

Troubleshooting

When you turn the ignition on, the Shift-I will give a quick startup demo. It will then show battery voltage, typically 3 or 4 lights. Start the engine. After ~3 seconds, the display will revert to RPM display mode.

DISPLAY NOT RESPONDING TO RPM

Usually this is either a setting or connection problem. First, perform a “System Reset” (User Manual, page 18) to restore to factory defaults. If still not working, increase the “Sensitivity” to 6 and set the “Calibration” to the lowest 0.5 (User Manual, pages 15 and 3). Next, double check all wiring connections.

FLICKERING DISPLAY

The RPM signal has electrical noise. Usually a low “Sensitivity” setting of 3 or 4 will filter this out (User Manual page 15). Otherwise, make sure the RPM wire is not too close to parts that generate electrical noise. For example, spark plug leads, coils, fuel injectors, alternator, solenoids etc... Both ground and ignition connections should be located within the cabin.

ACCURACY

The Shift-I responds to RPM increasing very quickly. Considerably faster and more accurate than most instrument gauges. Which means it may respond before the gauge needle does. Once a light turns on, the RPM has to drop a certain amount before it will turn off. This prevents a light flickering when the RPM is hovering near the turn on/off point. Quite an important feature! It is also configurable, see page 13 of the User Manual. The default setting is quite good. Set your RPM display range before changing this setting.

FURTHER TROUBLESHOOTING...

1. Make sure you have plugged all connectors back together after installation.
2. Does everything else work... if not, you may have accidentally shorted some wires during installation. Check all fuses. Don't forget there may be a separate main fuse located near the battery.
3. Double check the ignition and ground wiring to make sure you got the right ones. With ignition on, measure the voltage at the Shift-I™ to ensure it has power.
4. If you have used the wire snap on clips, re-clip them to ensure a connection has been made.
5. Contact Ecliptech for prompt technical support. Give us accurate details to work with, so we can provide you with specific advice. www.ecliptech.com.au

Mounting the Display

Included are two high performance acrylic adhesive foam pads, which have excellent resistance to ageing, water, most solvents and UV light. They adhere really well to plastic, but not to vinyl (particularly those with protective waxes applied). They can easily be safely removed, however if in doubt, first test an area with a small piece in an appropriate place. Clean the surfaces and cleaning residue before applying the adhesive pads.

Immediately after application, they can be removed or re-positioned without great effort. The pads take a couple of days to achieve the maximum bond strength, after which, they will most likely tear apart before coming off. Usually the remains can be rubbed off (without leaving a residue), and without any chemicals.

The Shift-I™ must be mounted behind a windscreen, where it is not subjected to the wind pressure or rain. Choose a place to mount the unit where the lights are clearly visible and do not interfere or obstruct the drivers view. Do not place it in a location where the headlights from another vehicle are incident on the display, as the light sensor will assume it is daylight and automatically increase the brightness. Test the brightness level is suitable in both light and dark conditions. Adjust as required (see User Manual, page 7).

Using an RPM Display...

Tacho gauges mostly go unused, as they are not visible for when you need them. However to get the most from your engine, they are very important. Such gauges provide an accurate reference for where the engine makes the most torque.

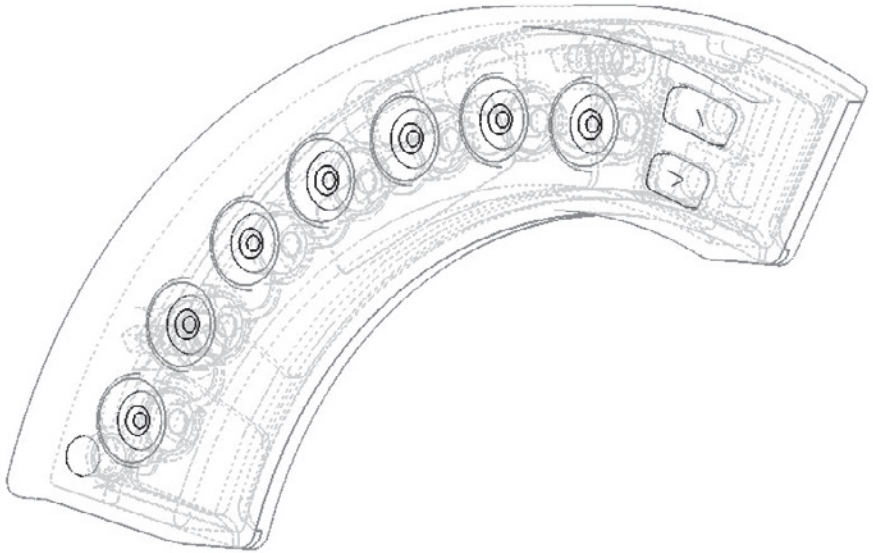
The Shift-I provides an RPM gauge in your peripheral vision that focuses on a range of RPM. This gives a consistent and useful reference for where the engine makes the most torque. Up shifting, down shifting, identifying optimal corner entry/exit gear selection, staging RPM etc... It's a drivers reference for maintaining pace, tyre/fuel management and to provide immediate feedback on corner exit RPM vs line taken.

The Shift-I provides a tool to form and tune new habits. Also to break old ones, like over braking and coasting. This can increase your level of performance, control and also engine life. Importantly, this is achieved without taking your eyes off the road.



Installation & Quick Start Guide

V2.0



The Shift-I is compatible with a wide range of vehicles and ignition systems.

This guide shows the various connection methods for installation, along with useful information to get you started.

Shift-I™ is a highly engineered progressive RPM indicator. The lights are user programmable, to allow you to focus on the RPM range you need to use. You can set where the first light turns on and where they flash. Usually this is from where the torque kicks in through to redline. The lights in-between are automatically set at equally spaced RPM points, which gives you a predictable scale for anticipating a smooth & planned gear change. Various display modes are included to suit your driving preferences.

Why seven lights? Extensive testing determined that within your peripheral vision you can instantly and easily recognize how many of the seven lights are illuminated. Any more and you need to concentrate, which would otherwise remove your attention from where it needs to be. Any less and the RPM trend information is lost. During acceleration, you will be able to distinguish the progression of the lights. The result is a consistent reference point with smooth, anticipated shift points.

Wiring



GROUND

For vehicles, the easiest place to connect ground is at a local chassis ground point around the instrument and pedal area. Take the panel off above the pedals, which is where you usually find the fuse panel. Look around this area and there is often a bolt on the chassis frame with one or more wires bolted to it. Connect the Shift-I's ground to one of these wires. Alternatively, connect to the ground wire going to the instrument.
Never connect the ground wire near the ignition coils.

POWER

This wire needs to be connected to a circuit that provides 12 volt power when the ignition is switched on. Common locations are at the instrument, fuse panel, key barrel, radio and diagnostic port. Do not use accessories, as this power usually switches off while cranking.
Never connect the ground wire near the ignition coils.

TACHO

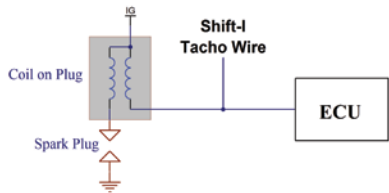
LATE MODEL VEHICLES

The RPM connection is made to an ignition output. The majority of vehicles after ~2005 use coil-on-plug technology (coil is in spark plug connector). Connection is made at either the coil-on-plug or at the ECU. It does not matter if your vehicle has CAN bus.

The Coil-on-plug may have 2 or more wires. Usually you can spot each plug has a different colour thin wire going to it. This is typically the ignition output signal. Ecliptech recommends you confirm the connection with a wiring diagram for your vehicle.

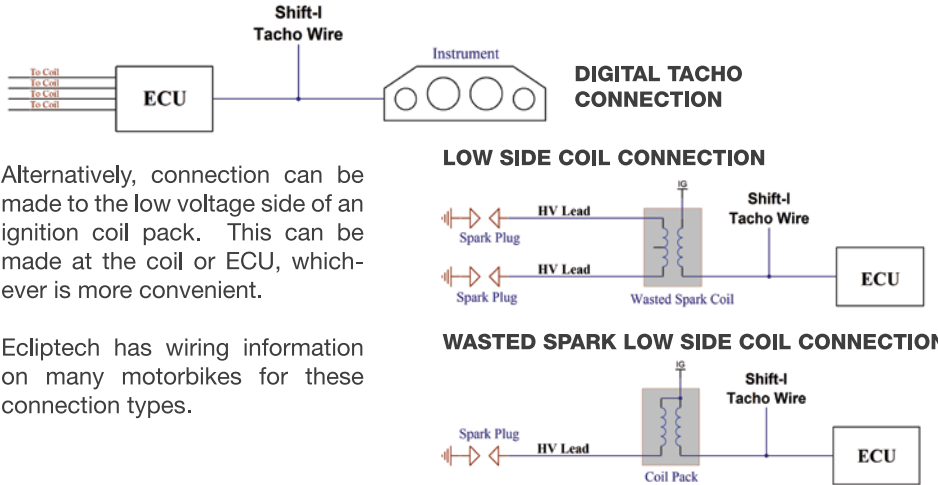
Typical installation is to feed a wire through one of the harness grommets in the firewall. If more convenient, locate the wire going to the ECU and connect there instead. If you have difficulty, you can always have an auto electrician make this connection.

COIL ON PLUG CONNECTION



VEHICLES MID 1990's TO ~2005

Many of these models have a dedicated RPM signal going from the ECU to the instrument. With some vehicles, this wire may also extend to the OBD diagnostic connector (i.e. Porsches). The majority of aftermarket ECU's have an RPM output for a tacho. The Shift-I is compatible with both 5V and 12V square and pulse outputs.

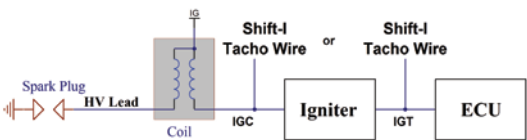


EARLIER MODEL IGNITION SYSTEMS

The Shift-I is designed to work with points distributors. However some distributors can have excessive contact bounce and not provide a good enough RPM signal.

Modern models are usually quite good, as are contactless distributors.

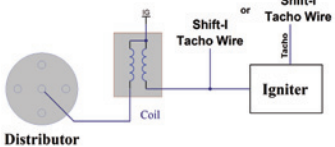
IGC OR IGT CONNECTION



The Shift-I will not be compatible with magneto, capacitor discharge or condenser type ignition systems, unless they have a dedicated 5V or 12V pulse or square RPM signal output.

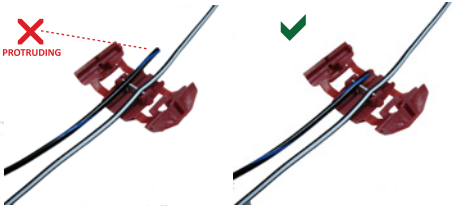
More information can be found at www.ecliptech.com.au, Wiring information can be found at websites such as www.the12volt.com & www.modifiedlife.com. Internet forums and clubs are also good for obtaining wiring information.

DISTRIBUTOR



Wire Clips

Ecliptech have included quality wire clips for your installation convenience. You do not have to use them. They are suited to join wires of similar size to the Shift-I wires. Do not use on thick wires, as damage may result. Close each side so it snaps together tightly.



Synchronise the Shift-I and Vehicle

The “**Calibration value**” is a setting that tells the Shift-I™ how many pulses it receives for each revolution of the engine. This depends on your vehicle and RPM connection.

Using the correct Calibration setting is **VERY important**, as many of the functions, including setting the display range, are dependent on the RPM value. Most functions are locked out if the RPM is above 2,200.

Page 3 of the User Manual advises how to change the Calibration. Most vehicles use 0.5, 1 or 2. Unless you have an odd number cylinder engine, you should not need 1.5, 2.5 or 5. Once this is set correctly, you will have the lights coming on at 1000, 2000, 3000 etc... Then proceed to adjusting the RPM display range.

Unsure which Calibration value to use? Start the engine and see if you get the lights coming on at 1000, 2000, 3000rpm etc... If the lights are coming on too soon, increase the calibration. If they are not turning on or you have to rev the RPM too high, reduce the calibration. Most common settings are 0.5, 1 and 2.

Setting the RPM Display Range

You can set the Shift-I to show the RPM between a specific range, for example 3150 to 6200rpm. Page 4 in the User Manual shows how to set the range. Initially, you will only be able to set in steps of 1000. i.e. 3000 to 6000. When you have set it close to the RPM range you want, reduce the step size to hundreds (see page 8 in the User Manual) and set your RPM range more accurately to suit your engine.