



B-757
115065
Rev 1: 9/15/02

Installation Instructions

Ultra-Shift Light - 13,000 RPM

PRECAUTIONS:

- ❑ Read ALL instructions before installing instrument.
- ❑ Follow ALL safety precautions when working on vehicle—wear safety glasses!
- ❑ ALWAYS disconnect (-) negative battery cable before making electrical connections.

HELP?:

- ❑ If after reading these instructions you don't fully understand how to install your instrument(s), contact your local Stewart Warner distributor, or contact our Technical Support Team toll free at **1-866-797-7223 (SWP-RACE)**.
- ❑ Additional applications information may be found at www.SW-Performance.com.

GENERAL APPLICATION:

12-volt DC negative (-) ground electrical systems (11-20 VDC operating voltage range).

SHIFT-LIGHT MOUNTING:

- ❑ The *Ultra-Shift Light* may be mounted on a roll cage, steering column, dash, existing tachometer, or other locations of high visibility.
- ❑ To mount the *Ultra-Shift Light* on the dash, use the bracket and screws provided.
- ❑ To mount to a roll bar or steering column, use a hose clamp to secure.
- ❑ To mount on an existing tachometer, loosen the mounting strap and insert the base of the *Ultra-Shift Light* under strap and retighten the bolts.

SHIFT-LIGHT WIRING (Figure 1):

1. Disconnect negative (-) battery cable.
2. Using 18-ga. wire, connect the (**BLACK**) wire to a clean (rust/paint-free) ground, preferably battery negative terminal.
3. Using 18-ga. wire, connect the (**RED**) wire to a switched +12V source, like the ignition wire.
4. Using 18-ga. wire, connect the (**GREEN**) wire the coil negative or the tachometer terminal of the ignition module.
5. Reconnect the negative (-) battery.
6. Set the pulses per revolution (PPR). Refer to the programming section.

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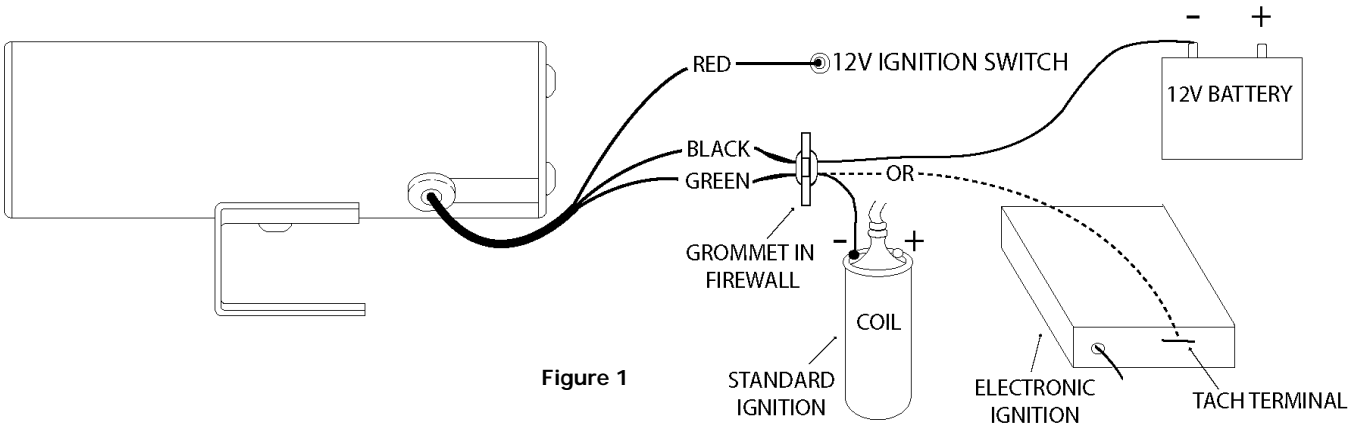


Figure 1

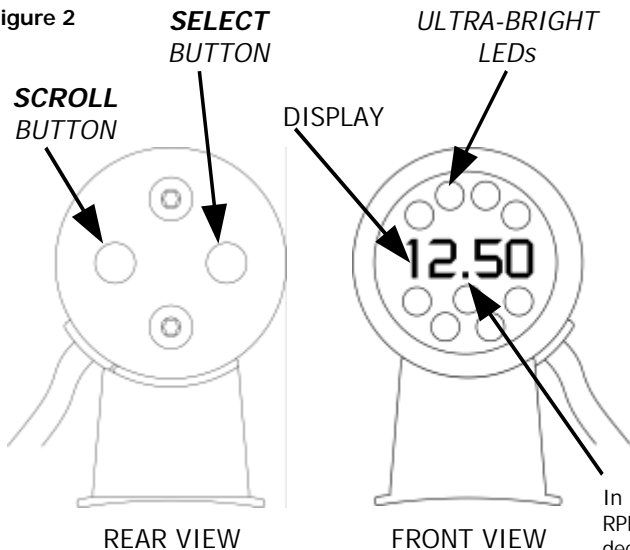
NEVER CONNECT GREEN WIRE TO THE COIL WHEN USING AN MSD OR SIMILAR HIGH OUTPUT CAPACITIVE DISCHARGE STYLE IGNITION SYSTEM

Damage to the shift light will occur—Connect GREEN wire to the tachometer terminal only.

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Figure 2



PROGRAMMING (FIGURE 2):

Programming the *Ultra-Shift Light* is done through the two (2) buttons, **SCROLL** & **SELECT**, on the back of the unit. While in programming mode the **SCROLL** button scrolls through the menus and the **SELECT** button selects the menu options.

1. To enter the programming mode, press both **SCROLL** & **SELECT** buttons at the same time.
2. The LED cluster will flash three times indicating program mode.
3. Release both Buttons.
While in programming mode, there are three (3) parameters in the **MAIN MENU** that can be adjusted plus an additional option "**dOnE**" which exits program mode and save all changes). These are "**SHP**" (set shift-point), "**dISP**" (turn RPM display on/off), "**PPr**" (set number of pulses per crankshaft revolution).
4. To exit programming mode, return to the **MAIN MENU**, scroll to "**dOnE**" and press the **SELECT** button to store all changes and exit to normal operation.

In order to display up to 13,000 RPM with only 4 digits, a decimal point is displayed and the right most digit is dropped when the RPM exceeds 9990.

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CALIBRATION (PPR/Number of Cylinders):

Until recently, tachometers were calibrated based on the number of cylinders in the engine. Now, there are all types of engine control modules (ECMs - on-board computers) and distributor-less ignitions and the old standard rule—"half the number of cylinders equals the pulses per revolution (PPR)"—no longer applies. "Pulses per revolution" relates to how many times the ignition fires per crankshaft revolution. The tachometer outputs from the ECMs can range from 1-PPR to 4-PPR for a V-8 engine. So, the new standard is to refer to PPR instead of the number of cylinders.

SIGNAL INTERFACING:

The *Ultra-Shift Light* is also designed to work with a wide variety of ignition types, including standard inductive [coil (-) connection] and any ignition system with a clean tachometer output signal. The input level can range from TTL 5V (outputs from newer engine control modules) and 300-400 volt pulses from coil (-) on most inductive ignition systems. Ultra-Shift will operate on most traditional capacitive discharge ignitions when connected to the ignition primary circuit. However, for high-output CD's (such as MSD) only connect to the tach output terminal, never the coil primary. It's best to consult our tech support hotline if your unsure, rather than risk damage to the Ultra-Shift, ignition or your warranties.

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SHIFT RPM SET-UP (Range 1000 to 13,000 RPM):

1. Enter programming mode.
2. Scroll to the "**SHP**" parameter using the **SCROLL** button, then press the **SELECT** button to select.
3. The display will show the current shift point setting (or the default 3000 RPM for a new shift light).
4. Holding down the **SCROLL** button will cause the value to increment slowly. After holding down for one second, the values increment quickly. Simply release the **SCROLL** button and press it again to go back to incrementing slowly, or press the **SCROLL** button repeatedly to increment one at a time.

NOTE: When scrolling above 9990 RPM, a decimal point will appear in the center of the display to indicate that the far right digit will not be displayed (refer to figure 4).

5. If the desired shift RPM is missed, simply continue to hold the **SCROLL** button and the value will wrap around and start at 1000 RPM again.
6. Once the desired shift RPM is displayed, press the **SELECT** button to return to the **MAIN MENU**.
7. To exit programming mode, from the **MAIN MENU** scroll to "**dOnE**" and press the **SELECT** button to store all changes and exit to normal operation.

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MEMORY FUNCTIONS (Max RPM Recall and Clear):

The *Ultra-Shift Light* stores one peak RPM value. It is stored in memory until it is exceeded or cleared by the user.

1. At any time during normal operation, the max RPM recall can be displayed by pressing the **SCROLL** button.
2. The internal display will show "**PEAC**", then display the actual maximum RPM while the LED cluster flashes twice.
3. To clear the stored peak value, press and hold the **SCROLL** button. The display will read "**PEAC**", show the current peak value, and after three (3) seconds it will return to zero. The LED cluster will flash indicating a successful clear, then return to normal operation.

LED CLUSTER INTENSITY (Low, Medium, and High):

There are three selectable intensity settings for the LED cluster.

1. To change the intensity of the LED cluster, press and hold **SELECT** button to enter *intensity select mode*.
2. The LED cluster will turn on at the highest intensity for one (1) second, change to the intermediate intensity for one (1) second, change to the lowest intensity for another second, then repeat.
3. To select intensity, simply release **SELECT** button when the LED cluster is at the desired intensity. The LED cluster will flash once at the newly selected intensity to confirm the setting.

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PPR SET-UP (1, 1.5, 2, 2.5, 3, 4, 5, 6 PPR)(Figure 3):

1. Enter programming mode.
2. Scroll to the "**PPr**" parameter using the **SCROLL** button.
3. Select the "**PPr**" parameter option using the **SELECT** button.
4. The display will show the current setting (the default setting is "4" PPR).
5. Press the **SCROLL** button to scroll to the appropriate setting.
6. Once the desired setting is displayed, press the **SELECT** button to return to the **MAIN MENU**.
7. To exit programming mode, from the **MAIN MENU** scroll to "**dOnE**" and press the **SELECT** button to store all changes and exit to normal operation.

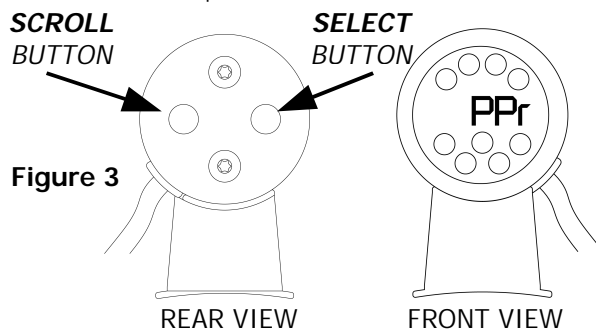


Figure 3

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RPM DISPLAY ON/OFF:

1. Enter programming mode.
2. Scroll to the "**DISP**" parameter using the **SCROLL** button.
3. Select the "**DISP**" parameter option using the **SELECT** button.
4. The display will show the current "On"/"OFF" setting (the default setting is "OFF").
5. To change the setting press the **SCROLL** button to toggle between "ON" & "OFF".
6. Once the desired setting is displayed, press the **SELECT** button to return to the **MAIN MENU**.
7. To exit programming mode, from the **MAIN MENU** scroll to "**dOnE**" and press the **SELECT** button to store all changes and exit to normal operation.

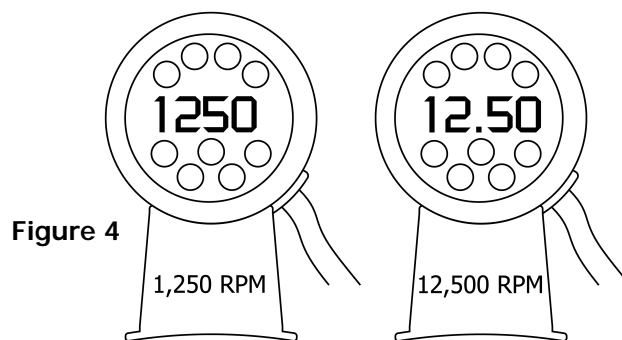


Figure 4

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CLEANING DIRECTIONS:

- For proper cleaning of instrumentation/accessories, use a glass cleaner or mild detergent with a spray on and wipe method.

WARRANTY INFORMATION:

TWO (2) YEAR LIMITED WARRANTY. SWP products are warranted against defects in workmanship and materials for a period of two (2) years from the date of purchase. Proof-of-purchase is required; otherwise, the warranty period shall default to two (2) years from date-of-manufacture (as indicated by the date code on the product). See detailed Warranty Policy for other Terms & Conditions.

STEWART WARNER PERFORMANCE

1-866-SWP-RACE (797-7223)

www.SW-Performance.com



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