



# **DT-RL**

**DIGITAL TACHO**

**&**

**REV-LIMITER**

**OPERATING**

**INSTRUCTIONS**

## How it Works

The Otto Racing **DT-RL** Digital Display is a combined Digital Tacho and Rev-Limiter. Features include:-

- \* Digital Tacho with Maximum RPM recall
- \* Dedicated 8 LED Array for RPM. Fully programmable to operate within any RPM range
- \* Rev-Limiter suitable for single coil inductive ignition systems

The display consists of an arc of 8 LED's and a 4 and a half digit LCD (liquid crystal display). The 8 RPM LED's can be configured to start and stop at any RPM allowing it to operate within a very narrow RPM band. This is done by setting the RPM for the first LED and then setting the step between LED's. For example the first LED could be set to 5000 rpm and the step size could be set to 200 rpm. The first LED would then come on at 5000 rpm, and subsequent LED's would come on at 5200, 5400, 5600, 5800, 6000, 6200, and 6400 rpm.

The rev-limiter function works by cutting the ignition momentarily when a preset RPM is reached, and hence limiting the RPM. The period of time the ignition is cut for is adjustable to give a soft or hard cut.

It is designed to work on engines with a single coil inductive ignition coil. It is not designed to work on CDI (Capacitive Discharge Ignition) or multi coil ignitions as fitted to some motorbike engines.

## Maximum RPM Recall

To recall the maximum RPM press the button on the side of the unit and keep pressed until '**rEC**' (for recall) is displayed, then release the button. The maximum RPM will then be displayed on the LCD.

The Maximum RPM is retained in memory when power is removed. The old Maximum RPM is cleared when the engine is started again.

## Setting Up

Setting up is very simple and achieved via the single button on the left hand side of the display. To setup proceed as follows:-

- 1, Press and hold in the button until '**SEt**' is displayed, then release the button. (Note that the display will first display '**rEC**').
- 2, Next press and hold in the button again. The display will scroll through the setup parameters, displaying the parameter name first and then the parameter value.
- 3, Release the button when the parameter you wish to change is displayed.
- 4, Press and hold in the button. The parameter value will increase in steps.
- 5, Release the button when the required value is displayed. The new value will then be saved in memory.

The parameters in the order in which they are displayed are:-

- '**bri**' - LED Brightness
- '**LEd1**' - The RPM at which the first of 8 LED's is illuminated.
- '**StEP**' - The increment at which subsequent LED's are illuminated.
- '**Cut**' - Rev-Limiter Cutout
- '**Soft**' - Soft/Hard Cut
- '**r.L.**' - Enable/Disable Rev-Limiter
- '**CYL**' - Number of cylinders

## LED Brightness (**bri**)

The brightness of the LED's can be set so that they can be easily read in various ambient light conditions. There are four settings from 1 to 4.

## RPM LED's

The 8 LED's can be programmed to start and stop within any rev band. This is done by setting the RPM that the first LED comes on and setting the increment (**StEP**) between subsequent LED's. The first LED can be programmed to come on between 3,000 RPM and 14,000 RPM in increments of 100 RPM. The size of the step between LED's can be selected between 50 RPM and 800 RPM in increments of 50 RPM.

As there are 8 LED's (i.e. 7 increments between LED's) the RPM at which the last LED will be illuminated will be "**LEd1** + 7 x **StEP**".

## Rev-Limiter RPM (Cut)

This parameter sets the RPM at which the ignition is cut. It can be set between 5000 RPM and 10,000 RPM in increments of 100 RPM.

## Soft/Hard Cut (Soft)

The rev-limiter function works by cutting the ignition for a short period of time. This time period is adjustable to give a soft or hard cut. This setting is adjustable between 1 and 5 with 1 being the softest setting. The unit is shipped with the default setting 3.

## Enable/Disable Rev-Limiter (r.L.)

The rev-limiter function can be disabled by setting this parameter to **OFF**. When turned off the tacho and shift lights still functions as normal.

## Configuring for Different Engines (CYL)

The instrument will operate on most 4 stroke engines with a normal inductive ignition coil and 1,2,4,5,6 or 8 cylinders. Set the “**CYL**” parameter to the correct number of cylinders.

# INSTALLATION

Wiring in the instrument is very simple. However care must be taken with any electronic equipment and all connections should be of a high standard.

<b>BROWN</b>	+ 12 volts Supply
<b>GREEN</b>	Earth (0v)
<b>BLUE</b>	-Ve terminal on Ignition Coil

**It is recommended that the +12 volts and earth are not taken directly from the ignition coil as this could introduce an unacceptable quantity of electrical interference.**