



## "Quick-Kill" Installation Manual V1.0 (Universal Motorcycle Application)

THIS INSTALLATION MANUAL IS FOR UNIVERSAL FUEL INJECTED MOTORCYCLE APPLICATIONS (NON PLUG AND PLAY), WITH OR WITHOUT A GEAR POSITION SENSOR. THE RAPTOR QUICK KILL IS A SOPHISTICATED, MICROPROCESSOR BASED ENGINE KILL WHICH ALLOWS PRECISE CONTROL OVER FULL THROTTLE, CLUTCH-LESS UP SHIFTING. THE QUICK-KILL INTERRUPTS OR "KILLS" THE FUEL INJECTORS 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:

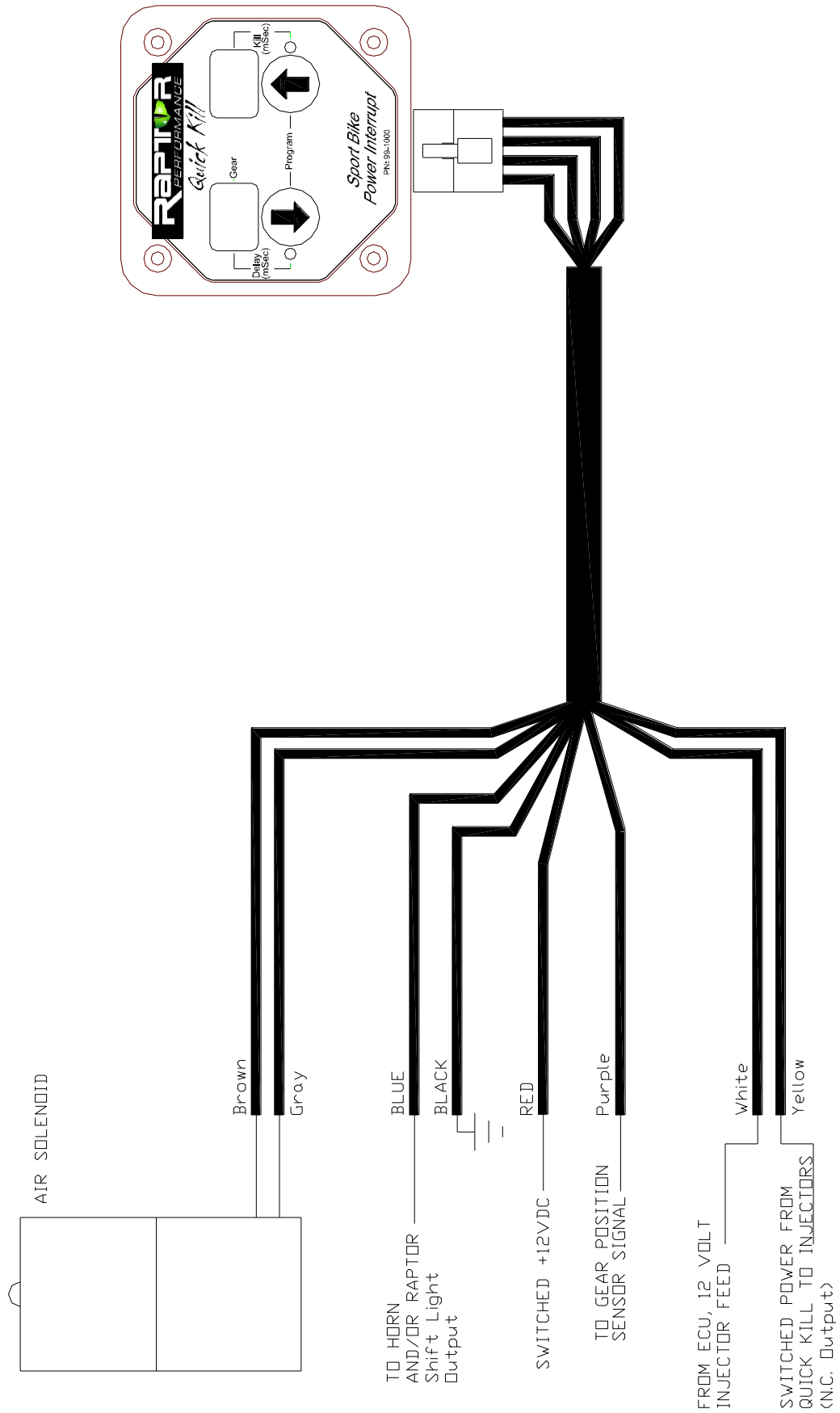
1. DISCONNECT BATTERY BEFORE WIRING UP THE QUICK-KILL.
2. MOUNT THE BOX IN A DRY LOCATION AND AWAY FROM HEAT SOURCES, PREFERABLY UNDER THE SEAT WITH THE SUPPLIED VELCRO. YOU CAN ALSO INSTALL IN THE INSTRUMENT CLUSTER FOR GEAR INDICATION AND EASY CHANGES TO SETTINGS.
3. PLUG THE SUPPLIED HARNESS INTO THE QUICK-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 TO THE NEGATIVE SIDE OF THE BATTERY (GROUND).
  - b) **GRAY** AND **BROWN** WIRE PAIR TO THE AIR VALVE (THE QUICK 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 QUICK 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 AUTOSHIFT OUTPUT WIRE (BROWN) FOR FULLY AUTOMATIC SHIFTING.
  - d) IF YOU PLAN TO USE GEAR BASED MODE (DIFFERENT KILL TIMES PER GEAR), YOU WILL NEED TO CONNECT THE **PURPLE** WIRE TO THE GEAR POSITION SENSOR'S SIGNAL WIRE. THIS ONLY WORKS ON MODERN MOTORCYCLES THAT HAVE A 3 WIRE GEAR POSITION SENSOR (ANALOG SIGNAL). INSULATE THE END OF THE PURPLE WIRE WITH ELECTRICAL TAPE OR SHRINK TUBING SO IT DOESN'T SHORT IF IT'S NOT BEING USED. IF USING A TRE (TIMING RETARD ELIMINATOR) THE QUICK KILL WILL NOT READ THE GEARS CORRECTLY. REPLACE THE TRE WITH STOCK GEAR POSITION SENSOR.



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

- e) FIND THE WIRE THAT FEEDS POWER TO THE FUEL INJECTORS ONLY. WE WILL CUT THIS WIRE AND SPLICE INTO IT. MAKE SURE IT'S ONLY FOR THE INJECTORS **AND NOT THE FUEL PUMP**. FOUR INJECTOR BIKES USUALLY HAVE ONE WIRE THAT BRACHES OUT TO FOUR THAT SUPPLIES POWER TO EACH INJECTOR. EIGHT INJECTOR BIKES USUALLY HAVE ONE WIRE THAT BRACHES OUT TO TWO AND THEN THOSE TWO BRANCHES OUT TO FOUR INJECTORS EACH. THE WHITE WIRE CONNECTS TO THIS CUT WIRE ON THE ECU SIDE ONLY. THE YELLOW WIRE CONNECTS TO THIS CUT WIRE ON THE INJECTOR SIDE. **DO NOT REVERSE THESE 2 WIRES!!** **NOTE:** SUZUKI TYPICALLY USES A YELLOW WIRE WITH A RED STRIPE FOR THE FUEL INJECTOR'S POWER.
  - f) FINALLY, CONNECT THE RED WIRE TO SWITCHED 12 VOLTS (POWER WHEN KEY IS ON).
  - g) RECONNECT THE BATTERY AND TURN THE KEY AND RUN SWITCH ON. BOTH DISPLAYS ON THE QUICK KILL SHOULD COME ON. IF NOT CHECK POWER AND GROUND CONNECTIONS.
5. DISCONNECT THE AIR SUPPLY FOR THE AIR SHIFTER SO THE AIR VALVE WIRING CAN BE CHECKED. IF USING GEAR MODE, PUT TRANSMISSION INTO 1<sup>ST</sup> GEAR. PRESS THE HORN BUTTON AND YOU SHOULD HEAR THE AIR VALVE CLICK ON AND OFF. YOU SHOULD ALSO SEE THE DELAY OR KILL LED ON THE QUICK KILL BLINK EACH TIME THE HORN BUTTON IS PRESSED. 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, USE A RELAY TO SWITCH THE SIGNAL FROM 12 VOLTS TO GROUND. **AS A PRECAUTION, THE CONTROLLER SHOULD NOT KILL OR SHIFT WHILE IN NEUTRAL (BUT ONLY IF USING GEAR MODE) TO PREVENT THE BIKE FROM JUMPING INTO GEAR WHILE ON THE KICKSTAND. HOWEVER, IT IS NEVER A GOOD IDEA TO HIT THE HORN BUTTON WHILE ON THE KICKSTAND! IF IN NON GEAR MODE, THE QUICK KILL DOESN'T KNOW, SINCE THE GEAR SENSOR IS NOT USED AND IT WILL SHIFT IN NEUTRAL.**
6. **NEVER INITIATE A SHIFT WITH THE ENGINE NOT RUNNING AND THE AIR SUPPLY CONNECTED!! ALWAYS DISCONNECT AIR SUPPLY IF TESTING.**

**WIRING DIAGRAM:**



(FIGURE 1)

### **INITIAL SETUP (WITHOUT GEAR POSITION SENSOR):**

1. FOR APPLICATIONS THAT ARE NOT USING THE GEAR POSITION SENSOR (GPS), WE NEED TO SETUP THE QUICK KILL CONTROLLER FOR NON GPS MODE.
2. MAKE SURE KEY IS OFF, BUT RUN SWITCH IS ON. THEN PRESS AND HOLD THE DOWN BUTTON WHILE TURNING THE KEY ON WITHOUT STARTING THE ENGINE. CONTINUE TO HOLD THE DOWN BUTTON WHILE THE QUICK KILL SCROLLS "0" ACROSS THE DISPLAYS. ONCE THE SCROLLING STOPS, THE QUICK KILL IS SETUP FOR NON GEAR MODE. IN THIS MODE, THERE WILL BE ONE KILL TIME FOR ALL GEARS AND THE DELAY TIME.
3. PROCEED TO "[PROGRAMMING \(NON GEAR MODE\)](#)" SECTION.



INITIATING NON GEAR SETUP MODE ("0" SCROLLS ACROSS DISPLAYS)

### **INITIAL SETUP (WITH GEAR POSITION SENSOR):**

1. FOR APPLICATIONS THAT ARE USING THE GEAR POSITION SENSOR (GPS), WE NEED TO SETUP THE QUICK KILL CONTROLLER FOR GPS MODE. THIS ONLY HAS TO BE DONE ONCE UNLESS THE QUICK KILL IS TRANSFERRED TO ANOTHER MOTORCYCLE.
2. MAKE SURE KEY IS OFF, BUT RUN SWITCH IS ON. THEN PRESS AND HOLD THE UP BUTTON WHILE TURNING THE KEY ON WITHOUT STARTING THE ENGINE. CONTINUE TO HOLD THE UP BUTTON WHILE THE QUICK KILL SCROLLS "1" ACROSS THE DISPLAYS. ONCE THE SCROLLING STOPS, RELEASE THE UP BUTTON. THE QUICK KILL GOES INTO "GEAR LEARN" MODE.



INITIATING GEAR SETUP MODE ("1" SCROLLS ACROSS DISPLAYS)

3. THE LEFT DISPLAY WILL SHOW "1" FOR GEAR 1. THE RIGHT DISPLAY WILL SHOW THE VOLTAGE FROM THE GEAR POSITION SENSOR WITHOUT THE CENTER DECIMAL POINT. SO IN EFFECT THE QUICK KILL IS ASKING YOU TO PUT THE GEAR SELECTOR IN GEAR 1. ONCE YOU ARE IN GEAR 1, PRESS THE UP BUTTON TO PROGRAM THAT GEAR AND ADVANCE TO GEAR 2.
4. NOW THE LEFT DISPLAY WILL SHOW "2" FOR GEAR 2. SO MOVE THE GEAR SELECTOR TO GEAR 2 AND THEN PRESS THE UP BUTTON TO ADVANCE TO THE NEXT GEAR.
5. REPEAT THE ABOVE PROCEDURE UNTIL ALL 6 GEARS ARE LEARNED FOR THAT PARTICULAR MOTORCYCLE. AFTER THE LAST GEAR IS LEARNED, THE QUICK KILL EXAMINES THE GEAR VOLTAGES AND DETERMINES IF IT WAS PROGRAMMED CORRECTLY. IF A MISTAKE WAS MADE DURING LEARN MODE, SUCH AS PROGRAMMING THE SAME VALUE FOR MORE THAN ONE GEAR, ETC., THE QUICK KILL'S DELAY AND KILL LED FLASH SIMULTANEOUSLY INDICATING AN ERROR CODE. THE LEFT DISPLAY WILL GO BACK TO "1" ASKING YOU TO RE-LEARN THE GEARS. REPEAT STEPS 3-5 ABOVE.
6. AFTER THE QUICK KILL LEARNS ALL THE GEARS AND IT DETERMINES THE GEAR VOLTAGES ARE VALID, IT WILL COME OUT OF GEAR LEARN MODE AND WILL BE READY TO PROGRAM THE DIFFERENT KILL TIMES PER GEAR.
7. PROCEED TO "[PROGRAMMING \(GEAR MODE\)](#)" SECTION.

## **PROGRAMMING (NON GEAR MODE):**

1. TO PROGRAM THE DELAY AND KILL TIME IN NON GEAR MODE, PRESS BOTH THE UP AND DOWN BUTTON ON THE QUICK KILL AT THE SAME TIME UNTIL THE LEFT DELAY DISPLAY BEGINS TO BLINK AND THE YELLOW DELAY LED LIGHTS UP. RELEASE BOTH BUTTONS. THE LEFT DISPLAY SHOWS THE CURRENT DELAY TIME. TO ADJUST, PRESS THE UP OR DOWN BUTTON TO DECREASE OR INCREASE THE DELAY TIME. SINGLE PRESSES WILL INCREASE OR DECREASE THE DELAY TIME BY 1 MILLISECOND (mSec). HOLDING THE UP OR DOWN BUTTON WILL CAUSE THE DELAY SETTING TO FAST SCROLL TO THE DESIRED SETTING. THE MINIMUM SETTING IS 0 mSec AND THE MAXIMUM IS 50 mSec. WE RECOMMEND A MINIMUM DELAY SETTING OF 12 mSec TO ALLOW THE AIR VALVE TO REACT AND FULLY OPEN. SETTING THIS TO ZERO WILL ONLY SLOW YOU DOWN SINCE YOU WILL BE KILLING THE ENGINE BEFORE THE AIR VALVE HAS FULLY OPENED.



IN PROGRAM MODE FOR DELAY SETTING (DELAY TIME FLASHING)

2. ONCE THE DELAY HAS BEEN SET, PRESS BOTH THE UP AND DOWN BUTTON ON THE QUICK KILL AT THE SAME TIME UNTIL THE RIGHT KILL DISPLAY BEGINS TO BLINK AND THE RED KILL LED LIGHTS UP. RELEASE BOTH BUTTONS. THE RIGHT DISPLAY SHOWS THE CURRENT KILL TIME. TO ADJUST, PRESS THE UP OR DOWN BUTTON TO DECREASE OR INCREASE THE KILL TIME. SINGLE PRESSES WILL INCREASE OR DECREASE THE KILL TIME BY 1 MILLISECOND (mSec). HOLDING THE UP OR DOWN BUTTON WILL CAUSE THE KILL SETTING TO FAST SCROLL TO THE DESIRED SETTING. THE MINIMUM SETTING IS 1 mSec AND THE MAXIMUM IS 100 mSec.



IN PROGRAM MODE FOR KILL SETTING MODE (KILL DISPLAY FLASHING)

WE RECOMMEND STARTING AT 50 mSec KILL TIME AND WORKING YOUR WAY DOWN UNTIL THE BIKE DOESN'T SHIFT, THEN MOVING THE KILL TIME BACK UP A FEW mSec. DURING INITIAL TESTING, WE HAD A GSXR1000 THAT WE WERE ABLE TO SHIFT AT 37 mSec IN FIRST GEAR WITHOUT NITROUS AND 43 mSec WITH THE SPRAY! HOWEVER, EVERY SETUP IS DIFFERENT AND YOU WILL HAVE TO FIND THE PERFECT SETUP THROUGH TESTING.

## **PROGRAMMING (GEAR MODE):**

1. TO PROGRAM THE DELAY AND KILL TIME IN GEAR MODE, PRESS BOTH THE UP AND DOWN BUTTON ON THE QUICK KILL AT THE SAME TIME UNTIL THE LEFT DELAY DISPLAY BEGINS TO BLINK AND THE YELLOW DELAY LED LIGHTS UP. RELEASE BOTH BUTTONS. THE LEFT DISPLAY SHOWS THE CURRENT DELAY TIME. TO ADJUST, PRESS THE UP OR DOWN BUTTON TO DECREASE OR INCREASE THE DELAY TIME. SINGLE PRESSES WILL INCREASE OR DECREASE THE DELAY TIME BY 1 MILLISECOND (mSec). HOLDING THE UP OR DOWN BUTTON WILL CAUSE THE DELAY SETTING TO FAST SCROLL TO THE DESIRED SETTING. THE MINIMUM SETTING IS 0 mSec AND THE MAXIMUM IS 50 mSec. WE RECOMMEND A MINIMUM DELAY SETTING OF 12 mSec TO ALLOW THE AIR VALVE TO REACT AND FULLY OPEN. SETTING THIS TO ZERO WILL ONLY SLOW YOU DOWN SINCE YOU WILL BE KILLING THE ENGINE BEFORE THE AIR VALVE HAS FULLY OPENED.



IN PROGRAM MODE FOR DELAY SETTING (DELAY TIME FLASHING)

2. ONCE THE DELAY HAS BEEN SET, PRESS BOTH THE UP AND DOWN BUTTON ON THE QUICK KILL AT THE SAME TIME UNTIL THE RIGHT KILL DISPLAY BEGINS TO BLINK AND THE RED KILL LED LIGHTS UP. THE LEFT DISPLAY WILL SHOW GEAR 1. RELEASE BOTH BUTTONS. THE RIGHT DISPLAY SHOWS THE CURRENT KILL TIME FOR GEAR 1. TO ADJUST, PRESS THE UP OR DOWN BUTTON TO DECREASE OR INCREASE THE GEAR 1 KILL TIME. SINGLE PRESSES WILL INCREASE OR DECREASE THE KILL TIME BY 1 MILLISECOND (mSec). HOLDING THE UP OR DOWN BUTTON WILL CAUSE THE KILL SETTING TO FAST SCROLL TO THE DESIRED SETTING. THE MINIMUM SETTING IS 1 mSec AND THE MAXIMUM IS 100 mSec. WE RECOMMEND STARTING AT 50 mSec KILL TIME AND WORKING YOUR WAY DOWN UNTIL THE BIKE DOESN'T SHIFT THEN MOVING THE KILL TIME BACK UP A FEW mSec.



IN PROGRAM MODE SHOWING 1ST GEAR AND ITS KILL TIME SETTING (KILL TIME FLASHING)

3. ONCE GEAR 1 KILL TIME HAS BEEN PROGRAMMED, PRESS BOTH THE UP AND DOWN BUTTON ON THE QUICK KILL AT THE SAME TIME UNTIL THE LEFT GEAR DISPLAY SHOWS 2 FOR GEAR 2. SET GEAR 2-5 AS ABOVE. ONCE ALL KILL TIMES HAVE BEEN PROGRAMMED AND WE ARE OUT OF PROGRAM MODE, THE LEFT GEAR DISPLAY WILL SHOW THE ACTUAL GEAR THE TRANSMISSION IS IN AND THE RIGHT KILL DISPLAY WILL SHOW THE ASSOCIATED KILL TIME FOR THAT GEAR. USUALLY FIRST AND SECOND GEAR REQUIRE MORE KILL TIME THAN THE UPPER GEARS. ADJUST THE SETTING UNTIL YOU FIND THE PERFECT KILL TIMES FOR EACH GEAR.



QUICK KILL IN PROGRAM MODE SHOWING EACH GEAR (2-5) AND ITS KILL TIME SETTING (KILL TIME FLASHING)

4. ONCE OUT OF PROGRAM MODE, MOVE THE GEAR SELECTOR THROUGH ALL THE GEARS AND MAKE SURE EACH GEAR DISPLAYED, SHOWS THE CORRECT KILL TIME FOR THAT GEAR.

## **NORMAL OPERATION:**

UPON POWER UP, THE QUICK KILL WILL TURN ON ALL THE DISPLAYS WITH "8" TO TEST ALL THE SEGMENTS OF THE DISPLAY, FOLLOWED BY THE RIGHT DISPLAY BLINKING THE FIRMWARE REVISION. THEN THE QUICK KILL IS READY FOR USE.

WHEN THE RIDER PRESSES THE HORN BUTTON (OR IF THE RAPTOR SHIFT LIGHT WITH AUTOSHIFT IS USED AND IT HITS THE SHIFT POINT), THE QUICK KILL WILL IMMEDIATELY TRIGGER THE AIR VALVE. AFTER THE PROGRAMMED DELAY TIME HAS ENDED, THE QUICK KILL WILL KILL THE FUEL FOR THE PROGRAMMED KILL TIME. THE ENGINE SHOULD HESITATE OR STUMBLE WHEN THE KILL EVENT OCCURS. THE QUICK 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 DELAY AND KILL LEDS FLASH INDICATING THE QUICK KILL IS BEING TRIGGERED. IF IN GEAR MODE, THE LEFT DISPLAY SHOULD SHOW THE CURRENT GEAR OF THE TRANSMISSION AND THE ASSOCIATED KILL TIME FOR THAT GEAR.

KEEP IN MIND, THAT A TYPICAL 10 SECOND 1/4 MILE BIKE AVERAGES 1 FOOT TRAVELED IN 7.58 mSec. WITH THE QUICK KILL YOU CAN PRECISELY DIAL IN YOUR KILL TIME UNLIKE OUR COMPETITION WHICH USES DIALS TO APPROXIMATE KILL TIMES OR THE KILL TIMES CAN ONLY BE ADJUSTED IN 10 OR 20 mSec INCREMENTS. IF YOU SIMPLY SAVE 10mSec AND GO THROUGH 5 SHIFTS, YOU SAVED 50 mSec OF TIME OR 6.6 FEET GAINED IN THE QUARTER MILE BY SIMPLY DIALING IN YOUR KILL TIMES! THAT COULD MEAN THE DIFFERENCE FROM LOSING AND WINNING!

## **TROUBLESHOOTING:**

<b><u>PROBLEM</u></b>	<b><u>POSSIBLE SOLUTION</u></b>
THE QUICK KILL CONTROLLER HAS NO POWER	<ul style="list-style-type: none"><li>• CHECK POWER AND GROUND CONECTION</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 TIMES SET TOO LOW.</li><li>• VERIFY THAT THE HORN OR KILL BUTTON IS ACTIVATING THE CONTROLLER BY WATCHING THE DELAY AND KILL LED ON THE FRONT OF THE CONTROLLER.</li><li>• CHECK AIR SUPPLY</li><li>• THE CONTROLLER SHOULD NOT SHIFT WHILE IN NEUTRAL (ONLY IF IN GEAR MODE) AS A SAFETY FEATURE. THIS SHOULD PREVENT SHIFTING IN GEAR WHILE ON THE KICKSTAND.</li></ul>
AIR VALVE NOT OPENING	<ul style="list-style-type: none"><li>• CHECK GRAY AND BROWN WIRE PAIR TO AIR VALVE. THERE SHOULD BE NO OTHER WIRES CONNECTED TO THE VALVE EXCEPT THE GRAY AND BROWN WIRE PAIR.</li><li>• AIR VALVE DRAWS TO MUCH CURRENT (1.2 AMPS MAX)</li></ul>
THE QUICK KILL CONTROLLER DISPLAYS WRONG GEAR DURING NORMAL OPERATION	<ul style="list-style-type: none"><li>• CHECK GEAR POSITION SENSOR WIRING FOR LOOSE CONNECTION.</li><li>• IF NECESSARY, REPEAT LEARN GEAR PROCEDURE.</li></ul>
"FI" LIGHT COMES ON WHEN SHIFTING	<ul style="list-style-type: none"><li>• THE BIKE IS SENSING THAT THE POWER IS BEING CUT DURING A SHIFT. THIS DOES NOT AFFECT PERFORMANCE. AFTER THE RUN, TURN THE KEY OFF THEN BACK ON TO RESET THE CODE.</li><li>• FUTURE PLUG AND PLAY HARNESSSES WILL BE AVAILABLE TO PREVENT THE FI LIGHT FROM COMING ON FOR SELECT MOTORCYCLES.</li></ul>

## **-Disclaimer-**

*Please Make Sure You Read Thoroughly*

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