (OR IF THE RAPTOR SHIFT LIGHT WITH AUTOSHIFT IS USED AND IT HITS THE SHIFT POINT), THE SOFT KILL WILL IMMEDIATELY TRIGGER THE AIR VALVE, ALLOWING PRELOADING OF THE SHIFT LEVER BEFORE THE KILL. THIS PRELOADING TIME IS A PRE-PROGRAMMED DELAY OF 15 MILLI-SECONDS. AFTER THE DELAY, THE SOFT KILL WILL KILL THE IGNITION FOR THE PROGRAMMED KILL TIME SET BY THE SWITCHES. THE ENGINE SHOULD HESITATE OR STUMBLE WHEN THE KILL EVENT OCCURS. THE SOFT KILL IS PROGRAMMED TO NOT DOUBLE SHIFT. THERE IS A MINIMUM TIME BEFORE THE RIDER CAN INITIATE ANOTHER SHIFT. EACH TIME THE HORN BUTTON IS PRESSED, YOU SHOULD SEE THE KILL LED FLASH RED INDICATING THE QUICK KILL IS BEING TRIGGERED.

## TROUBLESHOOTING:

<b>PROBLEM</b>	<b>POSSIBLE SOLUTION</b>
THE SOFT KILL CONTROLLER HAS NO POWER	<ul style="list-style-type: none"><li>• CHECK POWER AND GROUND CONNECTION</li><li>• MAKE SURE POWER AND GROUND ARE NOT REVERSED</li><li>• MAKE SURE KEY IS ON <u>AND</u> THE RUN SWITCH IS ON</li></ul>
THE BIKE DOESN'T SHIFT	<ul style="list-style-type: none"><li>• KILL TIME SET TOO LOW.</li><li>• VERIFY THAT THE HORN OR KILL BUTTON IS ACTIVATING THE CONTROLLER BY WATCHING THE KILL LED ON THE FRONT OF THE CONTROLLER. <b>THE KILL ACTIVATION IS "GROUND ACTIVATED"</b></li><li>• CHECK AIR SUPPLY</li></ul>
AIR VALVE NOT OPENING	<ul style="list-style-type: none"><li>• CHECK GRAY AND RED WIRE PAIR TO AIR VALVE. THERE SHOULD BE NO OTHER WIRES CONNECTED TO THE VALVE EXCEPT THE GRAY AND RED WIRE PAIR.</li><li>• AIR VALVE DRAWS TOO MUCH CURRENT OR SHORTED (1.2 AMPS MAX)</li></ul>
BIKE DOESN'T KILL BUT ACTIVATES SOLENOID	<ul style="list-style-type: none"><li>• CHECK BROWN WIRE CONNECTIONS. THESE SHOULD BE CONNECTED TO THE NEGATIVE SIDE OF THE IGNITION COILS ONLY.</li></ul>

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