

# Micro DYNAMICS

DIGITAL SERIES

## SWIFT SHIFT - DSS3 Shift Light, Rev Limiter & Full Throttle Gear Shift (for twin coil applications)

MicroDYNAMICS' Swift Shift digital rev limiter provides up and down gear shift indication, a full throttle gear shift function and protection against over revving which can easily lead to serious engine damage. Its precise microprocessor control provides high accuracy, reliability and ease of use in a compact size.

- Features:**
- Dual rev limits for full throttle gear shift (FTG.)
  - Ultra bright Up/Down gear shift LEDs
  - Digital accuracy
  - Half speed set
  - Easy re-set
  - Adjustable to any limit between: 1,000 - 40,000 sparks / minute. (e.g.: 500 RPM to 20,000 RPM on 4 cylinder engines.)
  - No-loss back up memory
  - Simple to fit

**Applications:** Twin coil and distributor. Negative earth systems. All contact breaker, optical, and most transistorised and ECU controlled ignition systems. Not for use with capacitive discharge ignition.

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Thank you for choosing a quality MicroDynamics product.

Before commencing any installation, it is recommended that the vehicle's battery is first disconnected.

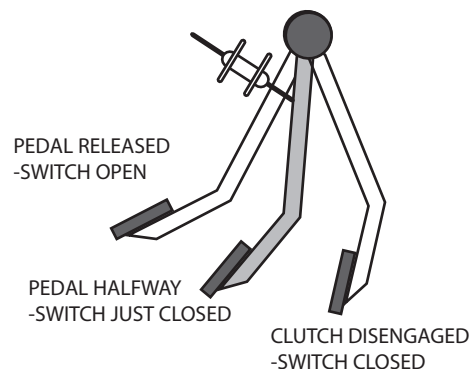
### Installation Procedure

#### Clutch switch

Mount the clutch switch (supplied) above the vehicle's clutch pedal or in any position along the clutch activator linkage, such that the switch is partially compressed and therefore open circuit when the clutch pedal is released.

Some production cars are equipped with a threaded mounting hole above the clutch pedal into which the clutch switch can be installed. If the vehicle does not have this mounting hole, a bracket arrangement will have to be fabricated.

Whatever the mounting arrangement, the clutch switch must have good electrical contact with the vehicle's chassis EARTH.



#### Note:

It is most important to ensure that the switch is adjusted so that electrical contact is made before the clutch is disengaged. This will determine that the maximum rpm is not exceeded when the Full Throttle gear change is activated.

#### Swift Shift

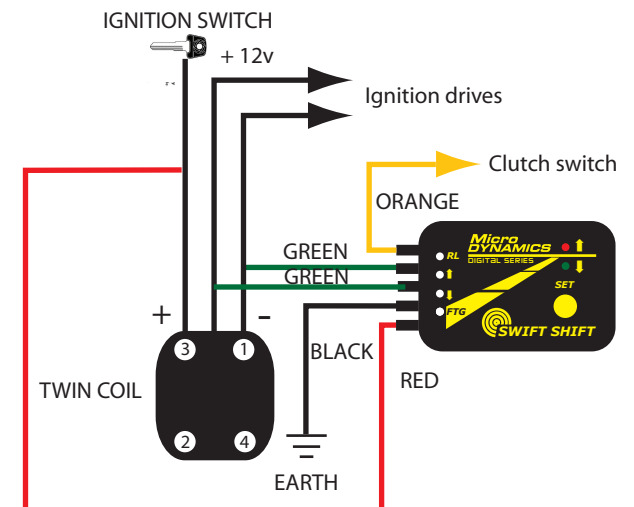
Select a suitable mounting position on the dash board so that the gear shift LEDs are visible to the driver and the unit is close enough to the clutch switch to connect the ORANGE wire.

Using a 2mm hex (Allen) key, remove the bracket from the Swift Shift unit. Fix the bracket to the vehicle using two #6 screws supplied (a 3mm hole will need to be drilled for each.) Once in place, fit the Swift Shift unit on to the bracket and replace the bolts. Adjust the angle of the unit and tighten the bolts. Take care not to over tighten as this could result in damage to the unit. Alternatively, use a double-sided adhesive pad to fix the Swift Shift unit to a convenient flat surface.

Connect the BLACK wire to a good earth using the #10 screw and ring terminal (supplied), having first drilled a 4mm hole.

Locate the wires connected to the ignition coils or coil pack. Identify the 12 volt supply wire and the two ignition drive wires. With the ignition switched off and using the blue T-splice connectors (supplied), connect the RED wire onto the supply wire and a GREEN wire to each of the ignition drive wires.

Next, connect the ORANGE wire using the bullet crimp connector (supplied) to the clutch switch.



Lit code: 90290

## RPM Set Procedure

All engine rpm values are stored in the Swift Shift using the following procedure:

Start the engine. Press and hold the button for the desired function, then press and hold the yellow SET button. The Red or Green LED will flash twice and then remain lit indicating the Swift Shift has entered the value store mode. With both buttons still pressed, use the throttle to set the desired rpm. As soon as the engine speed is stable release the SET button. The Green LED will flash briefly.

The Swift Shift will measure and store the engine speed. All settings are stored at the actual rpm with the exception of Rev Limit for which the measured rpm is doubled. Settings may be re-adjusted at any time by repeating this procedure.

Settings will not be lost even if the vehicle's battery is removed for long periods..

### Rev Limiter (RL button - Red LED):

For setting the Rev Limit, it is necessary only to run the engine to HALF your desired maximum speed. Follow the procedure described above. As soon as the engine speed is stable at the half maximum speed, release the RL and SET buttons. The Swift Shift will measure the engine speed as the buttons are released, double it, and store it to memory.

### Shift Up Light ( ⬆ button - Red LED):

Determine your shift up point (usually just above peak power) and carry out the set procedure as described above using the UP and SET buttons.

### Shift Down Light ( ⬇ button - Green LED):

Determine your shift down point (usually the bottom of the useful power band) and carry out the set procedure as described above using the DOWN and SET buttons.

In normal operation both LEDs will be off whilst the engine is operating within the usable power band. The illumination of either LED would indicate that the driver should change Up or Down in gears to get the most potential from the power delivery of the engine.

### Full Throttle Gear shift (FTG button - Green LED)

Carry out the set procedure using the FTG and SET buttons.

If the clutch pedal is now pressed when the engine speed is above the FTG speed the Swift Shift will assume a gear change under full throttle is being made and will apply a secondary limit to prevent the engine rpm increasing whilst the pedal is depressed.

For example: with the FTG set at 4,000 rpm, if the driver presses the clutch pedal at 5,500 rpm the Swift Shift will hold the revs at 5,500 rpm while the clutch is disengaged. This allows the driver to safely change up a gear without lifting off the throttle pedal for quicker gearshifts and improved acceleration.

If the clutch pedal is pressed when the engine speed is below the FTG speed the Swift Shift will not activate the secondary rev limit as this may hinder acceleration at the start line.

Using the supplementary Rapid Start Switch (RS1) the FTG feature of the Swift Shift can be used to limit engine rpm from a standing start offering a form of Launch Traction Control.

### *Accidental Low Rev Limit Set.*

If the Rev Limit is set very low or close to idle, it is possible that it becomes difficult to run the engine to re-set the unit to a higher limit. Engaging the RL set procedure will defeat the existing rev limit to allow the engine to rev freely.

Note: The RL set procedure can be only entered with the engine running and below the existing rev limit. If the current setting is too low to allow the engine to run, it may be necessary to return the unit to the factory to clear the low value.

## Warning

The Swift Shift is an engine protection device and should not be used as a governor nor to limit road speed. No liability will be accepted for any damage to either persons or property, and in particular the engine, as a result of the engine speed limit being adjusted incorrectly, either too high or too low.