Dual Mode Launch/Shift Light *(with Auto Shift Output)*

Operating Instructions (Gen II)   Firmware Rev: V1.8

1 YEAR LIMITED WARRANTY ON MANUFACTURE DEFECTS. IN NO EVENT WILL RAPTOR PERFORMANCE OR ANY OF ITS AFFILIATES BE RESPONSIBLE FOR DAMAGES OF ANY NATURE WHATSOEVER RESULTING FROM THIS PRODUCT. NO OTHER CLAIMS ARE MADE ABOUT THIS PRODUCT, EXPLICIT OR IMPLIED.

INSTRUCTIONS FOR INSTALLATION AND SWITCH SETTINGS:

- REMOVE NEGATIVE BATTERY CABLE.

- CONNECT THE BLACK WIRE OF THE SHIFT LIGHT TO A SUITABLE GROUND ON THE VEHICLE CHASSIS.

- CONNECT THE RED WIRE OF THE SHIFT LIGHT TO A **SWITCHED AND FUSED** +12 VOLT SOURCE.

- CONNECT THE GREEN WIRE OF THE SHIFT LIGHT TO THE TACH OUTPUT LEAD OF THE VEHICLE OR THE SWITCHED SIDE OF THE IGNITION COIL (NEGATIVE SIDE). **DO NOT CONNECT TO AFTERMARKET HIGH ENERGY COIL(S)….DAMAGE TO SHIFT LIGHT MAY OCCUR!**

- CONNECT THE WHITE WIRE OF THE SHIFT LIGHT TO THE VEHICLE SPEED SIGNAL (VSS) OUTPUT FROM THE ECU. LEAVING THIS WIRE DIS-CONNECTED WILL CAUSE THE SHIFT LIGHT TO REMAIN IN LAUNCH MODE. IN CASE OF NO Vss SIGNAL WHICH IS THE CASE FOR MECHANICAL DRIVEN SPEEDOS OR THE NEW DODGE CHALLENGER, SPECIAL PROGRAMMING FROM THE FACTORY IS AVAILABLE TO USE THE CLUTCH SWITCH OR BRAKE LIGHT INSTEAD.

- THE BROWN WIRE CAN BE USED TO GROUND A CIRCUIT (SWITCHES TO GROUND) WHEN THE RPM IS EQUAL TO OR GREATER THAN THE SHIFT POINT. IT DOES NOT ACTIVATE AT THE LAUNCH RPM. DO NOT SHORT TO 12 VOLTS! TAPE THE EXPOSED CONDUCTOR IF NOT USING. THIS OUTPUT TRIGGERS AT THE SHIFT SETTING AND STAYS ON UNTIL RPM FALLS 200 RPM BELOW THE SHIFT SETTING. THIS IS TO ELIMINATE SUCCESSIVE ON/OFF CHATTER AT THE SETPOINT AND ELIMINATES "DOUBLE SHIFTING" ON AUTO SHIFTED MOTORCYCLES. IN FIRMWARE VERSION 1.7 AND LATER, WE'VE ADDED A MINIMUM ON TIME OF 250mSEC TO INSURE SWITCHING OF THE AIR SOLENOID IF THE BROWN WIRE IS DRIVING THE AIR SOLENOID VALVE DIRECTLY ON SPORT BIKES.

- RESTORE BATTERY CABLE CONNECTION.

PROGRAMMING

PARAMETERS THAT WILL BE SET DURING PROGRAMMING IS AS FOLLOWS AND IN THE ORDER GIVEN:
LAUNCH RPM, LAUNCH LIMITS, PULSES/REV (CYLINDER CONFIGURATION), SHIFT RPM
SEE FIGURE 1 FOR REFERENCE

1. LAUNCH RPM SETTING

- PRESS AND HOLD BOTH PROGRAM BUTTONS (*TWO SECONDS*) UNTIL RPM DISPLAY STARTS TO FLASH. THIS IS THE LAUNCH RPM THAT IS STORED IN MEMORY.

- PRESS AND RELEASE THE UP OR DOWN BUTTON TO SINGLE STEP UP OR DOWN IN RPM. OR HOLD THE UP OR DOWN BUTTON TO FAST SCROLL TO THE DESIRED LAUNCH RPM. PRESS BOTH PROGRAM BUTTONS TO ADVANCE TO THE NEXT PARAMETER.

2 .LAUNCH RPM BAND SETTING (+/- RPM FOR LAUNCH)

- THE RPM LIMITS SHOULD BE DISPLAYED AND FLASHING. THIS IS THE LAUNCH LIMITS THAT ARE STORED IN MEMORY. (+/- RPM SETTING FOR THE LAUNCH RPM). **NOTE**: THE LAUNCH RPM BAND CAN BE SET FROM 100 TO 500 RPM. HOWEVER, THE LAUNCH RPM MINUS THE LAUNCH RPM BAND CANNOT BE BELOW 1000 RPM. EXAMPLE: IF YOUR LAUNCH RPM IS SET TO 1200 RPM, THE MAXIMUM LAUNCH RPM BAND CAN ONLY BE +/- 200 RPM (1200 – 200 = 1000).

- PRESS AND RELEASE THE UP OR DOWN BUTTON TO SINGLE STEP UP OR DOWN IN RPM. HOLD THE UP OR DOWN BUTTON TO FAST SCROLL TO THE DESIRED LAUNCH RPM. LIMITS. PRESS BOTH PROGRAM BUTTONS TO ADVANCE TO THE NEXT PARAMETER

3. PULSES/REV (CYLINDER CONFIGURATION)

- NEXT, THE CYLINDER SETTING SHOULD BE DISPLAYED AND FLASHING. THIS IS THE CYLINDER SETTING THAT IS STORED IN MEMORY.VALID ENTRIES ARE 1,2,3,4,5,6,8.

- PRESS AND RELEASE THE UP OR DOWN BUTTON TO SINGLE STEP UP OR DOWN IN CYLINDER SETTING. HOLD THE UP OR DOWN BUTTON TO FAST SCROLL TO THE DESIRED CYLINDER SETTING. PRESS BOTH PROGRAM BUTTONS TO ADVANCE TO THE NEXT PARAMETER

4. SHIFT RPM

- NEXT, THE SHIFT POINT SETTING SHOULD BE DISPLAYED AND FLASHING. THIS IS THE SHIFT SETTING THAT IS STORED IN MEMORY. MAXIMUM VALUE IS 20,000 RPM.

- PRESS AND RELEASE THE UP OR DOWN BUTTON TO SINGLE STEP UP OR DOWN IN SHIFT SETTING. HOLD THE UP OR DOWN BUTTON TO FAST SCROLL TO THE DESIRED SHIFT SETTING. PRESS BOTH PROGRAM BUTTONS TO EXIT PROGRAM MODE.

FOR VEHICLE SPECIFIC INFORMATION (IF AVAILABLE), PLEASE CHECK THE RAPTOR WEBSITE
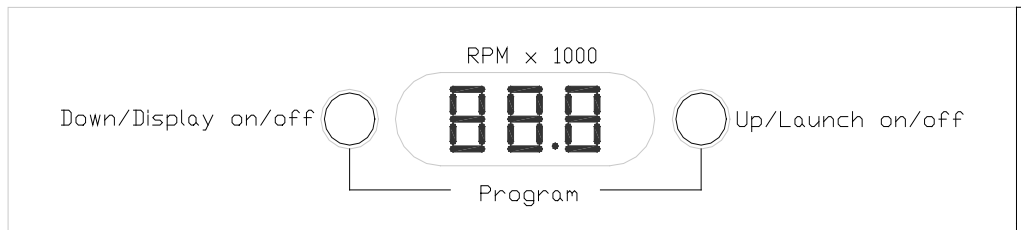

RPM x 1000

Down/Display on/off   Up/Launch on/off

Program

Figure 1

ENABLE OR DISABLE THE LAUNCH FEATURE
- THERE MAY BE TIMES WHEN YOU WISH TO DISABLE THE LAUNCH FEATURE SUCH AS NORMAL STREET DRIVING. TO TOGGLE BETWEEN LAUNCH MODE ENABLED OR DISABLED SIMPLY PRESS THE "UP" PROGRAM BUTTON TWICE WITHIN A 1/2 SECOND TIME FRAME.
- IF THE LAUNCH IS BEING ENABLED, THERE WILL BE A QUICK BURST OF FLASHES TO INDICATE THIS.
- IF THE LAUNCH IS BEING DISABLED, THERE WILL BE ONE FLASH TO INDICATE THE LAUNCH MODE IS BEING DE-ACTIVATED.
- THE SHIFT LIGHT WILL REMEMBER THE LAST STATE THE LAUNCH MODE WAS SET FOR AND RETAIN THAT STATE EACH TIME THE KEY IS TURNED OFF THEN ON. SO IF THE SHIFT LIGHT HAD THE LAUNCH DISABLED WHEN THE IGNITION WAS TURNED OFF, IT WILL ALSO BE DISABLED WHEN THE IGNITION IS TURNED BACK ON.

Tach Sensitivity Reconfigure:
- TO RECONFIGURE THE INPUT TYPE (FOR LOW AMPLITUDE WEAK SIGNALS), HOLD BOTH BUTTONS
- DOWN ON THE SHIFT LIGHT WHILE THE KEY IS OFF. THEN WHILE HOLDING, TURN THE KEY ON. THE
- SHIFT LIGHT WILL DISPLAY EITHER "111 OR "222". IF IT DISPLAYS "111", IT IS SETUP FOR NORMAL
- SIGNALS 12 VOLT/5 VOLT SIGNALS.. IF IT DISPLAYS "222", IT IS SETUP FOR WEAK SIGNALS (LOWER THAN 5 VOLTS)
- WHICH IS TYPICAL OF THE 2010 CAMARO (LS3/L99). THE INPUT TYPE TOGGLES FROM NORMAL TO
- WEAK SIGNAL INPUT TYPES AND VICE VERSA EACH TIME THE RECONFIGURE STEP IS CARRIED
  OUT. (1) "111" FOR NORMAL SIGNALS. (2) "222" FOR WEAK SIGNALS.

SPECIAL CYLINDER SETTING CONSIDERATIONS:
- **Ford 99+ MUSTANGS**: SET CYLINDER SELECTION TO "1" (READS OFF one OF THE EIGHT COILS).
- **DODGE VIPER**: SET CYLINDER SELECTION TO "2" (READS OFF ONE COIL PACK).
- **GM "LSX" ENGINES (NOT LS3/L99)**: SET CYLINDER SELECTION TO "4" (READS OFF TACH OUT FROM PCM).
- **GM "LS3/L99" ENGINES**: SET CYLINDER SELECTION TO "1" (READS OFF SINGLE COIL). (NO TACH SIGNAL)
- **New Dodge Challenger:** SET CYLINDER SELECTION TO "1" (READS OFF SINGLE COIL). (NO TACH SIGNAL)
- **Suzuki Hayabusa/GSXR1000:** SET CYLINDER SELECTION TO "2" (READS OFF YELLOW/BLUE WIRE BEHIND GAUGE CLUSTER).
- **Kawasaki ZX10/ZX14:** SET CYLINDER SELECTION TO "1" (READS OFF SINGLE COIL). (NO TACH SIGNAL)